



2019

Drinking Water Quality Report



Published in 2020

This report is produced for you as a requirement of the Federal Safe Drinking Water Act.

NOTE: Industrial and commercial customers, including hospitals, medical centers and health clinics, please forward this report to your Environmental Compliance Manager.

PWD's Public Water System Identification #PA1510001

Your tap
is locally
sourced.



*Water from our
rivers is treated
to the highest
standards.*



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Photography on cover and opening spreads: Calo Lopez Rosa & JPG Photo & Video



Water is taken in from the Delaware River as it begins its treatment process.

A Message from the Commissioner

It is my pleasure to present our 2019 Water Quality Report, which demonstrates Philadelphia's superior water quality, brought to you by the hard work and dedication of more than 2,000 employees.

This report, published in the spring of 2020, includes water quality information. You will also find information about a variety of programs and initiatives ensuring safe and reliable water service for the citizens of Philadelphia.

We work with the Philadelphia Department of Public Health and participate in national research to take advantage of the best science and public health resources available.

Every year brings challenges and successes, and 2019 demonstrates the Philadelphia Water Department is a strong organization. We are dedicated to protecting our rivers and treating our water to the highest standards so that we can provide your families, and ours, with safe and refreshing tap around the clock.

We hope you take the time to review the wealth of information in this report.

If you'd like to volunteer and help keep our waterways clean, please follow **@PhillyH2O** on social media, call our 24-hour hotline at (215) 685-6300, or visit **www.phila.gov/water**. You can also sign up for email and text alerts at **phillyh2o.info/signup**.



Sincerely,

A handwritten signature in black ink, appearing to read "Randy E. Hayman". The signature is fluid and cursive.

Randy E. Hayman, Esq.
Water Commissioner

Sharing This Report

Please share this report with all people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand and mail.

To receive a printed copy of this report, please email: waterquality@phila.gov.

People With Special Health Concerns

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 and 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.

U.S. Environmental Protection Agency (EPA)/Centers for Disease Control (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: (800) 426-4791.

The Philadelphia Water Department is an active member of:

American Water Resources Association

American Water Works Association

Partnership for Safe Water

American Public Works Association

Association of Metropolitan Water Agencies

National Association of Clean Water Agencies

Partnership for the Delaware Estuary

Schuylkill Action Network

Schuylkill River Restoration Fund

Tookany/Tacony-Frankford (TTF) Watershed Partnership

U.S. Water Alliance

Water Environment Federation

Water Environment Research Foundation

Water Research Foundation

Where Does Philadelphia's Drinking Water Come From?

Philadelphia's water comes from the Schuylkill and Delaware rivers.

Each river contributes one-half of the City's overall supply and approximately 230 million gallons of high-quality drinking water is produced for our customers on a daily basis.

Rivers are surface water supplies. Philadelphia does not use groundwater.

The Philadelphia Water Department (PWD) has three water treatment plants that process untreated river water. Depending on where you live, you receive drinking water from one of these three plants:

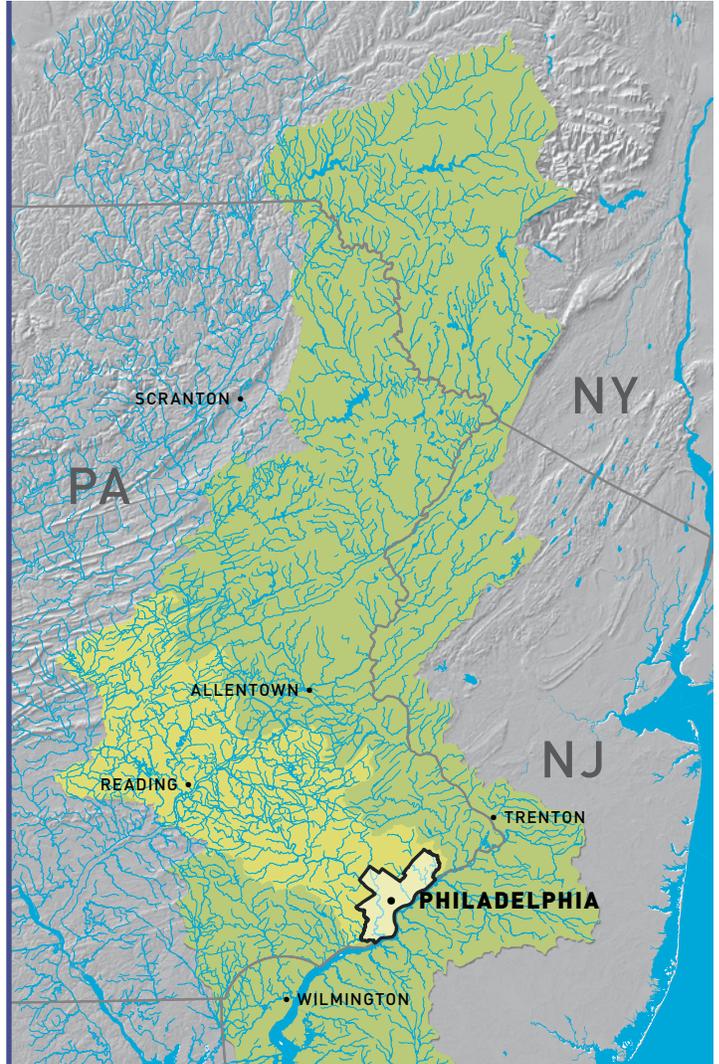
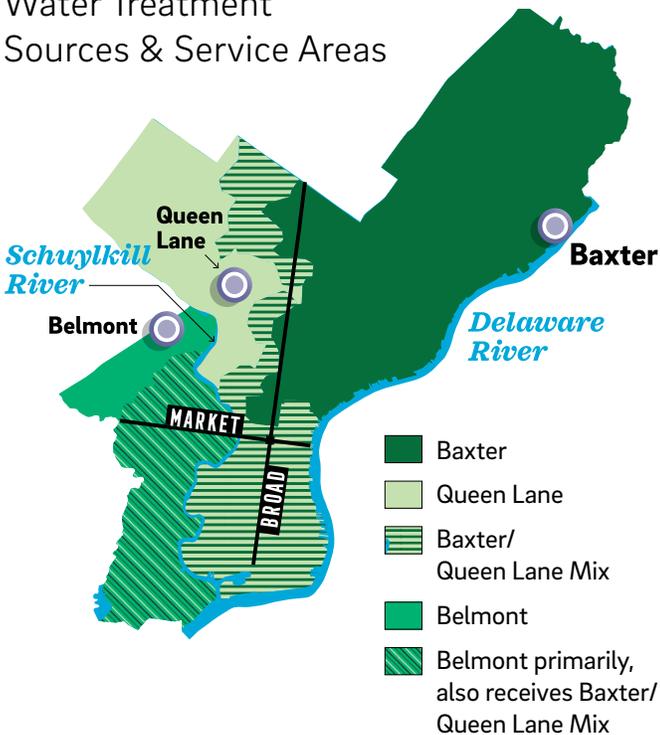
The Baxter Plant is located in Torresdale and its water comes from the Delaware River.

