



City of East Providence

Department of Public Works

Water Utilities Division

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WATER QUALITY REPORT 2017

Portuguese IMPORTANTE! O relatório contém informações importantes sobre a qualidade da água da comunidade. Traduza-o ou peça ajuda de uma pessoa amiga para ajudá-lo a entender melhor ou um tradutor será fornecido.

Where Does Our Water Come From? Your water comes from a series of surface water reservoirs located in the northwest portion of Rhode Island. The main source of supply is the Scituate Reservoir, which when at full capacity, contains over 37 billion gallons of water and covers a surface area of 3,390 acres. In addition to the Scituate Reservoir, there are five secondary reservoirs: Regulation Reservoir, Moswansicut Reservoir, Ponaganset Reservoir, Barden Reservoir, and Westconaug Reservoir. These five additional reservoirs combined add another four (4) billion gallons of water for a total water storage capacity of 41 billion gallons! The entire reservoir system is contained within a watershed area which totals 92.8 square miles of primarily rural, forested land. Providence Water controls over 28% of the most critical areas of the watershed through outright ownership or through the purchase of the development rights.

In 2003, the Rhode Island Department of Health, in cooperation with other state and federal agencies, assessed the contamination threats to the Scituate Reservoir. The assessment considered the intensity of development; the presence of businesses and facilities that use, store, or generate potential contaminants; how easily contaminants may move through the soils in the Source Water Protection Area (SWPA); and the sampling history of the water.

This assessment found that the Scituate Reservoir has a low risk of contamination. This does not mean that the water cannot become contaminated. Protection efforts are necessary to ensure continued water quality. A summary of the Source Water Assessment is available from the Providence Water Supply Board, the Rhode Island Department of Health, or on the PWSB website at www.provwater.com. A copy of the full report may be obtained from the Rhode Island Water Quality program at www.uri.edu/ce/wq/program/html/SWAP/reports.html.

How is our water quality measured? State and federal regulations require all water suppliers to test for microbes and chemicals a specified number of times each year. The test for microbes is done most frequently, based on the size of the population served by the water supplier. The regulations require that these water quality tests be conducted in certified laboratories using federally approved testing methods. Last year the City of East Providence tested over 2290 samples in compliance with the state and federal regulations. The PWSB also conducts extensive testing before, during, and after the water treatment process. The results of those tests are detailed in this report.

Lead Informational Statement 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. The East Providence Water Utilities Division is 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 <http://www.epa.gov/safewater/lead>.

Unregulated Contaminant Sodium is an unregulated contaminant. The PWSB sampled for sodium in 2017 and detected a level of 13.9 mg/l. The major sources of sodium found in water supplies are from erosion of natural deposits and runoff from road de-icing operations.

Capital Improvements Over the past three years, the Water Utilities Division has completed over \$21 million in capital improvements. These include construction of a new 6-million gallon storage tank, construction of a new transmission line, chemical feed building, rehabilitating old pipes, and painting and repairs to the Kent Heights elevated storage tank.

The City is currently working on installing an aeration system at approximately \$1.65 million to reduce disinfection by-products in the water system. Also planned in the near future are an inspection of the main transmission line from the Providence Water Supply Board, \$13 million in rehabilitating old pipelines, and securing a second source of water supply for emergency use.

Water Main Flushing The Water Utilities Division will resume flushing water mains in neighborhoods in September 2018. 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, disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, you may notice some short-term increases in the color and iron level in your cold water. Although harmless to health, you should avoid using your tap water for household purposes during this period as it may cause minor staining of fixtures and laundry. 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.

Violations There was a violation of the disinfection by-products rule in November 2017. *Many water systems treat water with a chemical disinfectant, such as chlorine, in order to inactivate pathogens that cause disease. While disinfectants are effective in controlling many harmful microorganisms, they react with organic and inorganic matter in the water to form trihalomethanes, some of which pose health risks at certain levels. Trihalomethanes are a group of volatile organic compounds (Chloroform, Bromoform, Bromodichloromethane, Dibromochloromethane) which form with time when the natural organics in water react with chlorine as it breaks down. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer. The public health benefits of chlorine disinfection practices are significant and well recognized. Consequently, one of the most complex questions facing water supply professionals is how to reduce risks from disinfectants and trihalomethanes while providing increased protection against microbial contaminants. There was a trihalomethane violation for the fourth quarter in 2017. The LRAA (locational running annual average) for the fourth quarter in 2017 was 81.5 and the MCL is 80.

