ANNUAL WATER QUALITY REPORT

FRESH, SAFE, RELIABLE

We provide fresh, safe water you can count on 24 hours a day, 7 days a week.

IN THIS REPORT

Portland Water District

FRESH – Fresh tap water doesn't just happen. Our planning and operations teams ensure fresh water through careful design and maintenance activities. Main location, material, and size are a few factors considered to balance the correct flows needed to provide adequate supply and fresh water.

SAFE – Our scientists are well-versed on the latest practices, regulations, and water treatment and testing methods. With skill and knowledge, our water quality experts perform over 15,000 analyses a year to ensure water delivered to the tap is clean and safe to drink.

RELIABLE – We know safe water is not a luxury; it's a necessity. We will spend $8 million this year to replace aging water mains to minimize outages. And when outages do occur, our crews respond immediately with the goal to restore service promptly.

This report provides information about where your drinking water comes from, how it's treated, and the results from water quality testing in 2018. For more information, please read this report and visit us online at www.pwd.org.

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The Water Source

Your source of drinking water is Sebago Lake, Maine's deepest and second largest lake. By almost any measure, the quality of water in Sebago Lake is among the highest of any lake in Maine. It is so clean, in fact, that it doesn't need to be filtered before it is disinfected. **This is a designation that only about 50 surface water suppliers out of 13,000 in the whole country can claim.**

This means your water:

- is cleaner than most;
- tastes better than most since filtration typically involves chemical addition which can impart a taste;
- is less expensive than most since a filtration plant could cost upwards of $150 million to construct and is costly to operate and maintain; and
- is safer than most since keeping contaminants out of the water is more effective than trying to remove them from a polluted lake.

A Shared Responsibility

Sebago Lake is not just a drinking water supply. It is a treasured public resource that is used by so many for so much. PWD works with many committed partners to keep it clean. **In 2018 alone, the District worked cooperatively with more than 100 organizations to protect the lake including state and federal agencies, colleges and universities, lake associations and land trusts.** Collaboration amplifies the work of both the District and the partner organization and is a clear benefit to our customers and all Maine people.

Moderate Risk of Contamination

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and can pick up substances resulting from human or animal activity. Although Sebago Lake is very clean today, human activities on and around the lake can pose a risk to water quality. In 2003, the Maine Drinking Water Program (DWP) evaluated all public water supplies as part of their Source Water Assessment Program (SWAP). The assessments considered things like geology, hydrology, land uses, water testing information, and the extent of land ownership or protection by local ordinance to see how likely each Maine drinking water source is to being contaminated by human activities. Their report on Sebago Lake concludes that the lake is at moderate risk of contamination.

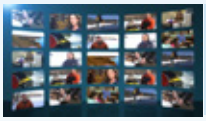
The most significant risks to the long-term protection of Sebago Lake, according to state officials, are boating and ice fishing in Lower Bay and shoreland development. PWD maintains programs that are designed to minimize the risks of these activities. You can get a copy of the assessment for Sebago Lake by contacting PWD at (207) 761-8310 or by calling the Drinking Water Program at (207) 287-2070.

Lowering the Risk of Contamination

Because the lake is used by so many for different purposes, our efforts to decrease the risk of contamination involve multiple approaches.

Our protection program involves:

- water quality monitoring,
- land and water security,
- shoreland zone inspections and pollution prevention actions,
- environmental education and outreach, and
- land acquisition, land conservation, and land management.



Please view our recent videos that describe our SEBAGO LAKE PROTECTION PROGRAM.

www.pwd.org/outreach

The Forest is the Filter

Keeping the land surrounding the lake forested is key to protecting the water quality of the lake since forests naturally clean water. The forests around Sebago Lake act as a natural water filtration system. To help conserve them, PWD works with local land trusts and others to help willing landowners conserve forested land. PWD contributes up to 25% of the cost of these transactions. **Since 2013, this program has helped protect more than 2,800 acres of watershed forest.** These forests will be naturally treating your water forever.

Ensuring Water Quality

Water Purification and Disinfection

Delivering high quality water to our customers is our first priority. We know your water is safe because we regularly monitor and test it. Our water quality experts performed over 15,000 analyses last year. Many inorganic, synthetic organic and volatile organic chemicals, and disinfection by-products are routinely monitored for and not detected.

