2018 Annual Navy Drinking Water Quality Report
Portsmouth Naval Shipyard

June 2019

**Introduction**

This is an annual report on the quality of drinking water delivered by the Portsmouth Naval Shipyard. Under the "Consumer Confidence Reporting Rule" of the federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public. Presented in this report is information on the source of Shipyard drinking water, monitoring for constituents, and the health risks associated with any contaminants. The bottom line is, YES, your drinking water meets or exceeds all Federal and State requirements and is safe to drink.

**Water Source**

The drinking water being delivered to you is supplied by the Kittery Water District (KWD) and distributed throughout the Shipyard by a distribution system maintained and serviced by Portsmouth Naval Shipyard. Residents of Admiralty Village receive their drinking water directly from the KWD.

KWD uses surface water as the source of supply for the District. Surface water supplies include four reservoirs (manmade ponds) and all are located in the town of York, Maine. They are Boulter Pond, Middle (Folly) Pond, Upper (Folly) Pond and the Bell Marsh Reservoir. Due to KWD’s source water protection program, all recreation is prohibited in and directly around the reservoirs. Raw water is treated at the KWD filtration plant before delivery to the Shipyard.

The Shipyard maintains and services miles of water main that deliver safe, clean water to its customers and to provide water for fire protection. The Shipyard also maintains a one million gallon storage tank (the water tower) to satisfy peak demands. The Shipyard used an average of 1.5 million gallons (MGs) per day in 2018. The Shipyard also performed annual maintenance by flushing hydrants and exercising valves, waterline repairs, and hydrant replacements.

**Security**

Due to Homeland Security Advisories and the heightened threat of attacks on utilities, KWD continues to monitor the water system very closely: Both the source water and the distribution system water parameters. If anyone observes suspicious activity that
may impact the source water or distribution system, contact your local law enforcement agency.

**Water Production and Treatment Process**

KWD provided over one billion gallons of water to its customers in 2018. KWD has signed a Mutual Supply Agreement with an interconnection between Kittery and York water systems. KWD has taken a proactive approach to secure a second, redundant, finish-water supply should an emergency occur.

KWD has a full conventional treatment plant, which consists of the following processes: coagulation/flocculation, sedimentation, filtration and disinfection.

The coagulation/flocculation process is the addition and mixing of two chemicals, aluminum sulfate and lime. This process brings the micro particles in the water together, forming larger particles, which can settle out of the water. The sedimentation process is a length of time that the water has to release the particles in a designated basin in the filtration plant. The filtration process consists of two sand media beds that are known as “rapid sand filtration filters.” This is the final “cleaning” process that the water goes through.

The disinfection process is where the water is disinfected with chlorine and enough is added to ensure that a residual remains in the distribution piping system. Lime is added one last time to adjust the pH of the water. The last chemical added is called Calgon TG-10. This is added to help reduce the amount of iron and manganese present in the water. Calgon is also used for corrosion control, reducing the scale buildup in the water mains and service lines.

**Monitoring of Your Drinking Water**

The Shipyard is a non-permitted consecutive drinking water system that obtains all its water from the KWD; consequently, Safe Drinking Water Act (SDWA) regulations do not apply to the Shipyard. However, SDWA regulations do apply to the KWD and Navy Policy requirements apply to the Shipyard. Navy policy requires extensive sampling and testing to ensure safe drinking water and relevant results are included in this report.

The Shipyard and KWD use Environmental Protection Agency (EPA)-approved laboratory methods to analyze your drinking water. Water samples are taken from the distribution system and customers’ taps and then shipped to an accredited laboratory where water quality analyses are performed.

The Shipyard monitors for the contaminant groups listed in the following table using EPA-approved methods:
Analyte Groups and Monitoring Frequency

