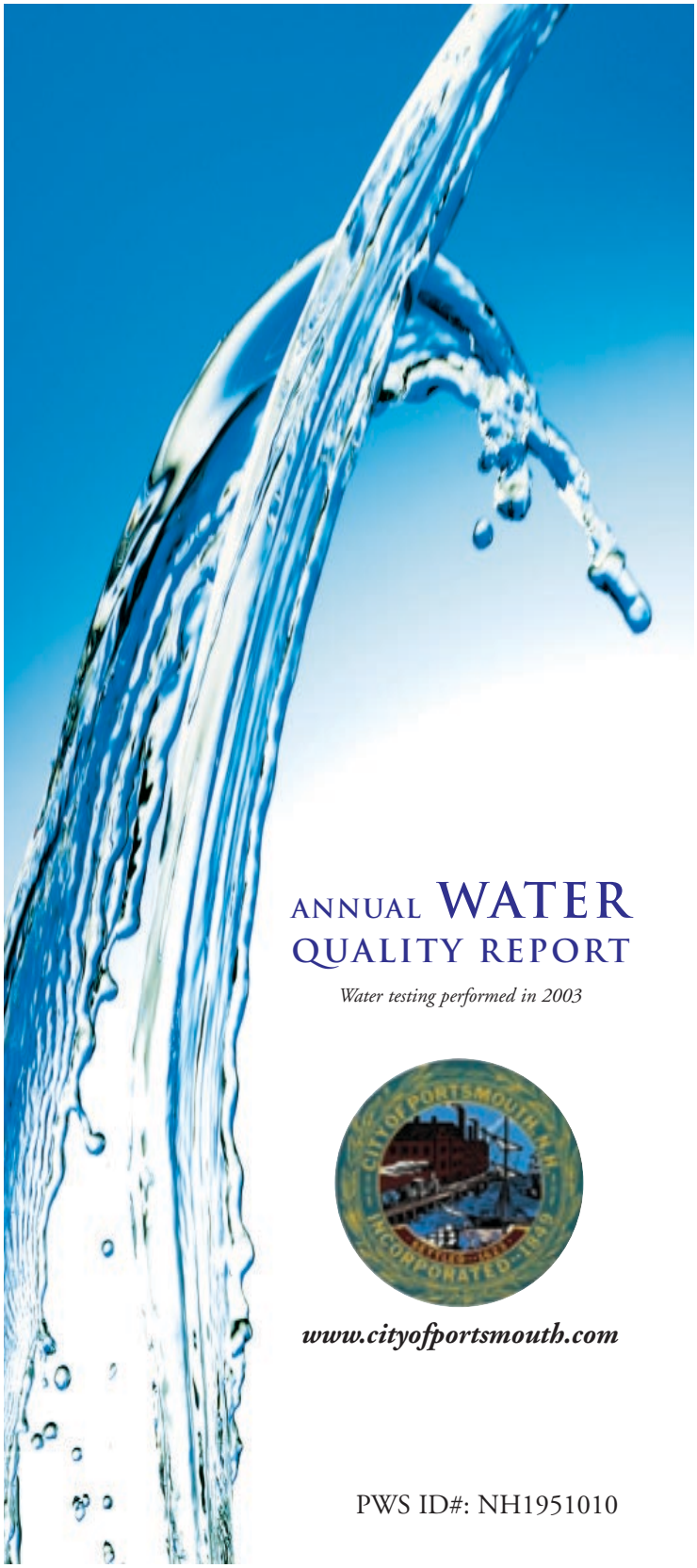

ANNUAL WATER QUALITY REPORT

Water testing performed in 2003

www.cityofportsmouth.com

PWS ID#: NH1951010

Continuing Our Commitment

This annual water quality report covers all testing completed from January through December 2003. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

For more information about this report, or for any questions relating to your drinking water, please call Peter Rice, P.E., City Engineer for the Water/Sewer Division, at (603) 427-1530.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water at any regularly scheduled city council meeting. Meetings are scheduled twice each month on Monday evenings starting at 7:00 p.m. at the Portsmouth City Hall at 1 Junkins Avenue. Call (603) 431-2000 for the date of the next meeting.

Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. Also, the New Hampshire Department of Environmental Services has a Web site (www.des.state.nh.us/waterdiv.htm) that provides complete and current information on water issues in our state. The City of Portsmouth also has a Web site (www.cityofportsmouth.com) that has much useful information on water issues.

Water Conservation Tips

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water, but also can save you money by reducing your water and sewer bills. Here are a few suggestions:

Conservation measures you can use inside your home include:

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures; install water-saving devices in faucets, toilets and appliances.
- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.
- Do not let the water run while shaving or brushing teeth.
- Soak dishes before washing.
- Run the dishwasher only when full.

You can conserve outdoors as well:

- Water the lawn and garden in the early morning.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.
- Use water-saving nozzles.
- Use water from a bucket to wash your car, and save the hose for rinsing.

Information on other ways that you can help conserve water can be found at www.epa.gov/safewater/publicoutreach/index.html.

Is It Safe to Drink Water from a Garden Hose?

No. Substances used in vinyl garden hoses to keep them flexible can get into the water as it passes through the hose. These chemicals are not good for you, nor are they good for your pets. If you do drink water from a garden hose, allow the water to run for a short time in order to flush the hose before drinking or filling your pets' drinking containers. Hoses made with food-grade plastic will not contaminate the water. Check your local hardware store for this type of hose.

Where Does My Water Come From?

The main source of Portsmouth's water is the Bellamy Reservoir located in Madbury and Dover. The water is piped to the 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 the Booster Pumping Station in Newington, where the pressure is boosted up to city pressure. It is then pumped to consumers in Newington, Portsmouth, Greenland, Rye and New Castle. Many consumers are also served by additional groundwater sources, which include the Collins Well and the Portsmouth Well in Portsmouth and the Greenland Well in Greenland. The Pease International Tradeport is served by the Haven and Smith Wells exclusively.

The Source Water Assessment has been performed by the NH DES. A copy is available for viewing at the Portsmouth Water Division Office at 680 Peverly Hill Road. Please call (603) 766-1413 for an appointment to view the report.

How Is My Water Treated and Purified?

The treatment process consists of a series of steps. First, raw water is drawn from the Bellamy Reservoir. The water then goes to a mixing tank where polyaluminum chloride and sodium hydroxide are added. The addition of these substances causes small particles in the water to adhere to one another (called floc), making them heavy enough to settle out of the water. Powdered activated carbon is added (seasonally) to control taste and odors. The water is then filtered through layers of fine sand. As smaller, suspended particles are removed, turbidity disappears 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 (used to adjust the final pH and alkalinity), fluoride (used to prevent tooth decay), and a corrosion inhibitor (used to protect distribution system pipes and reduce the corrosion of lead solder and copper pipes in homes) are added before the water is pumped to sanitized reservoirs, water towers and into your home or business.

Our Lead Exceedance

Routine samples for the Lead and Copper Corrosion Control Program showed that there were nine samples that came back with lead levels above the Action Level. This lead enters the water from the tin/lead solder in the joints of the customers' plumbing systems. Treatment at the water sources was adjusted to reduce the corrosivity of the water even further than before. We continue to monitor the water quality with samples for lead and copper every six months. Infants and children who drink water containing lead in excess of the Action Level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

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.

Substances That Might Be in Drinking 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 can acquire 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 which 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.

Contamination from Cross-Connections

Cross-connections that could contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems) or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand) causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continually jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We are surveying all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test each backflow preventer to make sure that it is providing maximum protection.

For more information, visit the Web site of the American Backflow Prevention Association (www.abpa.org) for a discussion on current issues.