Primary disinfection: ozone and ultraviolet light
Secondary disinfection: chloramine
Filtration: None, PWD holds a waiver from filtration due to the purity of Sebago Lake

pH adjustment: sodium hydroxide
Corrosion control: zinc orthophosphate
Dental health additive: fluoride (hydrofluorosilicic acid)

In 2018, your water met or surpassed every state and federal requirement. Water samples are tested by state-certified testing laboratories including two Portland Water District laboratories which are certified by the Maine Department of Health and Human Services.

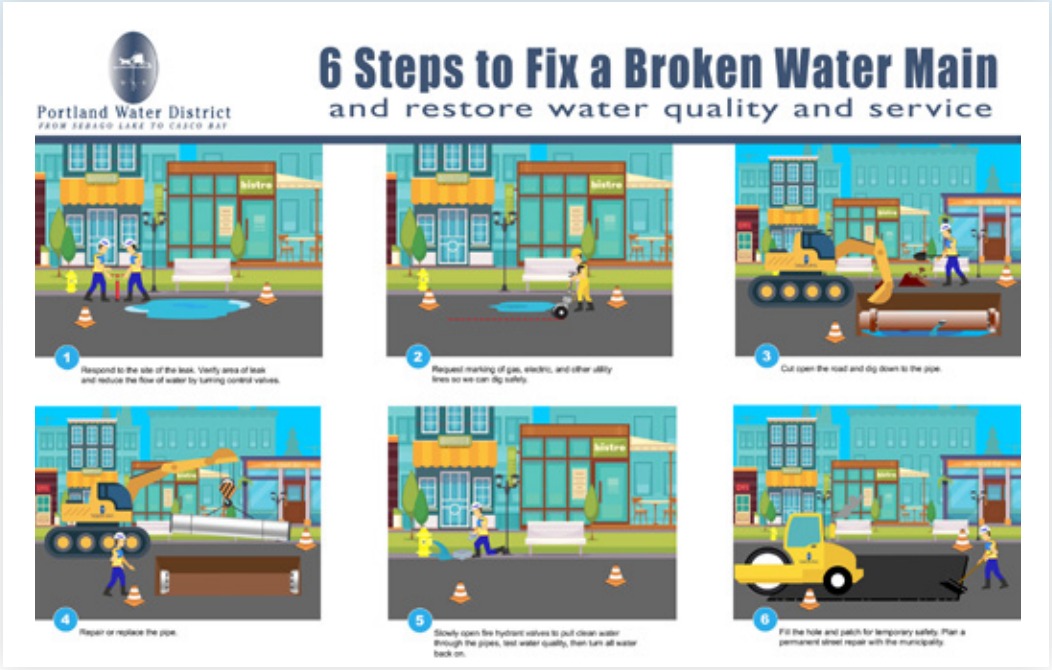
How do we know your water is safe to drink?

The answer to this question is similar to the answer to another question: how do you know your car is safe to drive? It's not one thing – it's many. The system that you rely on to travel safely by car begins with quality craftsmanship by qualified people and organizations, cars (and streets) engineered with safety in mind, rules, driver qualifications and experience, vehicle inspections, and car safety features.

In the same way, there are many elements of the drinking water safety net. These include:

A MAIN Concern

With over 150,000 underground assets, the water distribution system is out of sight, out of mind for those that rely on it for drinking water. But for us, it is a main focus. Over 1,000 miles of water mains, some dating back to the late 1800s, weave under our streets. Underground infrastructure has advantages and disadvantages: while convenient for the community; upgrades, maintenance and repairs are challenging. Replacing damaged and leaking mains is critical to maintaining reliable service and water quality. Last year, we replaced roughly 5 ½ miles of water main.