<table>
<thead>
<tr>
<th>Test</th>
<th>Frequency</th>
<th>x # of Samples</th>
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<tbody>
<tr>
<td>Total Coliform</td>
<td>Monthly</td>
<td>6</td>
</tr>
<tr>
<td>Chlorine (Free &amp; Total)</td>
<td>Monthly</td>
<td>6</td>
</tr>
<tr>
<td>pH</td>
<td>Monthly</td>
<td>6</td>
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<tr>
<td>Temperature</td>
<td>Monthly</td>
<td>6</td>
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<td>Quarterly</td>
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<td>Haloacetic Analysis</td>
<td>Quarterly</td>
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</tr>
<tr>
<td>Heterotrophic Plate Count</td>
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</tr>
<tr>
<td>Odor</td>
<td>Yearly</td>
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</tr>
<tr>
<td>Alkalinity</td>
<td>Yearly</td>
<td>3</td>
</tr>
<tr>
<td>Cyanide</td>
<td>Yearly</td>
<td>3</td>
</tr>
<tr>
<td>MBAS (Surfactants)</td>
<td>Yearly</td>
<td>3</td>
</tr>
<tr>
<td>Total Dissolved Solids</td>
<td>Yearly</td>
<td>3</td>
</tr>
<tr>
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<td>3</td>
</tr>
<tr>
<td>Volatile Organics</td>
<td>Yearly</td>
<td>3</td>
</tr>
<tr>
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<td>Yearly</td>
<td>3</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons</td>
<td>Yearly</td>
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<tr>
<td>Lead &amp; Copper</td>
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<td>20</td>
</tr>
<tr>
<td>Carbamates</td>
<td>3 Year</td>
<td>3</td>
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<tr>
<td>Herbicide Screen</td>
<td>3 Year</td>
<td>3</td>
</tr>
<tr>
<td>Pesticide Screen</td>
<td>3 Year</td>
<td>3</td>
</tr>
<tr>
<td>Toxaphene, Chlorodane</td>
<td>3 Year</td>
<td>3</td>
</tr>
</tbody>
</table>

Water Quality

Both the Shipyard and KWD use State-certified testing laboratories to routinely monitor and test water quality according to Federal and State laws. KWD relies on their staff of State certified water treatment plant operators to maintain and monitor water quality on a daily basis. The Shipyard also performs water quality monitoring in accordance with Navy policy to ensure safe drinking water for Shipyard customers. Review of 2018 laboratory data has confirmed that drinking water obtained from KWD and distributed through the Shipyard system meets all Federal and State requirements. Both Portsmouth Naval Shipyard and KWD will continue to provide safe drinking water to their customers in accordance with appropriate regulations and Navy Policy.
Important Information

The 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 water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

- 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.

- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

- 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.

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. FDA regulations establish limits for contaminants in bottled water that 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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Portsmouth Naval Shipyard continually monitors the drinking water for contaminants. The Shipyard’s water is safe to drink; however, some people may be more vulnerable to contaminants in drinking water than the general population. Immune compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800)426-4791.
Public Involvement

The KWD Board of Trustees meets with the Superintendent each week on Thursday at 7:00 AM, at the office of the KWD. This meeting is open to public participation in regard to decisions that may affect water quality.

This Consumer Confidence Report was prepared by PWD Maine and is a summary of activities during 2018. For additional information regarding this report and supporting documentation, please contact the NAVFAC PWD Maine Environmental Division at x0172.
MISSION STATEMENT

Kittery Water District recognizes that water and watersheds must be preserved, conserved and protected; that an adequate supply of clean water is a basic human right; that water is a public trust, to be guarded by all levels of government acting as an equal partner with the public; and that the best advocates for water are local communities and citizens. The District strives to maintain stable water rates for domestic and municipal purposes.

The 21st annual water quality report to all customers is in accordance with the 1996 Safe Drinking Water Act (SDWA) and provides general information regarding District activities. During 2018, drinking water produced by the Kittery Water District (KWD), met or exceeded all federal and state health safety requirements.

DISTRICT ACTIVITIES IN 2018

- Produced over one billion gallons of water for the homes and businesses of Kittery, Kittery Point, parts of Eliot, the Portsmouth Naval Shipyard and a portion of York.
- Beech Ridge Road, York – replaced 2,747 feet of undersized cast iron water main.
- Old Beech Ridge Road, York – installed 449 feet of ductile iron water main.
- Beech Ridge Road, York – replaced 877 feet of undersized cast iron water main.
- Village Drive, Eliot – installed 1,216 feet of H.D.P.E. water main.
- Heron Point Drive, Kittery Point – installed 906 feet of ductile iron water main and 423 feet of H.D.P.E. water main.
- Milliken Drive, Kittery Point – installed 180 feet of ductile iron water main and 123 feet of H.D.P.E. water main.

2019 CONSTRUCTION SCHEDULE

This coming construction season, our construction crew will be performing water main upgrades to increase fire flows and replace aging infrastructure in the following locations:

- Happy Avenue, Kittery
- Palmer Avenue, Kittery
- Keen Avenue, Kittery
- Mendum Avenue, Kittery

DISINFECTANT MOVING FORWARD

Over the past several months, the Kittery Water District has held a series of public hearings concerning the District’s intention to change the secondary (distribution system) disinfectant of treated water from free chlorine to chloramines. The change to chloramines was a recommendation of studies and planning to upgrade the water treatment plant. This change would improve water quality and facilitate the mutual exchange of water between Kittery and neighboring water districts in cases of emergency.