The Queen Lane Plant is located in East Falls and its water comes from the Schuylkill River.

The Belmont Plant is located in Wynnefield and its water also comes from the Schuylkill River.

PWD has three water intakes: two located on the Schuylkill River and one on the Delaware River.

Water Treatment Sources & Service Areas



Philadelphia Source Watersheds

- Delaware River Watershed
- Schuylkill River Watershed

Philadelphia is located in the Delaware River Watershed, which begins in New York State and extends 330 miles south to the mouth of the Delaware Bay. The Schuylkill River is part of the Delaware River Watershed.

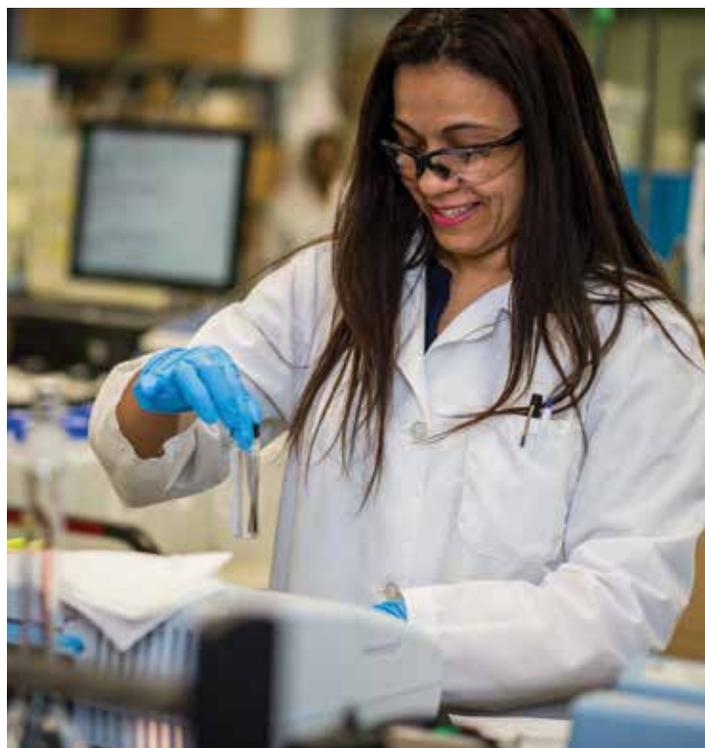
Safeguarding the Water You Drink

How Do Drinking Water Sources Become Polluted?

Across the nation, rivers, lakes, streams, ponds, reservoirs, springs and wells are sources of drinking water (both tap water and bottled water). Rain and melting snow travels over the surface of the land or through the ground, dissolving naturally occurring minerals and picking up substances resulting from animal and human activity and carrying these pollutants to our drinking water sources.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals can be naturally occurring or come from urban stormwater runoff (streets and parking lots), industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, are byproducts of industrial processes and petroleum production. They can also come from gas stations, urban stormwater runoff and septic systems.
- Radioactive contaminants can be naturally occurring or can come from oil and gas production, mining activities or medical use.



Our scientists work around the clock to ensure our drinking water is top-quality.

At their sources, the Delaware and Schuylkill Rivers are generally clean. But as the rivers flow downstream, they pick up contaminants from many sources — stormwater runoff washes pollutants on the land into the rivers, and communities and industries discharge used water back into the rivers. Today, Philadelphia enjoys watersheds that are cleaner and healthier than they have been in well over a century. Although we have seen a dramatic improvement in the water quality of the City's two major rivers since the passage of the Federal

Clean Water Act in the early 1970s, there is still more work that needs to be done to protect our drinking water sources from pollution.

In order to ensure that tap water is safe to drink, the EPA has regulations that limit the amount of certain contaminants in water provided by water suppliers. The Food and Drug Administration establishes 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 EPA's Safe Drinking Water Hotline, (800) 426-4791, or from their website: www.epa.gov/safewater.

Lead in a property's plumbing

The drinking water delivered to your home meets all state and federal water quality standards.

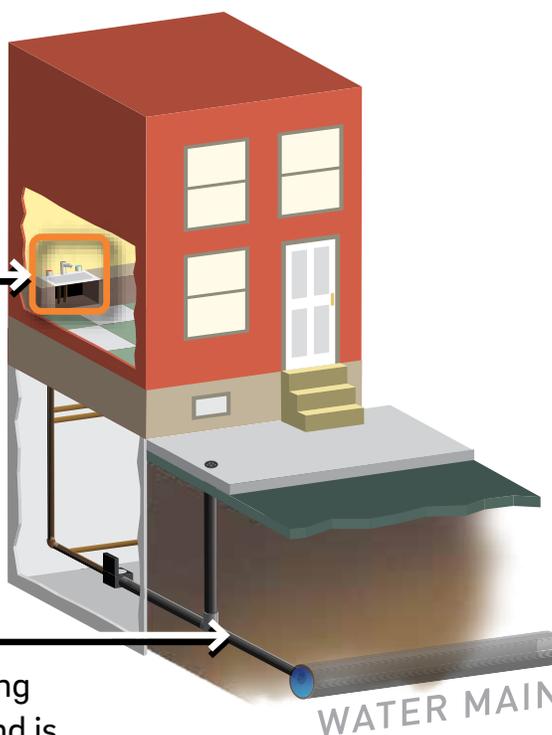
WHERE LEAD CAN GET INTO WATER

Older Fixtures & Valves:

Lead can be found in older brass fixtures and valves and in old solder, where pipes are joined.

Service Line:

This pipe connects home plumbing to the water main in the street and is the responsibility of the homeowner.



Our water mains are *not* made of lead.

However, some homes built before 1950 may have service lines made from lead.

While lead was once a common building material, today we know lead is harmful to everyone.

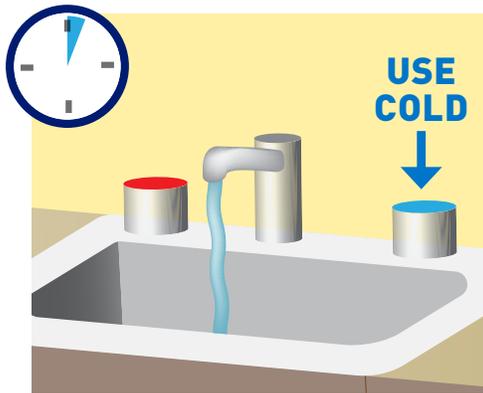
Pregnant women, infants, children under the age of six and adults with high blood pressure and kidney problems are at the most risk.

3 TIPS FOR EVERYONE

Whether you have lead pipes or not, all households should follow the tips below.

1 Daily Pipe Flushing

If you have not used your water for a few hours, turn on the cold water faucet at the sink that you drink from, and let the water run for three to five minutes.