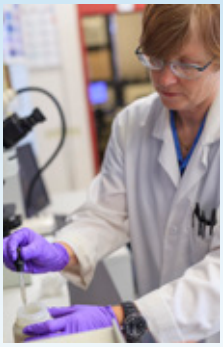
2018 WATER MAIN REPLACEMENT PROJECTS: 29,000 FEET

Portland	Powsland Street, Mitton Street	3,000
	Walnut Street, Sheridan, Washington Ave to Cumberland	3,000
	Greenleaf	200
	Bedford Street, Durham Street, Baxter Blvd	4,000
South Portland	Pleasantdale Neighborhood, Broadway	8,600
	Postal Service Way, Mussey Rd	2,000
Cumberland	Middle Road	2,000
	Tuttle Road	1,100
Windham	River Road	2,100
Westbrook	Maple St. Union St. McKinley Ave	3,000

Water Quality Analysis

Detected Regulated Substances

Substance	Violation	Ideal Goal MCLG	Highest Level Allowed MCL	Amount Detected in 2018 (unless otherwise noted)	Source
Radionuclides					
Alpha emitters (pCi/L) (2015)	**No**	0	15	2.5	Erosion of natural deposits
Inorganic Chemicals					
Barium (mg/L)	**No**	2	2	0.0038	Erosion of natural deposits
Copper (mg/L)[1] 90th Percentile	**No**	1.3	AL = 1.3	0.38	Corrosion of household plumbing systems; erosion of natural deposits
Lead (µg/L)[2] 90th Percentile	**No**	0	AL = 15	4	Corrosion of household plumbing systems
Fluoride (mg/L)	**No**	4	4	Average: 0.66 Range: 0.60 - 0.72	Water additive which promotes strong teeth; erosion of natural deposits
Chloramine (mg/L)	**No**	MRDLG=4	MRDL=4	Average: 2.24 Range: 1.77 - 2.43	A water additive used to control microbes
Turbidity (NTU)	**No**	None	5	Average: 0.22 Range: 0.16 - 0.55	Soil runoff
Organic Compounds					
Total Trihalomethanes, TTHM (µg/L)	**No**	0	80	Average: 1.0 Range: 0.70 - 2.5	By-product of drinking water chlorination
Total Haloacetic Acids, THAA (µg/L)	**No**	0	60	Average: 9.0 Range: 5.3 - 17	By-product of drinking water chlorination



1 In 2017 the maximum value for copper was 0.48 mg/L.
2 in 2017 the maximum value for lead was 10.4 µg/L.

Undetected Contaminant List

The following is a list of chemical contaminants, regulated and non-regulated, that were tested for in 2018 and not detected in the drinking water produced by Sebago Lake Water Treatment Facility.

ALGAL TOXINS: Anatoxin-a; Cylindrospermopsin; Total Microcystins and Nodularins. **INORGANIC CHEMICALS:** Antimony, Arsenic, Asbestos, Beryllium, Bromate, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Cyanide, Nickel, Selenium, Silver, Thallium, Uranium, Nitrate, Nitrite. **MICROBIOLOGICAL:** E. coli bacteria; Total Coliform bacteria. **VOLATILE ORGANIC CHEMICAL:** Benzene; Carbon tetrachloride; Chlorobenzene; 1,2 Dichloropropane; 1,2-Dichlorobenzene; 1,4-Dichlorobenzene; 1,1-Dichloroethylene; 1,2-Dichloroethane; cis-1,2-Dichloroethylene; trans-1,2-Dichloroethylene; Ethylbenzene; Methyl-t-butyl ether (MBTE); Methylene chloride; Styrene; Tetrachloroethylene; Toluene; Trichloroethylene; 1,2,4-Trichlorobenzene; 1,1,1-Trichloroethane; 1,1,2-Trichloroethane; Total xylenes; Vinyl chloride.

Mineral Content and Secondary Standard

Substance	Maine Recommended Limit	Result	Likely Source
Chloride (mg/L)	250	9	Natural mineral, road salt
Color (PCU)	15	< 5	Natural characteristic
Hardness (mg/L as CaCO3)	150	7.0	Natural mineral
Iron (mg/L)	0.3	0.010	Natural mineral
Manganese (mg/L)	0.05	0.0011	Natural mineral
Sodium (mg/L)	100	8.9	Natural mineral, road salt
Sulfate (mg/L)	250	2	Naturally occurring
Magnesium (mg/L)	50	<1	Natural mineral
Calcium (mg/L)	500	2.8	Natural mineral
Zinc (mg/L)	5	0.12	Natural mineral, corrosion control additive

Secondary standards are non-mandatory guidelines to assist public water systems in managing their drinking water for aesthetic conditions such as taste, odor, or staining of laundry. These contaminants are not considered to present a risk to human health. Results listed above from 7/10/18 sampling event.