?? Questions ?? For additional information please contact: Stephen H. Coutu, P.E. Director, Department of Public Works (401) 435-7701; scoutu@cityofeastprov.com

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Rhode Island Department of Health, Drinking Water Quality (401) 222-6867; www.health.ri.gov

Information on the Internet The U.S. EPA Office of Water (www.epa.gov) and the Centers for Disease Control and Prevention (www.cdc.gov) websites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. Also, the Providence Water Supply Board has a website (www.provwater.com) that provides complete and current information on our drinking water

The Department of Public Works has prepared and provided to you this annual water quality report in accordance with the requirements of the Safe Drinking Water Act (SDWA). The report includes information on the city's source of water and quality of the water and the water distribution system.

This table shows the results of the 2017 water quality analysis performed by the City (EP) and the Providence Water Supply Board (PWSB). We feel it is important that you know exactly what was detected and how much was detected and how much of the substance was present in the water. Every regulated contaminant that we detected in the water, even in the most minute traces, is listed here along with the highest levels allowed by regulation (MCL), the ideal goals for public health (MCLG), the amounts detected, the usual sources of such contamination, footnotes explaining our findings and a key to units of measurement

Key to Table

AL = Action Level

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

MFL = Million Fibers per Liter

NTU = Nephelometric Turbidity Units

MRDL = Maximum Residual Disinfectant Level

MRDLG = Maximum Residual Disinfectant Level Goal

pCi/L = Picocuries per Liter (a measure of radioactivity)

ppm = Parts per million or milligrams per liter (mg/l)

ppb = Parts per billion or micrograms per liter (ug/l)

TT = Treatment Technique

ND = None Detected

NA = Not Applicable

Definitions

Maximum Contaminant Level or MCL: 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.

Maximum Contaminant Level Goal or MCLG: 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.

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

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

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

Parts per Billion (ppb): One part per billion (microgram per liter) is the equivalent to one penny in \$10,000,000.00.

Parts per Million (ppm): One part per million (milligram per liter) is the equivalent to one penny in \$10,000.00.

Picocuries per Liter (pCi/L): A measurement of natural rate of disintegration.

The data presented in this report is from the most recent testing done in accordance with regulations.

**DETECTED CONTAMINANTS TABLE
2017**

Contaminant	Year	Unit	MCL	MCLG	Amount Detected	Range Low-High	Violation	Typical Source
REGULATED SUBSTANCES								
Substance (unit of measure)								
Barium	2017	ppm	2	2	0.01	NA	NO	Erosion of natural deposits.
Chlorine ^⑤	2017	ppm	MRDL=4.0	MRDLG=4.0	0.82	0.2-0.8	NO	Water additive to control microbes.
Di(2-ethylhexyl)phthalate	2017	ppb	6	0	1	0-1.0	NO	Discharge from rubber and chemical factories.
Fluoride	2017	ppm	4	4	0.86	0.45-0.86	NO	Water additive for whitening teeth.
Haloacetic Acids (HAA5) ^⑤	2017	ppb	60	NA	25	15.2-19.5	NO	By-product of drinking water chlorination.
*Total Trihalomethanes (TTHM) ^⑤	2017	ppb	80	NA	81.5	51.4-81.5	YES	By-product of drinking water chlorination.
Total Coliform ^② (% positive samples)	2017	----	TT	NA	<1	NA		Naturally present in the environment.
Total Organic Carbon ^④ (removal ratio)	2017	----	TT	NA	1.62	1.54-1.78	NO	Naturally present in the environment.
Turbidity ^③	2017	NTU	TT	NA	0.22	0.02-0.22	NO	Soil runoff.
Turbidity(lowest monthly percent of samples meeting limit)	2017	----	TT	NA	100	NA	NO	Soil runoff.
LEAD and COPPER								
Substance (unit of measure)								
	Year	Unit	Action Level	MCLG	Amount 90 th Percentile	Samples Above Action Level	Violation	Typical Source
Copper ^①	2017	ppm	1.3	1.3	0.019	0/31	NO	Corrosion of household plumbing; erosion of natural deposits.
Lead ^①	2017	ppb	15	0	1	0/31	NO	Corrosion of household plumbing; erosion of natural deposits.
UNREGULATED SUBSTANCES								
Sodium	2017	ppm	NA	NA	13.9	NA	NO	Runoff from road deicing; erosion of natural deposits.

① Sampling conducted in accordance with the lead/copper rule of the SDWA. The above data represents the most recent results. No samples were above the action level for copper, and none were above the action level for lead in 2017.

② This value refers to the highest monthly percentage of positive samples detected during the year. In 2017 East Providence Water collected over 2290 samples for the total coliform rule compliance monitoring. Zero samples collected were coliform positive.

③ 0.22 NTU was the highest single turbidity measurement recorded. The lowest monthly percentage of samples meeting the turbidity limit was 100%. The average turbidity value for 2017 was <0.10 NTU.