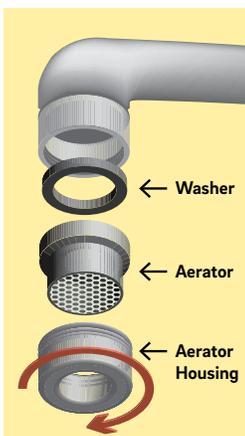
Why Flush? It's good to avoid drinking water that has been sitting in your home's pipes for several hours.

2 Always Use Cold!

Never drink hot water from the tap, or use that water for cooking. Water heaters aren't made for drinking water.

3 Check Your Aerators

Clean aerators (also called screens) yearly to remove debris from any taps used for drinking water.

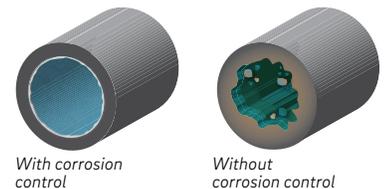


How We Manage Lead

We continuously monitor drinking water to make sure our treatment helps to keep lead out of water in buildings with lead plumbing. As a part of our testing efforts, we ask Philadelphia households with lead water pipes to participate in our free tap water sampling program.

Every three years, PWD samples at least 50 homes with lead plumbing and tests the water for lead levels. These samples are a required part of the EPA's Lead and Copper Rule, which was created in 1992 to make sure that our corrosion control treatment is working.

Philadelphia has a corrosion control program mandated by federal law and optimized over the past two decades. It minimizes the release of lead from service lines, indoor pipes, fixtures, and solder by creating a coating designed to keep lead from leaching into the water.



To date, sampling results show that our treatment is controlling corrosion in our customers' plumbing.

Lead Testing

The Philadelphia Water Department conducted a regulatory lead testing program from June through September 2019. Results from the 2019 round of testing show Philadelphia is in compliance with the federal Lead and Copper Rule and can be found in the table on page 17. The next round of regulatory sampling will take place in 2022.

Concerned About Lead In Your Pipes?

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 on PWD's website at www.phila.gov/lead.

US EPA Guidance

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 material and components associated with service lines and home plumbing. The Philadelphia Water Department is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. If you haven't turned on your tap for several hours, you can minimize the potential for lead exposure by flushing your tap before using water for drinking and 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 [(800) 426- 4791] or at: www.epa.gov/safewater/lead.

Lead (Continued)

PWD continues to educate customers about lead in drinking water. Programs introduced in 2016 have helped customers replace lead service lines:



Service line replacement during water main replacement work

When the Philadelphia Water Department replaces a water main, we will also replace any lead service line from the main all the way to the customer's meter. This will be done at no cost to the customer, but permission is needed to complete this valuable service.

All customers on blocks where water main replacement is scheduled will receive a letter approximately six months before construction work begins. In addition to alerting customers about construction, this letter lets them know their service line will be inspected for lead. To date, 1,258 customers have had lead service lines replaced through this program.

If you think water main work is being done on your street and you did not get any notification about service lines or flushing, please call our Customer Contact Center at (215) 685-6300.



Let's learn about lead: Community Organization Presentations

The Philadelphia Water Department offers a 30-minute presentation about our programs and lead safety for Registered Community Organizations and civic associations. Our goal is to empower customers to address any issues with lead plumbing in their homes.

Educational materials, such as fact sheets and instructions for maintaining home plumbing, can be translated into a variety of languages to meet the needs of community members.

Since this program began, 75 Registered Community Organizations (RCOs) have participated in PWD's lead presentations. To schedule a presentation, interested organizations can call us at (215) 685-6300 or email: waterinfo@phila.gov.

Updated website: phila.gov/water/lead

Our website provides information about all Philadelphia Water Department efforts to assist and educate customers about lead in drinking water. You will find:

1. Options for getting water tested
2. How to check for lead pipes
3. Daily flushing tips to ensure fresh water
4. Tips on maintaining household plumbing
5. The most recent lead sampling results



HELP Loan for Lead Service Line Replacement

In the City of Philadelphia, water service lines are the responsibility of the homeowner. If you have a water service line made of lead and want to replace it, you may qualify for the Homeowner's Emergency Loan Program (HELP). HELP is a zero-interest loan for replacement of a lead service line, payable over a sixty-month (60) period.

To date, 266 Philadelphia residents have replaced their lead service lines with a HELP loan.

HELP Loan Eligibility Guidelines:

- The property must be a residential dwelling and cannot have any more than four units.
- The applicant cannot be delinquent on their monthly water bill(s) for more than two (2) billing cycles. If there is an arrearage, the payment agreement with the Water Revenue Bureau must be current for at least six (6) months.
- The property must have an operable water meter.

Partnership For Safe Water



The Philadelphia Water Department (PWD) consistently produces high quality drinking water, achieving Partnership for Safe Water quality standards that are far stricter than state and federal water quality regulatory requirements.

The Philadelphia Water Department voluntarily adopted the stricter water treatment quality goals, as a member of the Partnership for Safe Water in 1996. The average turbidity level (measure of water clarity) of Philadelphia's drinking water has been at or below 0.06 nephelometric turbidity units (NTU) since 1998.

The average turbidity of Philadelphia's drinking water in 2019 was 85 percent lower than the maximum level of 0.30 NTU allowed by state and federal regulations and was 56 percent less than the Partnership for Safe Water maximum turbidity goal of 0.10 NTU.

In 2018, the Baxter, Queen Lane and Belmont Water Treatment Plants were honored by EPA and PADEP with the Partnership for Safe Water 20-Year Director's Award in recognition of the Philadelphia Water Department's decades long commitment to achieving and maintaining the highest possible drinking water quality.

The Water Department extended its participation in the Partnership for Safe Water initiative by becoming a charter member in the new Distribution System Optimization Program in 2015. This self-assessment initiative extends our focus from the treatment process to ensuring delivery of high-quality water by maintaining distribution system integrity.

The Partnership for Safe Water is a voluntary optimization program conceived and initiated by the EPA, the American Water Works Association, the Association of Metropolitan Water Agencies and advocated by the Pennsylvania Department of Environmental Protection. Pennsylvania leads the nation in participation in this program and the Philadelphia Water Department is one of Pennsylvania's leaders.

CHLORINE 101



Why is chlorine used to disinfect the drinking water?

State and federal laws require the disinfection of all public water supplies. EPA and health agencies recognize that using chlorine is one of the most effective ways to protect public health from disease-causing organisms that can be found in rivers and streams. However, chlorine can chemically react with natural materials in rivers to form disinfection by products, such as trihalomethanes and haloacetic acids. We have been adjusting our treatment process over the years to reduce this chemical reaction, but we also ensure that the treated water that is distributed through the City's water mains to your homes has a "chlorine residual." This residual continues to protect your water against bacteria and other organisms on its journey to your home's tap. We use sodium hypochlorite, a safer form of chlorine similar to household bleach, to disinfect the water at our treatment plants.