Definitions

MCL: Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water.

MCLG: 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 Disinfection 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.

LRAA: Locational Running Annual Average. An annual average calculated at each monitoring site.

Variances and Exemptions: State permission not to meet MCL or a treatment technique under certain conditions.

AL = Action Level: The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow. Action Levels for Lead and Copper are measured at the tap of "high risk" homes. Ninety percent of tests must be equal to or below the Action Level.

Turbidity: The measurement of cloudiness or suspended colloidal matter (silt). As you can see from the table, all of the samples taken of our water system were well below 5 ntus.

Units:

ppm = parts per million or milligrams per liter (mg/L). pCi/L = picocuries per liter (a measure of radioactivity).

ppb = parts per billion or micrograms per liter (µg/L). NTU=Nephelometric Turbidity Units.

Notes

1) Total Coliform Bacteria: Reported as the highest monthly number of positive samples, for water systems that take less than 40 samples per month.

2) E. Coli: E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems.

3) Fluoride: For those systems that fluoridate, fluoride levels must be maintained between 0.5 to 1.2 ppm. The optimum level is 0.7 ppm.

4) Lead/Copper: Action levels (AL) are measured at consumer's tap. 90% of the tests must be equal to or below the action level.

5) Gross Alpha: Action level over 5 pCi/L requires testing for Radium 226 and 228. Action level over 15 pCi/L requires testing for Uranium. Compliance is based on Gross Alpha results minus Uranium results = Net Gross Alpha.

6) TTHM/HAA5: Total Trihalomethanes and Haloacetic Acids (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. Compliance is based on running annual average.

About the Regulations

The federal Safe Drinking Water Act directs the state, along with the EPA, to establish and enforce drinking water standards. The standards set limits on certain biological, radioactive, organic and inorganic substances sometimes found in drinking water. Two types of standards have been established. Primary drinking water standards set achievable levels of drinking water quality to protect your health. Secondary drinking water standards provide guidelines regarding the taste, odor, color, and other aesthetic aspects of your drinking water, which do not present a health risk.

Health Notice

Drinking water, including bottled water, may reasonably be expected to contain impurities or contaminants. However, these contaminants do not necessarily indicate that water poses a health risk and may include microbial, inorganic, or organic substances.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised people such as individuals with cancer undergoing chemotherapy, people 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. Guidelines, jointly developed by the EPA and the CDC, on the appropriate means to lessen the risk of infection by Cryptosporidium, are available from the Safe Drinking Water Hotline or web site.

More Information

The Portland Water District Board of Trustees generally meet on the second and fourth Monday of every month. Meetings are also live streamed and available On Demand: www.pwd.org/trustee-meetings. The public is welcome to attend meetings.

207.761.8310

(Monday through Friday between 8:00 a.m. and 4:30 p.m.)
225 Douglass Street | PO Box 3553 | Portland, Maine 04102
www.pwd.org | Customerservice@pwd.org

Environmental Protection Agency
800.426.4791 | www.epa.gov/safewater/

American Water Works Association
303.794.7711 | www.awwa.org

National Centers for Disease Control
404.639.3311 | www.cdc.gov

Maine Drinking Water Program
207.287.2070 | www.maine.gov

Portland Water District

Steep Falls, Standish
Supplemental Information

Steep Falls water system is separate from the Greater Portland water system. See below for components of the Water Quality Report that apply to the Steep Falls system only.

Your Source of Water and Ensuring Water Quality

The Steep Falls well system (Standish) supplies approximately 300 people. Treatment includes liquid sodium hypochlorite addition for disinfection, sodium hydroxide addition for pH adjustment and corrosion control, aeration for radon removal, and fluoridation (sodium fluoride).

The state Drinking Water Program waived the requirement to sample for pesticide, herbicide, carbamate and PCB in the Steep Falls water system through 2019. The waiver was granted based on past water test results and the land uses in the proximity of the wells. Other testing for inorganic and volatile organic compounds continues at the required frequency.

