



2013 Annual Navy Drinking Water Quality Report Portsmouth Naval Shipyard

June 2014

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 District's Francis B. Hatch 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 2013. The Shipyard also performed annual maintenance by flushing hydrants and exercising valves.

In addition to waterline repairs, hydrant replacements, some sections of waterline were replaced during the construction of the ECC Building.

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 2013. 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

Test	Frequency	x # of Samples
Total Coliform	Monthly	6
Chlorine (Free & Total)	Monthly	6
pH	Monthly	6
Temperature	Monthly	6
Trihalomethane Analysis	Quarterly	6
Haloacetic Analysis	Quarterly	6
Heterotrophic Plate Count	Yearly	3
Odor	Yearly	3
Alkalinity	Yearly	3
Cyanide	Yearly	3
MBAS (Surfactants)	Yearly	3
Total Dissolved Solids	Yearly	3
Specific Conductivity	Yearly	3
Corrosivity	Yearly	3
Inorganic Profile	Yearly	3
Volatile Organics	Yearly	3
Polychlorinated Biphenyls	Yearly	3
Polycyclic Aromatic Hydrocarbons	Yearly	3
Lead & Copper	3 Year	20
Carbamates	3 Year	3
Herbicide Screen	3 Year	3
Pesticide Screen	3 Year	3
Toxaphene, Chlorodane	3 Year	3

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 2013 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 2013. For additional information regarding this report and supporting documentation, please contact the NAVFAC PWD Maine Environmental Division at (207)438-6618.

Annual Drinking Water Quality Report for 2013

Kittery Water District

17 State Rd., Kittery, ME 03904

May 31, 2014

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 16th 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 2013, drinking water produced by the Kittery Water District (KWD), met or exceeded all federal and state health safety requirements.

DISTRICT ACTIVITIES IN 2013

- Produced over one billion (1,000,000,000) gallons of water for the homes and businesses of Kittery, Kittery Point, parts of Eliot, the Portsmouth Naval Shipyard and a portion of York.
- Brave Boat Harbor Road, Kittery Point – replaced 1,690 feet of undersized, cast iron water main.
- Crockett Neck Road, Kittery Point – replaced 1,500 feet of undersized, cast iron water main.
- Bond Road, Kittery Point – replaced 122 feet of undersized, cast iron water main.
- Cutts Road, Kittery – installed 1,100 feet of ductile iron water main.

2014 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:



Crockett Neck Road, Kittery Point (phase 3 of 3)



Bond Road, Kittery Point (phase 2 of 2)



Folcutt Road, Kittery Point



Cutts Road, Kittery (final phase of construction)



Bridge Street / Oak Terrace, Kittery

WATER FILTRATION PLANT PILOT STUDY

KWD has begun the design phase to build a new water filtration plant. Our current 1959 vintage facility will be 60 years old when we transition into the new facility. In 2013, a summertime pilot study was conducted using two completely different water treatment methods. A wintertime pilot study is proposed for 2014 / 2015. This testing is essential to be certain that the selected treatment process will be compatible with the District's reservoirs at all temperatures and densities.

POLYMER CHEMICAL FEED SYSTEM ADDITION

In 2013, KWD installed a polymer chemical feed system at the water filtration plant. A polymer is a flocculant aid that helps the speed and quality of floc formation that is produced during the water treatment process. The polymer molecules attract the micro particles and forms chains of particles that are larger and heavier than micro particles and therefore settle much quicker. A polymer helps to reduce the floc carryover, which reduces the loading of organics that would have made their way to the sand filters. Cleaner sand filters results in less runtime for the backwash machines resulting in less wear and tear on the equipment and less electricity being used. The micro particles that make their way through the sand filters are a source of food for chlorine. Chlorine is used to disinfect the water. Disinfection byproducts are formed when total organic compounds combine with the chlorine that is in the water. Less organics in the water results in less disinfection byproducts. Elevated levels of disinfection byproducts may cause adverse health effects.

ELIOT TANK MIXER INSTALLATION

In 2013, KWD installed an electric circulation pump inside of its 1.9 million gallon water storage tank located in the Town of Eliot. This mixer was installed to improve the circulation of the water within the tank that, in turn, helps to maintain a more consistent level of chlorine. In the past, this State of Maine approved sampling site has been a source of disinfection byproducts, which is a byproduct of chlorine combining with organic matter and producing a regulated byproduct. Thus far the District has seen improved sample results since the addition of this mixer.

CREDIT / DEBIT CARDS NOW WIDELY ACCEPTED

In February 2014, KWD implemented a new credit / debit card payment system. This service, known as Maine PayPort, is provided by the Information Resource of Maine (InforME) and is offered by a third party working in partnership with the State of Maine. It enables the District to accept credit / debit card payments over the telephone, in person at our business office as well as on our website. A 2 ½% transaction fee applies to all credit / debit card payments with a minimum charge of \$1.00 for payments \$40.00 and under.

2013 Water Test Results

Contaminant:	Results:	Violation:	MCLG:	MCL:	Likely Source:
TOTAL COLIFORM BACTERIA (2013)	0 positive	No	0	1 positive per month or 5%	Naturally present in the environment.
TURBIDITY (12/13)	0.10 NTU	No	NA	0.3 NTU 95% 1 NTU 100%	Soil erosion; suspended materials.
BARIUM (4/13)	< 0.01 ppm	No	2 ppm	2 ppm	Erosion of natural deposits.
TOTAL TRIHALO-METHANES (TTHMs)	28 ppb RAA (Range: 9.4 – 71 ppb)	No	0	80 ppb	By-product of drinking water chlorination.
TOTAL HALOACETIC ACIDS (HAAs)	25.1 ppb RAA (Range: 8.7 – 44.5 ppb)	No	0	60 ppb	By-product of drinking water chlorination.
CHLORINE (2013)	1.6 ppm RAA (Range: 1.2 – 1.9 ppm)	No	4.0 ppm (MRDL)	4 ppm (MRDLG)	Water additive to control microbes.
NITRATE NITROGEN (10/11)	< 0.05 ppm	No	10 ppm	10 ppm	Runoff from fertilizer use. Leaching from septic tanks, sewage. Erosion of natural deposits.
RADIUM (2/11)	1.59 pCi/l	No	0 pCi/l	15 pCi/l	Erosion of natural deposits.