Pharmaceuticals and Source Water

Pharmaceuticals get into drinking water because people use both prescription and over-the-counter medications. Only a portion of these substances is absorbed into the bloodstream. The rest is excreted by the body, making its way through wastewater treatment plants and back into the waterways that serve as our drinking water sources. Pharmaceuticals can also enter the waterways through the practice of improper disposal methods, such as flushing unused or expired medications down the toilet.

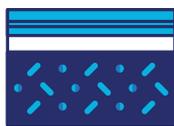
Everyone can help keep unused pharmaceuticals out of the water supply by paying attention to how to dispose of unused medications. The Drug Enforcement Agency (DEA) sponsors national take-back programs in coordination with State and local law enforcement agencies. To find out about future take-back events, visit DEA's website at www.deadiversion.usdoj.gov/drug_disposal/takeback/.

How To Properly Dispose of Your Medications At Home!



1. Protect Your Info

Peel off the label, or cross out all your personal information with a marker.



2. Seal the Meds

Put the pills or liquids in another container, then cover with items like coffee grounds or kitty litter.



3. Trash It!

Toss sealed meds in your household trash.

Learn more: www.vimeo.com/78005190

Cryptosporidium and Giardia

Cryptosporidium and Giardia are microscopic organisms found in rivers and lakes throughout the United States.

If ingested, *Cryptosporidium* and *Giardia* can cause diarrhea and abdominal cramps. However, these are also symptoms of intestinal diseases caused by many bacteria, viruses and parasites.

Most healthy individuals can overcome such illnesses within a few weeks; however, immuno-compromised individuals are at a greater risk of developing a life-threatening illness and are encouraged to consult with their doctors about taking appropriate precautions to avoid infections.

PWD carefully monitors water treatment processes and works closely with the Philadelphia Department of Public Health to ensure that our tap water is free of pathogens. The Department of Public Health monitors confirmed reports of illnesses consistent with these pathogens and would contact PWD if there were any concerns that the drinking water may be contributing to illnesses.

The Philadelphia Water Department maintains an active source water protection program, is one of the nation's leaders in *Cryptosporidium* research; and was one of the first utilities in the U.S. to monitor for the parasite. We continue to fund local university research into *Cryptosporidium* in the environment, a study we have led for more than a decade. By better understanding the occurrence of *Cryptosporidium* in our watershed, PWD is taking a proactive approach to improving our rivers' water quality. We last monitored for *Cryptosporidium* in 2016–2017.

Schuylkill & Delaware River Source Water Protection Plans

The Schuylkill and Delaware River Source Water Assessments and Protection Plans provide a comprehensive framework for a watershed-wide effort to protect the quality and quantity of Philadelphia's water supplies. The assessments identify and prioritize existing and potential sources of pollution while the plans outline several long-term strategic approaches to reduce the impacts from these sources. Collectively, these documents serve as the foundation of the PWD Source Water Protection Program, a nationally recognized program that has been featured as an exemplary source water protection case study in American Water Works Association (AWWA) industry guidance.

The comprehensive research and analyses completed as part of the Source Water Assessment and Protection Plans in the early 2000s identified the need for a regional partnership in the Schuylkill River Watershed to address priority contaminants through targeted stakeholder workgroups. The resulting watershed partnership, the Schuylkill Action Network, celebrated its 15th year of successful collaborative watershed efforts in 2018.

PWD established the Delaware Valley Early Warning System, a private, web-based emergency communication system, to address unanticipated sources of water pollution. We continue to improve upon the system's technological capabilities and will launch a redesigned website with enhanced mobile compatibility in late 2020.



The PWD Source Water Protection Program continues to collect and analyze data to gain a better understanding of the risks to Philadelphia's water supplies and further refine protection priorities and planning needs.

Per- and polyfluoroalkyl Substances (PFAS)

Per- and polyfluoroalkyl (PFAS) substances are human made chemicals that have been used in industry and many consumer products. Initial research suggests some PFAS have been tentatively linked to health problems.

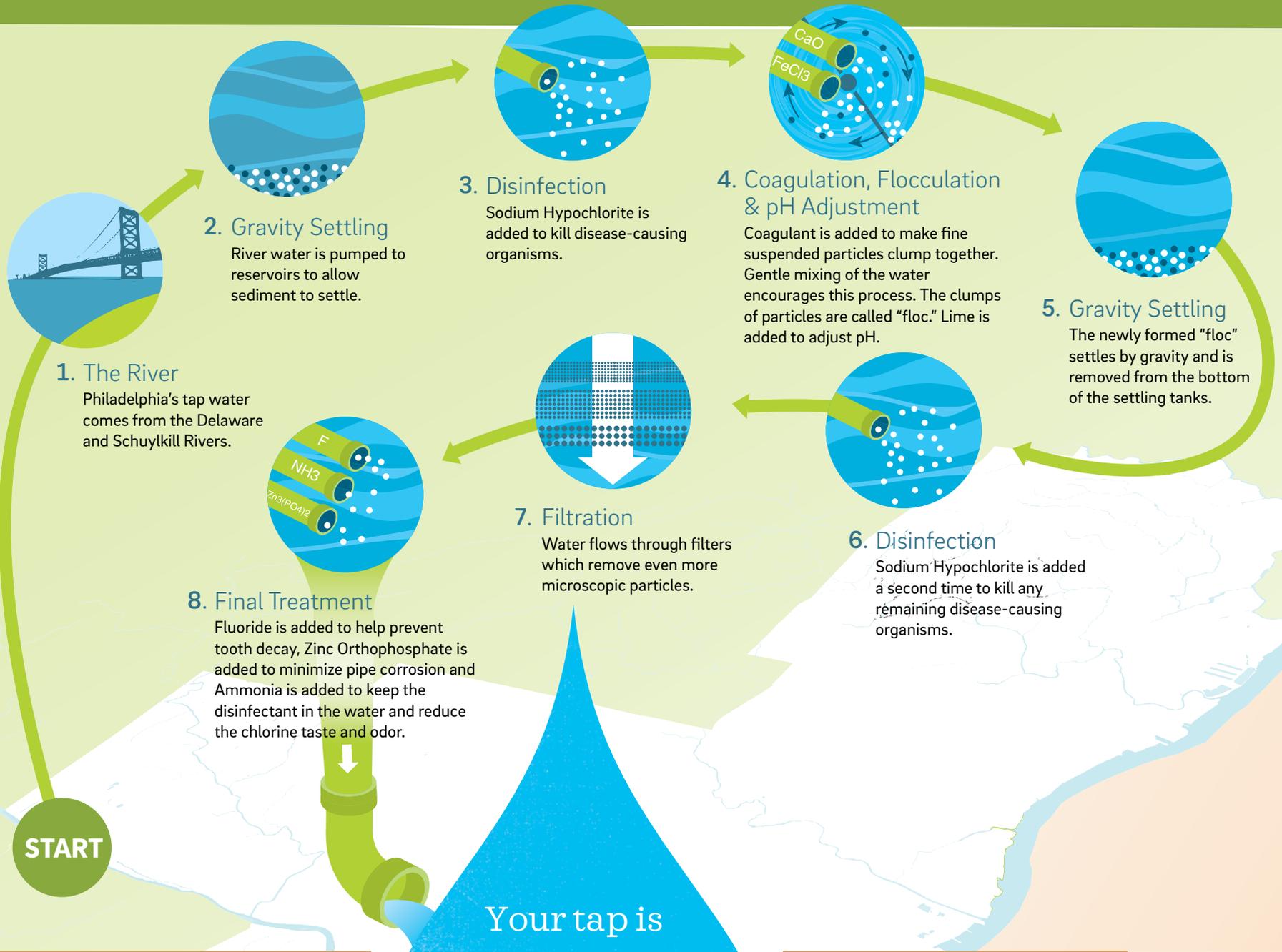
While there are no federal or state drinking water regulations for PFAS in Pennsylvania, in 2016, the EPA set a health advisory level as a guideline.