Detected Regulated Substances

Substance	MCLG Ideal Goal	MCL Highest Level Allowed	Amount Detected in 2018 (unless otherwise noted)	Violation	Source
Radionuclides					
Alpha emitters (pCi/L) 2015	0	15	5.0	**No**	Erosion of natural deposits
Radium, Combined (pCi/L) 2015	0	5	0.7	**No**	Erosion of natural deposits
Radium-226 (pCi/L) 2015	0	5	0.7	**No**	Erosion of natural deposits
Radium-228 (pCi/L) 2015	0	5	0.6	**No**	Erosion of natural deposits
Radon (pCi/L)	4000	4000	2150	**No**	Erosion of natural deposits
Uranium (µg/L) 2017	0	30	3.5	**No**	Erosion of natural deposits
Organic Compounds					
Total Trihalomethanes (µg/L) 2016	0	80	5.7	**No**	By-product of chlorination
Inorganic Chemicals					
Barium (mg/L) 2017	2	2	0.007	**No**	Erosion of natural deposits; discharge of drilling waste and metal refineries
Copper (mg/L) [1]	AL=1.3	AL=1.3	0.072	**No**	Corrosion of household plumbing systems
Chlorine (mg/L)	MRDL=4	MRDL=4	Average 1.21 Range 0.92 - 1.68	**No**	A water additive used to control microbes
Fluoride (mg/L)	4	4	Average 0.69 Range 0.63 - 0.75	**No**	Water additive which promotes strong teeth Erosion of natural deposits
Nitrate - Nitrogen (mg/L)	10	10	1.0	**No**	Fertilizer runoff; leaching septic tanks; erosion of natural deposits

[1]In 2018 the maximum value for copper was 0.096mg/L. Please refer to page 7 of the booklet for definitions

Notes:

Radon: The State of Maine adopted a Maximum Exposure Guideline (MEG) for Radon in drinking water at 4000 pCi/L effective 1/1/07 If Radon exceeds the MEG in water, treatment is recommended. It is also advisable to test indoor air for Radon. Radon at a level of 2150 pCi/L was detected in Steep Falls' well water after aeration treatment. Radon is found in the soil and bedrock formations and is a water soluble, gaseous by-product of uranium. Most radon is released to the air moments after turning on the tap. Only about 1-2 percent of radon in the air comes from drinking water. Inhalation of radon increases the risk of lung cancer over the course of your lifetime.

Nitrate: 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 provider.

If you'd like more information about radon, please contact us or the State Drinking Water Program and request a radon fact sheet.

Undetected Contaminant List

The following is a list of chemical contaminants, regulated and non-regulated, that were tested for in 2017 and were **not detected** in the drinking water produced by Steep Falls Treatment Facility.

INORGANIC CHEMICALS: Antimony, Arsenic, Asbestos, Beryllium, Cadmium, Chromium, Cyanide, Iron, Manganese, Mercury, Nickel, Selenium, Silver, Thallium. **MICROBIOLOGICAL:** Total coliform bacteria, E. coli bacteria **SYNTHETIC ORGANIC CHEMICALS:** Alachlor; Aldicarb; Aldicarb sulfone; Aldicarb sulfoxide; Atrazine; Benzo(a)pyrene; Carbaryl; Carbofuran; Chlordane, 2,4-D; bis (2-ethylhexyl)adipate; bis(2-ethylhexyl)phthalate; Dinoseb; Endrin: Heptachlor; Heptachlor epoxide; Hexachlorobenzene; Hexachlorocyclopentadiene; 3-Hydroxycarbofuran; Lindane; Methoxychlor; Methomyl; Oxamyl (Vydate); Pentachlorophenol; Picloram; Propoxur; 2,4,5-TP(Silvex); Simazine; Toxaphene.**VOLATILE ORGANIC CHEMICALS:** Benzene; Carbon tetrachloride; Chlorobenzene; 1,2 Dichloropropane; 1,2-Dichlorobenzene; 1,4-Dichlorobenzene; 1,1-Dichloroethene; 1,2-Dichloroethane; Dinoseb; Ethylbenzene; Methyl-t-butyl ether (MBTE); Methylene chloride; Pentachlorophenol; Styrene; Tetrachloroethene; Toluene; Toxaphene; Trichloroethene; 1,2,4-Trichlorobenzene; 1,1,1-Trichloroethane; 1,1,2-Trichloroethane; Vinyl chloride; Xylene.