④ In order to comply with the EPA standard, the removal ratio must be greater than 1. Detected level is the lowest ratio per quarter. Range is the lowest and highest ratios per month.

⑤ Compliance is based upon the highest locational running annual average (LRAA), and the range is based upon the lowest and highest individual measurement.

**2017 PROVIDENCE WATER QUALITY CONTAMINANT CHART FURNISHED BY THE PROVIDENCE WATER SUPPLY BOARD
CONTAMINANTS SPECIFIC TO THE CITY OF EAST PROVIDENCE ARE IN THE PRIOR TABLE**

Contaminant	Period	Unit	MCL	MCLG	Detected Level	Range	SDWA Violation	Major Sources
REGULATED SUBSTANCES								
Barium	2017	ppm	2	2	0.01	NA	NO	Erosion of natural deposits.
Chlorine(as Cl ₂), Free Residual	2017	ppm	MRDL=4.0	MRDLG=4.0	0.46	0.00-1.06	NO	Water additive used to control microbes.
Fluoride	2017	ppm	4	4	0.86	0.45-0.86	NO	Water additive which promotes strong teeth.
Haloacetic Acids (HAA5) ^③	2017	ppb	60	0	19.2	10.9-26.9	NO	By-product of drinking water chlorination.
Total Organic Carbon (TOC) ^① (removal ratio)	2017	NA	TT	NA	1.62	1.54-1.78	NO	Naturally present in the environment.
Total Trihalomethanes (TTHM) ^③	2017	ppb	80	0	71.3	23.0-82.0	NO	By-product of drinking water chlorination.
Turbidity ^②	2017	NTU	TT	NA	0.22	0.02-0.22	NO	Soil runoff.
Total Coliform Bacteria ^④ (% positive samples)	2017	per month	Presence of coliform bacteria in >5% of monthly samples	0%	0.6	NA		Naturally present in the environment.
Di(2-ethylhexyl)phthalate ^⑤	2017	ppb	6	0	1.0	0-1.0	NO	Discharge from rubber and chemical factories.
LEAD and COPPER								
			Action Level					
Copper	2017	ppm	1.3	1.3	0.015	NA	NO	Corrosion of household plumbing systems. Erosion of natural deposits. 0 sites out 319 were above 1.3 ppm.
Lead	2017	ppb	15	0	17.0	NA	YES	Corrosion of household plumbing systems. Erosion of natural deposits. 38 sites out of 348 were above 15 ppb.
UNREGULATED SUBSTANCES								
Sodium	2017	ppm	NA	NA	13.9	NA	NO	Runoff from road deicing; erosion of natural deposits.

Water Quality Table Footnotes:

- ① In order to comply with the EPA standard, the removal ratio must be greater than 1. Detected level is the lowest removal ratio per quarter. Ranger is the lowest and highest removal ratios per month.
- ② 0.22 NTU was the highest single turbidity measurement recorded. The lowest monthly percentage of samples meeting the turbidity limit was 99.99%. The average turbidity value for 2017 was <0.10 NTU.
- ③ Compliance is based upon the highest quarterly LRAA, and range is based upon the lowest and highest individual measurement.
- ④ This value refers to the highest monthly percentage of positive samples detected during the year. For 2017 Providence Water collected 2155 samples for the Total Coliform Rule compliance monitoring. One of these samples were positive for total coliform bacteria. None were positive for E.Coli.
- ⑤ DEHP was detected in a single sample of source water. All subsequent test results for this compound sampled in 2017 were negative.

NA = Not Applicable
TT = Treatment Technique

Additional Health Information

To ensure that tap water is safe to drink, EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. FDA regulations established limits for contaminants in bottled 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. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline 1-800-426-4791 or the EPA website www.epa.gov.

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 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 storm 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, storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and also can come from gas stations, urban storm water 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 the tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems.

SPECIAL HEALTH INFORMATION

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 healthcare providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the following:

Safe Drinking Water Hotline: 1-800-426-4791 or EPA website at www.epa.gov.

Source Water Assessment

A Source Water Assessment was conducted in 2017 by the Providence Water Supply Board (PWSB). The assessment confirmed that the Scituate Reservoir system is at medium risk of contamination. Providence Water is continuing with protection efforts necessary to ensure continued water quality. The draft 2017 Source Water Assessment report is available on the Providence Water website at <http://www.provwater.com/swap>.

Information on Cryptosporidium, Radon and other Contaminants

As part of the Enhanced Surface Water Treatment Rule LT2, Providence Water began a second round of 24 consecutive months of *Cryptosporidium* monitoring in April 2015. To date, *Cryptosporidium* has not been detected in any samples. Radon was not monitored.

Variations and Exceptions

There were no variations or exemptions granted to East Providence Water or the PWSB by the State in 2017.