Treated drinking water samples have been taken from all 3 of PWD's drinking water treatment plants as part of the EPA's national sampling program. All samples were below the EPA health advisory level issued in 2016.

PWD continues to proactively test for PFAS in source water and has not detected concentrations above EPA's advisory level guideline.

Drinking Water Treatment

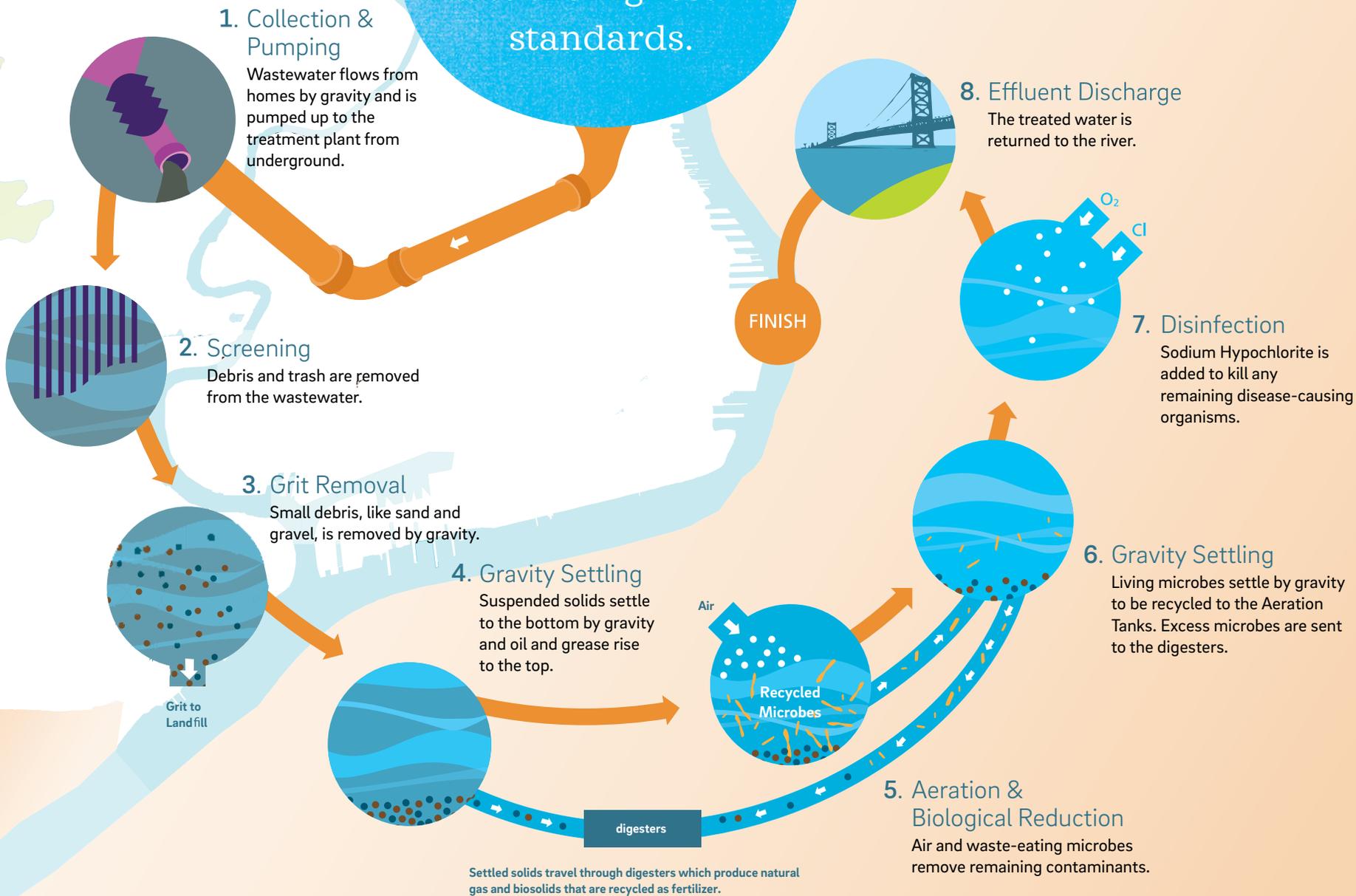
We use a multi-step treatment process at all three of our drinking water treatment plants.



Wastewater Treatment

locally sourced.
Water from our rivers is treated to the highest standards.

After water is used, PWD cleans it before returning the water to the river.



Monitoring Water Quality: What Do We Look For?

Public Drinking Water Systems monitor their treated drinking water for approximately 100 regulated contaminants.

These regulatory parameters are defined within Federal rules such as the Total Coliform Rule, Surface Water Treatment Rule, Disinfectants and Disinfection Byproducts Rules, Lead and Copper Rule and the Radionuclides Rule. We monitor for the regulated parameters listed below. Tables on the following pages summarize monitoring results for parameters found at detectable levels. Please refer to the glossary of terms and abbreviations for more information.

Inorganic Chemicals:

Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Cyanide, Fluoride, Lead, Mercury, Nickel, Nitrate, Nitrite, Selenium, Thallium

amyl, PCBs Total, Pentachlorophenol, Picloram, Simazine, Toxaphene

Volatile Organic Chemicals:

Benzene, Carbon Tetrachloride, 1,2-Dichloroethane, o-Dichlorobenzene, p-Dichlorobenzene, 1,1-Dichloroethylene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, Dichloromethane, 1,2-Dichloropropane, Ethylbenzene, Monochlorobenzene, Styrene, Tetrachloroethylene, Toluene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, o-Xylene, m,p-Xylenes, Vinyl Chloride

Synthetic Organic Chemicals:

2,3,7,8 - TCDD (Dioxin), 2,4 - D, 2,4,5 - TP (Silvex), Alachlor, Atrazine, Benzopyrene, Carbofuran, Chlordane, Dalapon, Di(2-ethylhexyl) adipate and Di(2-ethylhexyl) phthalate, Dibromochloropropane, Dinoseb, Diquat, Endothall, Endrin, Ethylene Dibromide, Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methoxychlor, Ox-

Appealing to Your Senses

We also test for alkalinity, aluminum, chloride, color, hardness, iron, manganese, odor, pH, silver, sodium, sulfate, surfactants, total dissolved solids, turbidity and zinc to ensure that your water meets all water quality taste and odor guidelines. This is so that your water looks, tastes and smells the way it should.

