
Annual
WATER
QUALITY
REPORT
Reporting Year 2013
Presented By
Portsmouth Water Division
PWS ID#: 1951010, 1951020, 1661010

There When You Need Us

This water quality report (also referred to as a Consumer Confidence Report) presents our annual water quality results covering all testing performed between January 1 and December 31, 2013. The City is committed to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water quality emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

Community Participation

Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies. You are invited to voice your concerns at any regularly scheduled City Council meeting. Meetings are usually scheduled twice each month on Monday evenings starting at 7:00 p.m. at Portsmouth City Hall, 1 Junkins Avenue, Portsmouth, NH. Meeting dates can be found on our Web site at www.cityofportsmouth.com or by calling (603) 431-2000 for the date of the next meeting. New Castle Water Works customers: Please call (603) 431-6710 for meeting dates and times.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call Terry L. Desmarais, Jr., P.E., City Engineer for the Water and Sewer Divisions, at (603) 427-1530. New Castle Water Works customers: Please call Steve Tabbutt at (603) 431-6710.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does My Water Come From?

The main source of Portsmouth water is the Bellamy Reservoir located in Madbury and Dover. The water is piped to a water treatment plant in Madbury, where it is treated, filtered, and disinfected. This location is also the site of the City's Madbury Wells 2, 3, and 4. From this site, water is pumped under pressure to consumers in Madbury, Dover, and Durham and then to a booster pumping station in Newington. From there, it is pumped to consumers in Newington, Portsmouth, Greenland, Rye, and the New Castle Water Works. Many consumers are also served by the City's groundwater well sources. These wells include the Collins and Portsmouth Wells in Portsmouth and the Greenland Well in Greenland. The Pease International Tradeport is served by the Haven, Smith, and Harrison Wells. The Portsmouth and Pease water systems are interconnected, which allows water to be transferred from one system to the other as needed. All systems are monitored continuously by our certified water operations staff.

How Long Can I Store Drinking Water?

The disinfectant in drinking water will eventually dissipate even in a closed container. If that container housed bacteria before it was filled with the tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

Source Water Assessment

The New Hampshire Department of Environmental Services (NHDES) has conducted a source water assessment of our water system. A copy is available for viewing at the Portsmouth Water Division's office at 680 Peverly Hill Road. Please call (603) 427-1530 for an appointment to view the report. You may also visit the Drinking Water Source Assessment Report's website at http://des.nh.gov/organization/divisions/water/dwgb/dwspp/reports/documents/portsmouth.pdf.

Lead in Home Plumbing

The following standard language is required by the U.S. EPA and NH DES: 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 service lines and home plumbing. We are 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 www.epa.gov/safewater/lead.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 or http://water.epa.gov/drink/hotline.

How Is My Water Treated and Purified?

The treatment process consists of a series of steps. First, source water is drawn from the Bellamy Reservoir. Prior to mixing, coagulation chemicals are added. The addition of these substances cause small particles to adhere to one another (called floc), making them easier to float to the surface in the Dissolved Air Floatation (DAF) system, where they are skimmed off and sent to a drying bed. The water is then filtered through layers of anthracite to remove smaller suspended particles and turbidity (which is a measure of the cloudiness of the water), and clear water emerges. Sodium hypochlorite (bleach) is added at this point for disinfection. We carefully monitor the amount of sodium hypochlorite, adding the lowest quantity necessary to protect the safety of your water without compromising taste. Finally, sodium hydroxide (to adjust the final pH and alkalinity), fluoride (to prevent tooth decay), and a corrosion inhibitor (to protect distribution system pipes) are added before the water is pumped to water storage tanks and into your home or business.

Based on new information from the Centers for Disease Control, the language in the 2012 Consumer Confidence Report (CCR) needs to be clarified regarding the exclusive use of fluoridated water for infant formula. The correct language for the 2012 CCR and for this current CCR is as follows with no qualifying language: "Your public water supply is fluoridated. According to the Centers for Disease Control and Prevention, if your child under the age of 6 months is exclusively consuming infant formula reconstituted with fluoridated water, there may be an increased chance of dental fluorosis. Consult your child's health care provider for more information."

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen and disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at such times. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use, and avoid using hot water, to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The state requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

				Portsmouth Water Division		New Castle		Pease Tradeport			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2006	15	0	2.78	ND–2.78	NA	NA	NA	NA	No	Erosion of natural deposits
Arsenic (ppb)	2013	10	0	1.4	ND–1.4	NA	NA	NA	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2013	2	2	0.0176	0.0082–0.0176	NA	NA	0.015	0.0066–0.015[1]	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2013	60	NA	19	6.6–45	26	16–43	NA	NA	No	By-product of drinking water disinfection
Nitrate[2] (ppm)	2013	10	10	6.8	0.073–6.8	NA	NA	1.6	0.1–1.6	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes]–Stage 2 (ppb)	2013	80	NA	51.1	11–127	75	64–137	NA	NA	No	By-product of drinking water disinfection
Total Organic Carbon (ppm)	2013	TT	NA	3.5	1.8–3.5	NA	NA	NA	NA	No	Naturally present in the environment
Turbidity[3] (NTU)	2013	TT	NA	0.42	0.03–0.42	NA	NA	NA	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2013	TT=95% of samples <0.3 NTU	NA	99.99	NA	NA	NA	NA	NA	No	Soil runoff
Uranium (ppb)	2013	30	0	2	ND–2	NA	NA	NA	NA	No	Erosion of natural deposits

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

				Portsmouth Water Division		New Castle		Pease Tradeport			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2013	1.3	1.3	0.11	0/30	0.099[4]	0/10[4]	0.6	0/10	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2013	15	0	0	2/30	0.001[4]	0/10[4]	0.001	0/10	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	Portsmouth Water Division AMOUNT DETECTED	Portsmouth Water Division RANGE LOW-HIGH	Pease Tradeport AMOUNT DETECTED	Pease Tradeport RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2013	1.0	NA	0.0614	0.0056–0.0614	0.0292	0.0218–0.0292	No	Corrosion of household plumbing systems; Erosion of natural deposits
Manganese (ppb)	2013	50	NA	31.8	8.4–31.8	18.9	ND–18.9	No	Leaching from natural deposits

[1] The sample at the low end of the Range was collected in 2012.

[2] Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider.

[3] Turbidity is a measure of the cloudiness of the water. It is monitored by surface water systems because it is a good indicator of water quality and thus helps measure the effectiveness of the treatment process. High turbidity can hinder the effectiveness of disinfectants.

[4] Sampled in 2012.

Definitions

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

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. Secondary MCLs (SMCL) are established to regulate the aesthetics of water (i.e., taste and odor).

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.

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 contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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