The proposed change generated public debate about the use of chloramines as a disinfectant. Both “pro” and “con” positions for the use of chloramines have had an opportunity to voice their concerns. Despite the debate, there remains a polarized division of public opinion; however, a common agreement is that free chlorine is an acceptable form of disinfectant. In an effort to provide a mutually agreeable resolution to this debate, the District will continue to use free chlorine as the secondary disinfectant.

At this time, chloraminated water will only be used in cases of emergencies or planned outages where the transfer of chloraminated water from neighboring districts becomes necessary. In these instances, the District will provide as much advance public notice as practicable and in such a manner that public safety and firefighting capabilities are not impacted.

As previously publicized, in the fall of this year, it will be necessary to utilize chloraminated water supplied from York Water District for approximately a one-week period. During this time, the treatment plant will be shut down to enable replacement of the lime chemical feed system. Also, in 2020 it will be necessary to utilize chloraminated water from York Water District to support a four-month plant shutdown in order to replace isolation valves located in the clear-wells.

It is anticipated during transitional periods of switching between free chlorine disinfected water and chloraminated disinfected water, the mixing of the two waters may result in potential taste and odor issues. Through increased flushing and monitoring, the Water District will make every effort to minimize this inconvenience. Refer to the Kittery Water District website at www.kitterywater.org for up to date Water District activities and information on water quality.
LRAA (Locational Running Annual Average)

RAA (Running Annual Average)

SMCL (Secondary Maximum Containment Level)

the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG)

microbial contaminants.

Maximum Residual Disinfectant Level (MRDL)

safety.

available treatment technology.

MCL (Maximum Contaminant Level)

AL (Action Level)

10. Barium
9. Asbestos
7. Antimony
5. Alpha emitters
4. Beta/photon emitters
6a. Uranium
6. Combined radium
5. Beta (e) emitters
4. Gamma emitters
3. Combined radium
2. Fecal coliform and E. coli
1. Total Coliform Bacteria

Inorganic Contaminants

6a. Uranium
6. Combined radium
5. Beta (e) emitters
4. Gamma emitters
3. Combined radium
2. Fecal coliform and E. coli
1. Total Coliform Bacteria

Radioactive Contaminants

12. Cadmium
11. Beryllium
10. Barium
9. Asbestos
8. Arsenic
7. Antimony
6. Combined radium
5. Beta (e) emitters
4. Gamma emitters
3. Combined radium
2. Fecal coliform and E. coli
1. Total Coliform Bacteria

Microbiological Contaminants

Our water was regularly tested for some or all the primary standard contaminants listed below, as regulated by law.

REGULATED PRIMARY DRINKING WATER STANDARDS

Our water was regularly tested for some or all the primary standard contaminants listed below, as regulated by law.

DEFINITIONS OF TESTING TERMINOLOGY

Primary Standard - Quality standards designed to protect your health.

Secondary Standard - Standards relating to the aesthetic qualities of water like taste, odor and color that do not present a health risk.

ppm (Parts per million) – unit of measure

ppb (Parts per billion) or Micrograms per liter – unit of measure

pCi/L (Picosievers per liter) - Picociers per liter is a measure of the radioactivity in water.

NTU (Nephelometric Turbidity Unit) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 3 NTU is just noticeable to the average person.

AL (Action Level) - Concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

TT (Treatment Technique) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

MCL (Maximum Contaminant Level) - The “Maximum Allowed” is 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 “Goal” is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

SMCL (Secondary Maximum Contaminant Level) - The highest level of an aesthetic water quality parameter that is allowed in drinking water.

MRDL (Maximum Residual Disinfectant Level) - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLs do not reflect the benefits of the use of disinfectants to control 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.
Additional Notes:

1) Total Coliform Bacteria: Reported as the highest monthly number of positive samples, for water systems that take < 40 samples per month.
2) Gross Alpha: Action level over 5 pCi/L requires testing for Radium. Action level over 15 pCi/L requires testing for Radon and Uranium.
3) Lead/Copper: Action levels (AL) are measured at consumer’s tap. 90% of the tests must be equal to or below the action level.
4) Total Trihalomethanes (TTHM)/Haloacetic Acids (HAA5): TTHM and HAA5 are formed as a by-product of drinking water chlorination. This chemical reaction occurs when chlorine combines with naturally occurring organic matter in water.
5) Turbidity: Turbidity is a measurement of cloudiness or suspended colloidal matter (silt). Excessive turbidity can cause problems with water disinfection. All samples taken from our system were below 0.549 ntu's for rapid sand filtration media. Therefore, our water filtration system renders your finished drinking water clear and safe to drink.