REGULATED PRIMARY DRINKING WATER STANDARDS

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

Microbiological Contaminants

1. Total Coliform Bacteria
2. Fecal coliform and *E.coli*
3. Turbidity

Radioactive Contaminants

4. Beta/photon emitters
5. Alpha emitters
6. Combined radium
- 6a. Uranium

Inorganic Contaminants

7. Antimony
8. Arsenic
9. Asbestos
10. Barium
11. Beryllium
12. Cadmium
13. Chromium
14. Copper
15. Cyanide
16. Fluoride
17. Lead
18. Mercury (inorganic)

19. Nitrate (as Nitrogen)
20. Nitrite (as Nitrogen)
21. Selenium
22. Thallium

Synthetic Organic Contaminants including Pesticides and Herbicides

23. 2,4-D
24. 2,4,5-TP (Silvex)
25. Acrylamide
26. Alachlor
27. Atrazine
28. Benzo(a)pyrene (PAH)
29. Carbofuran
30. Chlordane
31. Dalapon
32. Di(2-ethylhexyl) adipate
33. Di(2-ethylhexyl) phthalate
34. Dibromochloropropane
35. Dinoseb
36. Diquat
37. Dioxin [2,3,7,8-TCDD]
38. Endothall

39. Endrin
40. Epichlorohydrin
41. Ethylene dibromide
42. Glyphosate
43. Heptachlor
44. Heptachlor epoxide
45. Hexachlorobenzene
46. Hexachlorocyclo-pentadiene
47. Lindane
48. Methoxychlor
49. Oxamyl [Vydate]
50. PCBs [Polychlorinated biphenyls]
51. Pentachlorophenol
52. Picloram
53. Simazine
54. Toxaphene

Volatile Organic Contaminants

55. Benzene
56. Carbon tetrachloride
57. Chlorobenzene
58. o-Dichlorobenzene

59. p-Dichlorobenzene
60. 1,2 - Dichloroethane
61. 1,1 - Dichloroethylene
62. cis-1,2-ichloroethylene
63. trans - 1,2 -Dichloroethylene
64. Dichloromethane
65. 1,2-Dichloropropane
66. Ethylbenzene
- 66a. Haloacetic acids
- 66b. Methyl-Tertiary-Butyl-Ether (MTBE) (Maine MCL)
67. Styrene
68. Tetrachloroethylene
69. 1,2,4 -Trichlorobenzene
70. 1,1,1 - Trichloroethane
71. 1,1,2 -Trichloroethane
72. Trichloroethylene
73. TTHM [Total trihalomethanes]
74. Toluene
75. Vinyl Chloride
76. Xylenes
77. HAA5's [Haloacetic Acids]

DEFINITIONS OF TESTING TERMINOLOGY

Primary standards - Quality standards designed to protect your health.

Secondary standards - 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 (Picocuries per liter) - Picocuries 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 5 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 allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL) - 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.

Maximum Residual Disinfectant Level Goal (MRDLG) - 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.

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

RAA (Running Annual Average) –The average of all monthly or quarterly samples for the last year at all sample locations.

2013 TEST RESULTS FOR SECONDARY STANDARDS

	<u>Maximum Level Detected</u>	<u>SMCL</u>
Manganese	0.015ppm	.050ppm
pH	6.7	6.0-8.5
Sodium	4.4ppm	20ppm
Sulfate	17ppb	250ppb
Total Chloride	6ppm	250ppm
Total Hardness	24ppm	500ppm
Zinc	.002ppm	5ppm

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 the 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 also 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 being 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, hydrated lime and a polymer to coagulate organic mate-

rials in the raw water. 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 Aquacros, 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).

Waivers

In 2012, we applied for and were granted a partial or a full three-year waiver for water testing for certain synthetic organic compounds (SOC) (Phase II/V). This is a three year exemption from the monitoring / reporting requirements for the following industrial chemical(s): TOXAPHENE / CHLORDANE / PCB, HERBICIDES, CARBAMATE PESTICIDES, SEMI-VOLATILE ORGANICS. This waiver was granted due to the absence of these potential sources of contamination within a half mile radius of the water source. For any water tests that are not waived, we are required to report contaminants that were detected in our water supply in this CCR.

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

Kittery Water District Office	439-1128, 439-8549 (fax)
Kittery Water District Website	www.kitterywater.org
Email address	kitterywater@comcast.net
Kittery Water District Treatment Facility	363-4252
Kittery Police Dispatch (after hour emergencies)	439-1638
Michael S. Rogers, Superintendent	439-1128
Superintendent's email address	mikerkwd@comcast.net
Roger C. Raymond, Jr., Trustee, President	439-1128
Robert P. Wyman, Trustee, Treasurer	439-1128
James E. Golter, Trustee, Secretary	439-1128
ME PUC's Consumer Assistance Division	1-800-452-4699
ME DHS, Drinking Water Program	1-207-287-2070
EPA's Safe Drinking Water Hotline	1-800-426-4791

The Kittery Water District's Public Water System Identification Number (PWSID) is ME0090790.

Kittery Water District
17 State Road
Kittery, ME 03904-1565

<p>BULK RATE U.S. POSTAGE PAID KITTERY, ME PERMIT NO. 34</p>