Temperature and Cloudiness

The temperature of the Schuylkill and Delaware Rivers varied seasonally in 2019 from approximately 32 degrees to 86 degrees Fahrenheit. The Philadelphia Water Department

does not treat the water for temperature. Cloudiness in tap water most commonly happens in the winter, when the cold water from the water main is warmed up quickly in household plumbing. Cold water and water under pressure can hold more air than warmer water and water open to the atmosphere. When really cold winter water comes out of your tap, it's simultaneously warming up and being relieved of the pressure it was under inside the water main and your plumbing. The milky white color is actually just tiny air bubbles. If you allow the glass to sit undisturbed for a few minutes, you will see it clear up gradually.

Parameters listed below are not part of EPA's requirements and are provided for information purposes.

SODIUM IN TAP WATER			
	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Average (ppm)	24 ppm	43 ppm	37 ppm
Average (mg in 8 oz. glass of water)	6 mg	10 mg	9 mg
Range (ppm)	17 – 39 ppm	31 – 67 ppm	24 – 80 ppm
Range (mg in 8 oz. glass of water)	4 – 9 mg	7 – 16 mg	6 – 19 mg

HARDNESS IN TAP WATER			
	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Average	97 ppm or 6 gpg	130 ppm or 8 gpg	151 ppm or 9 gpg
Minimum	74 ppm or 4 gpg	90 ppm or 5 gpg	104 ppm or 6 gpg
Maximum	115 ppm or 7 gpg	185 ppm or 11 gpg	219 ppm or 13 gpg

Hardness defines the quantity of minerals, such as calcium and magnesium, in water. These minerals react with soap to form insoluble precipitates and can affect common household chores such as cooking and washing. Philadelphia's water is considered "medium" hard.

ALKALINITY IN TAP WATER			
	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Average	42 ppm	70 ppm	72 ppm
Minimum	26 ppm	48 ppm	48 ppm
Maximum	65 ppm	103 ppm	111 ppm

2019 Drinking Water Quality Results

Listed on pages 16–18 are our Drinking Water Quality Results for 2019. All results are better than the recommended federal levels designed to protect public health. By reporting these results in the tables below, we are meeting a requirement of the EPA. Please see the glossary on page 19 for definitions of abbreviations used in the tables. Some contaminants may pose a health risk at certain levels to people with special health concerns. Others are used as indicators for treatment plant performance. For more information, please visit our website www.phila.gov/water, or call us at (215) 685-6300.

LEAD AND COPPER - Tested at Customers' Taps - Testing is done every 3 years. Most recent tests were done in 2019.						
	EPA's Action Level - for a representative sampling of customer homes	Ideal Goal (EPA's MCLG)	90% of PWD customers' homes were less than	Number of homes considered to have elevated levels	Violation	Source
Lead	90% of homes must test less than 15 ppb	0 ppb	3.0 ppb	2 out of 99	No	Corrosion of household plumbing; Erosion of natural deposits
Copper	90% of homes must test less than 1.3 ppm	1.3 ppm	0.28 ppm	0 out of 99	No	Corrosion of household plumbing; Erosion of natural deposits; Leaching from wood preservatives

INORGANIC CHEMICALS (IOC) - PWD monitors for IOC more often than required by EPA.						
Chemical	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Result	Range of Test Results for the Year	Violation	Source
Antimony	6 ppb	6 ppb	0.5 ppb	0 – 0.5 ppb	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Barium	2 ppm	2 ppm	0.057 ppm	0.027 – 0.057 ppm	No	Discharges of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium	100 ppb	100 ppb	2 ppb	0 – 2 ppb	No	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride	2 ppm*	2 ppm*	0.66 ppm	0.64 – 0.66 ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate	10 ppm	10 ppm	3.84 ppm	0.98 – 3.84 ppm	No	Runoff from fertilizer use; Leaching from septic tanks; Erosion of natural deposits

*EPA's MCL and MCLG is 4 ppm, but PADEP has set this lower MCL and MCLG which takes precedence.

TOTAL CHLORINE RESIDUAL - Continuously Monitored at Water Treatment Plants.					
Sample Location	Minimum Disinfectant Residual Level Allowed	Lowest Level Detected	Yearly Range	Violation	Source
Baxter WTP	0.2 ppm	2.19 ppm	2.19 – 3.69 ppm	No	Water additive used to control microbes
Belmont WTP		1.51 ppm	1.51 – 2.84 ppm		
Queen Lane WTP		0.74 ppm	0.74 – 3.65 ppm		

TOTAL CHLORINE RESIDUAL - Tested throughout the Distribution System. Over 460 samples collected throughout the City each month.					
Sample Location	Maximum Disinfectant Residual Level Allowed	Highest Monthly Average	Monthly Average Range	Violation	Source
Distribution System	4.0 ppm	2.25 ppm	1.70 – 2.25 ppm	No	Water additive used to control microbes

PWD completed all required monitoring for total chlorine residual in the month of August 2019; however, a reporting violation occurred in September 2019 due to 9 out of 550 results for August 2019 for total chlorine residual were reported later than the required timeframe.

2019 Drinking Water Quality Results (Continued)

TOTAL ORGANIC CARBON - Tested at Water Treatment Plants.					
Treatment Technique Requirement	Baxter WTP One Year Range	Belmont WTP One Year Range	Queen Lane WTP One Year Range	Violation	Source
Percent of Removal Required	25 – 45%	15 – 35%	15 – 35%	n/a	Naturally present in the environment
Percent of Removal Achieved	28 – 72%	1 – 64%	23 – 65%	No	
Number of Quarters out of Compliance	0	0	0		

**PWD achieved TOC removal requirements in all quarters of 2019 at all WTPs. Compliance is based on a running annual average computed quarterly. The numbers shown represent a range of TOC results in weekly samples.*

TURBIDITY - A Measure of Clarity (Tested at Water Treatment Plants)					
	Baxter WTP	Belmont WTP	Queen Lane WTP	Violation	Source
Treatment Technique Requirement: 95% of samples must be at or below 0.300 NTU	100% below 0.300 NTU	100% below 0.300 NTU	100% below 0.300 NTU	n/a	Soil runoff, river sediment
Highest single value for the year	0.090 NTU	0.086 NTU	0.070 NTU	No	

DISINFECTION BY-PRODUCTS					
	Highest Level Allowed (EPA's MCL) - One Year Average	Maximum Locational Running Annual Average 2019*	System Wide Range of Results	Violation	Source
Total Trihalomethanes (TTHMs)	80 ppb	47 ppb	14 – 86 ppb	No	By-product of drinking water disinfection
Total Haloacetic Acids (THAAs)	60 ppb	43 ppb	0 – 63 ppb		