IMPORTANT INFORMATION

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 household plumbing. KWD is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When water has been sitting in household piping for several hours, the potential for lead exposure can be minimized by flushing your tap for up 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.

MCLs

Maximum Contaminant Levels are set at very stringent levels. A person would have to drink 2 liters of water every day at the MCL level over a course of a lifetime to have a one-in-ten thousand chance of acquiring any adverse health effect.

Source Information

The District obtains our water from four man-made ponds in the town of York, Maine: Boulter Pond, Middle Pond, Upper Folly Pond and Bell Marsh Reservoir. The watershed for these ponds has been tested for potentially harmful pathogens such as cryptosporidium, giardia, and E-Coli. None were detected. Our source water protection program prohibits all but passive recreation around the reservoirs. Frequent watershed protection patrols assure compliance with our watershed protection policies.

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, radioactive material, and substances resulting from human or animal activity. The Maine Drinking Water Program assessed public water supplies statewide in 2003 as part of the Source Water Assessment Program. The assessment considered geology and hydrology, land uses, water testing information, and the extent of land ownership or local ordinance protection to determine how likely the drinking water source is to be contaminated in the future. This evaluation reflected positively on the District’s watershed. The assessment is available to the public upon request. For more information, contact the Drinking Water Program at 207-287-2070.

The District’s water treatment and filtering facility is located at Boulter Pond in York. The filtration process includes the addition of alum and hydrated lime to coagulate organic materials in the raw water. Sodium permanganate is added to oxidize iron and manganese. As water passes through a sedimentation process, organic materials settle out. Water is filtered as it passes through a bed of washed, filtering sand. After filtering, the water is treated with sodium hypochlorite for disinfection. Hydrated lime is added to adjust water pH. Prior to leaving the plant, a corrosion control chemical, trade name AQUA MAG 9600, is added to reduce distribution system pipe corrosion.

Health Information

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **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.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Radioactive Contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.
- **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 runoff, and septic systems.

Our watershed monitoring program has tested for the above contaminants. None were detected. Should any contaminants be introduced, our water treatment process assures that the maximum contaminant level will be below State standards for safe drinking water.

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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).
Public Participation
The Kittery Water District was established in 1907 by the Maine Legislature and is not a part of town government. The Board of Trustees meets with the Superintendent each week on Thursdays at 7:00 a.m. at the office of the Kittery Water District. This meeting is open to public participation.

Important Telephone Numbers and Addresses

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<thead>
<tr>
<th>Service</th>
<th>Phone</th>
<th>Email</th>
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<tbody>
<tr>
<td>Kittery Water District Office</td>
<td>439-1128, 439-8549 (fax)</td>
<td><a href="mailto:kitterywater@comcast.net">kitterywater@comcast.net</a></td>
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<tr>
<td>Kittery Water District Website</td>
<td><a href="http://www.kitterywater.org">www.kitterywater.org</a></td>
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<td>Email address</td>
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<tr>
<td>Kittery Water District Treatment Facility</td>
<td>363-4252</td>
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</tr>
<tr>
<td>Kittery Police Dispatch (after hour emergencies)</td>
<td>439-1638</td>
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<tr>
<td>Michael S. Rogers, Superintendent</td>
<td>439-1128</td>
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</tr>
<tr>
<td>Superintendent’s email address</td>
<td><a href="mailto:mikerkwd@comcast.net">mikerkwd@comcast.net</a></td>
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<tr>
<td>Roger C. Raymond, Jr., Trustee, President</td>
<td>439-1128</td>
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<tr>
<td>Robert P. Wyman, Trustee, Treasurer</td>
<td>439-1128</td>
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<tr>
<td>James E. Golter, Trustee, Secretary</td>
<td>439-1128</td>
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<td>ME PUC’s Consumer Assistance Division</td>
<td>1-800-452-4699</td>
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<tr>
<td>ME DHS, Drinking Water Program</td>
<td>1-207-287-2070</td>
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<tr>
<td>EPA’s Safe Drinking Water Hotline</td>
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The Kittery Water District’s Public Water System Identification Number (PWSID) is ME0090790.