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 table below shows only those contaminants that were detected in the water. We feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state requires us to monitor for certain substances less 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

SUBSTANCE (UNITS)	YEAR SAMPLED	MCL	MCLG	AMOUNT DETECTED	RANGE (LOW-HIGH)	VIOLATION	TYPICAL SOURCE
Alpha emitters (pCi/L)	2002	15	0	0.43	ND-2	No	Erosion of natural deposits
Arsenic (ppb)	2002	10[1]	0[1]	4.6	ND-4.6	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2002	2	2	0.0143	0.0063-0.0143	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Haloacetic Acids [HAAs] (ppb)	2003	60	NA	35	ND-86	No	By-product of drinking water disinfection
Methyl tert-Butyl Ether [MTBE] (ppb)	2003	13	NA	2.37	0.6-6.3	No	Gasoline additive
Nitrate (ppm)	2003	10	10	1.67	0.12-3.34	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Trichloroethylene (ppb)	2003	5	0	0.015	ND-0.72	No	Discharge from metal degreasing sites and other factories
TTHMs [Total Trihalomethanes] (ppb)	2003	80	NA	55.2	3.3-122	No	By-product of drinking water disinfection
Turbidity (NTU)[2]	2003	TT	NA	2.17	0.05-2.17	No	Soil runoff

Tap water samples were collected for lead and copper analyses from 70 homes throughout the service area

SUBSTANCE (UNITS)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90th %TILE)	HOMES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
Lead (ppb)	2003	15	0	15	9	Yes	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

UNREGULATED SUBSTANCES

SUBSTANCE (UNITS)	YEAR SAMPLED	AMOUNT DETECTED	RANGE (LOW-HIGH)
Chloroform (ppb)	2003	0.105	ND-21
Chlorotoluene (ppb)	2003	0.09	ND-9.5
Dichlorobenzene (ppb)	2003	0.085	ND-2.6

[1]These arsenic values are effective January 23, 2006. Until then, the MCL is 50 ppb and there is no MCLG.

[2]Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. During the reporting year, a minimum of 99.3% of all samples taken to measure turbidity met water quality standards.

Radon

Radon is a radioactive gas that occurs naturally in some groundwater. It may pose a health risk when the gas is released from water into air, as occurs during showering, bathing, or washing dishes and clothes. Radon gas released from drinking water is a relatively small part of the total radon in air. Radon is released into homes and groundwater from soil. Samples taken at our water source indicate radon concentrations ranging from none detected to 1,600 picocuries per liter (pCi/L). Inhalation of radon gas has been linked to lung cancer; however, the effects of radon ingested in drinking water are not yet clear. If you are concerned about radon in your home, tests are available to determine the total exposure level. For additional information on how to have your home tested, call (800) SOS-RADON.

Lead in Drinking Water

Lead is a naturally occurring element in our environment. Consequently, our water supply is expected to contain small, undetectable amounts of lead. However, most of the lead in household water usually comes from the plumbing in your own home, not from the local water supply. The U.S. EPA estimates that more than 40 million U.S. residents use water that can contain lead in excess of EPA's Action Level of 15 ppb.

Lead in drinking water is a concern because young children, infants and fetuses appear to be particularly vulnerable to lead poisoning. A dose that would have little effect on an adult can have a big effect on a small body. On average, it is estimated that lead in drinking water contributes between 10% and 20% of the total lead exposure in young children.

We strive to maintain our drinking water supply at an optimum pH and mineral content level to help prevent corrosion in your home's pipes. To reduce lead levels in your drinking water you should flush your cold-water pipes by running the water until it becomes as cold as it will get (anywhere from five seconds to two minutes or longer) and use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead.

For more information, please contact the National Lead Information Center at (800) LEAD-FYI and the Safe Drinking Water Hotline at (800) 426-4791.

Table Definitions

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

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.

NA: Not applicable

ND: Not detected

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water.

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.