**Monitoring is conducted at 16 locations throughout the City of Philadelphia. This result is the highest locational running annual average in 2019.*

UNREGULATED CONTAMINANT MONITORING (UCMR) ¹			
Chemical	Testing Period	Average	Range
Bromide ²	4/3/2019 – 10/1/2019	0.066 ppm	0.021 – 0.164 ppm
Total Organic Carbon (TOC) ²	4/2/2019 – 10/1/2019	2.44 ppm	1.71 – 3.51 ppm
1-Butanol	4/3/2019 – 10/2/2019	0.32 ppb	0 – 2.87 ppb
HAA5 Total ³	4/2/2019 – 10/1/2019	29.6 ppb	15.9 – 48.8 ppb
HAA6Br Total ⁴	4/2/2019 – 10/1/2019	11.1 ppb	3.89 – 30.2 ppb
HAA9 Total ³	4/2/2019 – 10/1/2019	39.8 ppb	24.5 – 55.8 ppb
Manganese	4/3/2019 – 10/2/2019	2.4 ppb	0 – 15.2 ppb

¹ Unless otherwise noted, samples were collected from finished water sampling locations.

² Bromide and TOC represent source water samples.

³ HAA5 Total - Dibromoacetic Acid, Dichloroacetic Acid, Monobromoacetic Acid, Monochloroacetic Acid, and Trichloroacetic Acid

⁴ HAA6Br Total - Bromochloroacetic Acid, Bromodichloroacetic Acid, Dibromoacetic Acid, Dibromochloroacetic Acid, Monobromoacetic Acid, and Tribromoacetic Acid

⁵ HAA9 Total - Bromochloroacetic Acid, Bromodichloroacetic Acid, Chlorodibromoacetic Acid, Dibromoacetic Acid, Dichloroacetic Acid, Monobromoacetic Acid, Monochloroacetic Acid, Tribromoacetic Acid, and Trichloroacetic Acid

In 2019, PWD performed special monitoring as part of the Unregulated Contaminant Monitoring Rule (UCMR), a nationwide monitoring effort conducted by the EPA. Unregulated contaminants are those that do not yet have a drinking water standard set by the EPA. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard. For more information concerning UCMR, visit these websites: <https://www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule> or <https://drinktap.org/Water-Info/Whats-in-My-Water/Unregulated-Contaminant-Monitoring-Rule-UCMR>

UNREGULATED CONTAMINANTS NOT DETECTED AT ANY OF THE SAMPLING LOCATIONS
2-Methoxyethanol, 2-Propen-1-ol, alpha-Hexachlorocyclohexane, Butylated Hydroxyanisole, Chlorpyrifos, Dimethipin, Ethoprop, Germanium, o-Toluidine, Oxyfluorfen, Permethrin Total, Profenofos, Quinoline, Tebuconazole, Tribufos

Glossary

Some of the words we use in the following charts may not be familiar to you. Here are definitions of technical and other terms.

Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. The action level is not based on one sample; instead, it is based on many samples.

Alkalinity: A measure of the water's ability to resist changes in the pH level and a good indicator of overall water quality. Although there is no health risk from alkalinity, we monitor it to check our treatment processes.

E. coli (Escherichia coli): A type of coliform bacteria that is associated with human and animal fecal waste.

gpg (grains per gallon): A unit of water hardness. One grain per gallon is equal to 17.1 parts per million.

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.

mg/L (Milligrams per liter): One milligram per liter is equal to one part per million.

MRDL (Maximum Residual Disinfection Level): The highest level of disinfectant that is allowed in drinking water. The addition of a disinfectant is necessary for the control of microbial contaminants.

MRDLG (Maximum Residual Disinfection Level Goal): The level of a disinfectant in drinking water 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.

Minimum Residual Disinfectant Level: The minimum level of residual disinfectant required at the entry point to the distribution system.

NTU (nephelometric turbidity units): Turbidity is measured with an instrument called a nephelometer. Measurements are given in nephelometric turbidity units.

Pathogens: Bacteria, virus, or other microorganisms that can cause disease.

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

ppm (parts per million): Denotes 1 part per 1,000,000 parts, which is equivalent to two thirds of a gallon in an Olympic-sized swimming pool.

ppb (parts per billion): Denotes 1 part per 1,000,000,000 parts, which is equivalent to half a teaspoon in an Olympic-sized swimming pool.

µg/L (Microgram per liter): One microgram per liter is equal to one part per billion.

ppt (parts per trillion): Denotes 1 part per 1,000,000,000,000 parts, which is equivalent to one drop in 20 Olympic-sized swimming pools.

SOC (Synthetic Organic Chemical): Commercially made organic compounds, such as pesticides and herbicides.

Total Coliform: Coliforms are bacteria that are naturally present in the environment. Their presence in drinking water may indicate that other potentially harmful bacteria are also present.

THAAs (Total Haloacetic Acids): A group of chemicals known as disinfection byproducts. These form when a disinfectant reacts with naturally occurring organic and inorganic matter in the water.

TOC (Total Organic Carbon): A measure of the carbon content of organic matter. This measure is used to indicate the amount of organic material in the water that could potentially react with a disinfectant to form disinfection byproducts.

TTHMs (Total Trihalomethanes): A group of chemicals known as disinfection byproducts. These form when a disinfectant reacts with naturally occurring organic and inorganic matter in the water.

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

Turbidity: A measure of the clarity of water related to its particle content. Turbidity serves as an indicator for the effectiveness of the water treatment process. Low turbidity measurements, such as ours, show the significant removal of particles that are much smaller than can be seen by the naked eye.

VOC (Volatile Organic Chemicals): Organic chemicals that can be either man-made or naturally occurring. These include gases and volatile liquids.

WTP: Water Treatment Plant

New murals promote tap, unify communities

PWD + Mural Arts new projects highlight the benefits of tap.

In an effort to elevate awareness of the city's top-quality tap water, we partnered with Mural Arts Philadelphia to create works of public art with a simple theme: Drink More Tap.

The Penrose Recreation Center at 12th Street and Susquehanna Avenue and the Cruz Recreation Center, at 6th and Master Streets, were selected as sites to feature new murals promoting the benefits of drinking Philly tap with portraits of residents in the designs.

Both murals were started in 2019 and are being completed by artist Calo Lopez Rosa. The Penrose mural is scheduled for completion in the summer of 2020 and the Cruz mural is expected to be completed by December 2020.



Testing the Waters

The Drink More Tap projects were inspired by annual customer surveys showing roughly 40 percent of Philadelphians drink bottled water at home instead of tap. An additional layer shows a correlation between bottled water use and poverty.

The murals were created by working closely with Philly communities where, according to survey responses over the last four years, bottled water use is most common.

Partner Projects

Alongside PWD and Mural Arts representatives, Penrose Recreation Center leaders hosted community painting days which drew volunteers from the neighborhood. Michael Wilcox, a 2019 Drink Philly Tap ambassador and North Philly-based environmental and community revitalization advocate, also joined the volunteers and shared with participants how murals have a lasting effect on neighborhoods.

Say “Cheese” - and “Cheers” to Tap!

In early 2019, area residents gathered at Penrose Recreation Center to have their photos taken by Lopez Rosa, who had relocated from El Salvador at the time.

The residents' portraits are woven into the final design.

Coming from a country where drinking tap water is discouraged because of unreliable treatment, Lopez Rosa often mentions how privileged he feels to drink Philly tap water. He echoes our mission to foster Philadelphians' confidence in consuming tap water and using art as a vehicle for discussion.

Fairmount Water Works Interpretive Center

Since opening in 2003 as the education center for the Philadelphia Water Department (PWD), the Fairmount Water Works Interpretive Center (FWWIC) has become a hub for STEAM (science, technology, engineering, arts, mathematics) and environmental education, scientific research, and community engagement. FWWIC is uniquely positioned to serve teachers and schools equitably throughout Philadelphia's urban watershed, connecting each school with locally relevant watershed projects in and around their neighborhoods.

More than 25,000 adults, 20,000 families and more than 7,000 school-aged children are served by the FWWIC's programs and exhibits each year. There is no barrier to access as there is no admission fee and the site is completely ADA compliant.

Following the initial pilot phase of Understanding the Urban Watershed, FWWIC's cross-disciplinary curriculum for grades 6-8, the School District of Philadelphia became a partner to provide training, teaching materials and year-long coaching support for classroom teachers. Plans for 2020–21 include expanding into nine new district schools and the development and expansion for a 9th Grade Environmental Science unit.

In 2020, the FWWIC entered its planning phase of the Floating Water Workshop. Situated just south of the Water Works complex, the Floating Water Workshop will serve as a means of genuinely creating and fostering an "aquatic commons" - a shared public arena and science lab near and on the water. The Floating Water Workshop will extend the interpretive exhibitions to include direct access to

the Schuylkill River, including a living, floating laboratory for water-based research that links public education, interpretation and real-time research. The Floating Water Workshop is a natural extension of the FWWIC's mission to connect the public to current and urgent watershed issues.



Clean Water Begins and Ends With You!



Don't Pollute!

Water that enters our storm drains often flows directly to our local streams and rivers. Do your part to help protect our waterways:

- Always recycle or dispose of household hazardous wastes properly.
- Don't pour motor oil, antifreeze or other toxic materials down storm drains, which connect to the city's sewer system.
- Don't flush paint thinners, insect sprays, herbicides and other harmful chemicals down the toilet or put them down the sink.

Contact the Streets Department to get a schedule of their Household Hazardous Materials Drop-off Events where you can dispose of these materials safely without polluting your drinking water supply.

Don't flush wipes, whether made from natural or synthetic materials, down the toilet because they do not instantly dissolve like toilet paper. **In homes, wipes can cause interior pipes to clog and sewage to back-up into homes or the street.**

It is also important NOT to discard rubber gloves, masks and any other litter onto streets or sidewalks because they can end up in our local waterways or at our wastewater treatment plants where they can clog the infrastructure. All litter and waste should be properly discarded into a trash can.



Get Involved:

We welcome your ideas and opinions

We participate in nearly 200 public and community events a year, including presentations made at schools, on-going educational programs and other environmental celebrations. We offer ways for individuals, families, students, seniors, community groups and others to participate in learning about protecting water.

If you would like to help protect your water supply or watershed, please call the Philadelphia Water Department at (215) 685-6300, visit our website at www.phila.gov/water, or see Table 2 on page 23.

Contact us

Philadelphia Water Department
1101 Market Street, 6th Floor
Philadelphia, PA 19107-2994

Customer Contact Center:

(215) 685-6300
waterinfo@phila.gov

Important Telephone Numbers & Websites

Delaware River and Schuylkill River Source Water Assessments

www.phila.gov/water/sustainability/protectingwaterways/Pages/default.aspx

Fairmount Water Works

(215) 685-0723

www.fairmountwaterworks.org

Philadelphia Streets Department

(215) 686-5560

www.philadelphiastreet.com

Philadelphia Water Department

(215) 685-6300

www.phila.gov/water

RiverCast

www.phillyrivercast.org

Schuylkill Action Network

(800) 445-4935

www.schuylkillwaters.org

U.S Environmental Protection Agency

Safe Drinking Water Hotline

(800) 426-4791

www.epa.gov/water

Table 1: Who To Call To Report Various Situations

Situation	Who to Call	Phone
Dead Fish	Fish & Boat Commission PADEP	(717) 626-0228 (484) 250-5900
Illegal Dumping & Related Pollution Activities	PADEP PWD	(484) 250-5900 (215) 685-6300
Sewage Spills	PADEP PWD	(484) 250-5900 (215) 685-6300
Oil & Gas Spills/Accidents	PADEP PWD	(484) 250-5900 (215) 685-6300

Table 2: Places To Go To Get Involved In Protecting Your Local Streams, Rivers And Water Supply

Organization	Activity Type	Phone	Website
Center in the Park	A, C, E, P, T	(215) 848-7722	www.centerinthepark.org
Environmental Alliance for Senior Involvement	A, C, E, P, T	(203) 779-0024	www.easi.org
Friends of Fox Chase Farms	A, C, E, P	(215) 728-7900	www.foxchasefarm.org
Friends of the Wissahickon	A, C, E, P, T	(215) 247-0417	www.fow.org
Lower Merion Conservancy	A, C, E, P, T	(610) 645-9030	www.lmconservancy.org
Partnership for the Delaware Estuary	A, B, C, E, P, S, T	(800) 445-4935	www.delawareestuary.org
Philadelphia Canoe Club	F, R	(215) 487-9674	www.philacanoec.org
Schuylkill Action Network	A, B, C, E, L, P, T	(302) 655-4990 x121	www.schuylkillwaters.org
Schuylkill Banks	B, E, L	N/A	www.schuylkillbanks.org
Schuylkill Center for Environmental Education	A, B, C, E, P, T	(215) 482-7300	www.schuylkillcenter.org
Tookany/Tacony-Frankford (TTF) Watershed Partnership	A, C, E, P, T	(215) 744-1853	www.ttfwatershed.org
U.S. Water Alliance	A, B, E	(415) 921-9010	www.uswateralliance.org
Wissahickon Restoration Volunteers	A, C, E, P, T	(215) 798-0044	www.wissahickonrestorationvolunteers.org
Wissahickon Valley Watershed Association	A, C, E, P, T	(215) 646-8866	www.wvwa.org

Activity Types**A:** Environmental activism**B:** Business-related protection and educational activities**C:** Clean-up of trash and litter**E:** Environmental education**F:** Fishing or fish recreation activities**L:** Land conservation and management**P:** Planting trees and streambank repair/protection**R:** Rowing, canoeing and related boating activities**S:** Storm drain marking**T:** Water quality testing



PHILADELPHIA
WATER
— DEPARTMENT —

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Philadelphia, PA 19107
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