



2014

# DRINKING WATER QUALITY REPORT

FEATURING 2013 TAP WATER QUALITY RESULTS



**PWD is an active and proud member of:**

- American Water Resources Association
- American Water Works Association
- Partnership for Safe Water
- American Public Works Association
- Association of Metropolitan Water Agencies
- Clean Water American Alliance
- National Association of Clean Water Agencies
- Partnership for the Delaware Estuary
- Schuylkill Action Network
- Tookany/Tacony-Frankford (TTF) Watershed Partnership
- U.S. Water Alliance
- Water Environment Federation
- Water Environment Research Foundation
- Water Research Foundation

For a complete list of PWD member organizations, visit us at <http://www.phila.gov/water> and <http://www.phillywatersheds.org>. Our Customer Information Hotline is 215-685-6300.

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.

Philadelphia's water is safe and healthy to drink for most people. For people with special health concerns, please see the information on page 3.

**PWD's Public Water System Identification #PA1510001**



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Philadelphia, PA 19107-2994

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### **Please Share This Water Quality Report**

Please share this information with all the other 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 or mail.

**Para obtener una copia del informe en Español sobre los resultados más recientes de la calidad del agua publicado por el Departamento de Agua de Philadelphia, llame al 215-685-6300.**

## THE PHILADELPHIA WATER DEPARTMENT (PWD)

### A MESSAGE FROM PWD'S COMMISSIONER

I'm pleased to share the Philadelphia Water Department's annual Drinking Water Quality Report that details the outstanding work of our nearly 1,900 dedicated employees to provide safe and top quality drinking water 24 hours a day, seven days a week. It's this non-stop commitment to quality and service that makes it possible for us to live up to our vision to be America's model water utility — and your safe, reliable supplier of the water that means so much to your quality of life.

This report, published in the Spring of 2014, includes water quality information for the 2013 calendar year. The U.S. Environmental Protection Agency (EPA) requires all water utilities to produce and distribute water quality reports on an annual basis. We take this opportunity to introduce you to a variety of programs and operations that ensure the holistic stewardship of our drinking water sources — the Schuylkill and Delaware rivers.

As providers of one of life's ultimate essentials, we at the Philadelphia Water Department work together as leaders in service to our city and our region, providing clean, safe, drinkable water to the more than 1.7 million people who rely on us.

It's this very idea that we carry into all that we do, driving our commitment to delivering maximum environmental benefits at the least cost to society.



Howard M. Neukrug, P.E., BCEE  
Water Commissioner

Our standards are the highest: PWD drinking water quality is better than all drinking water standards developed by the EPA to protect public health.



### PEOPLE WITH SPECIAL HEALTH CONCERNS

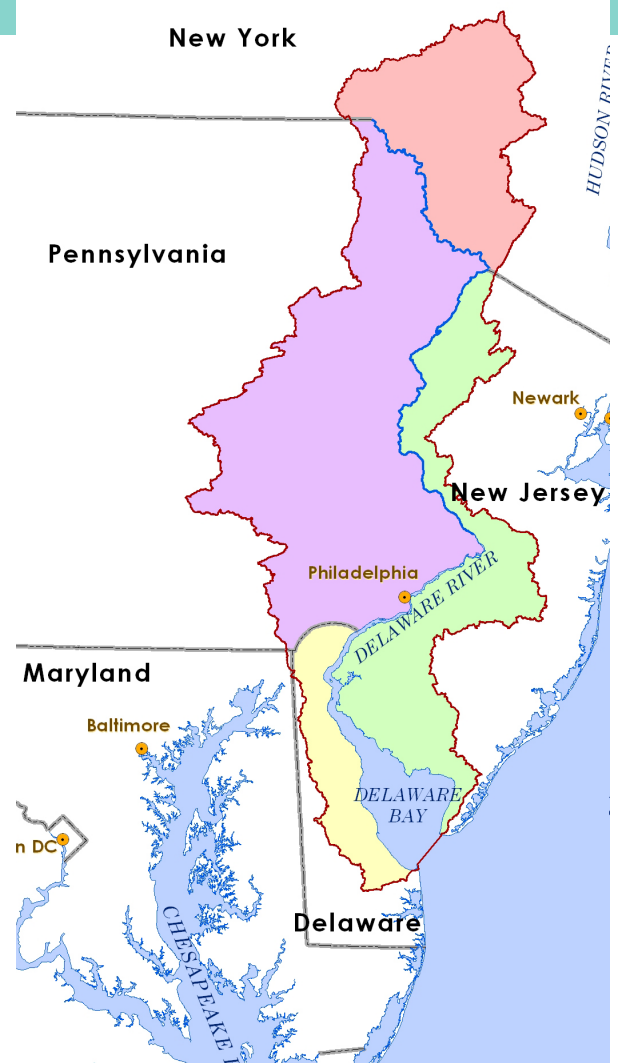
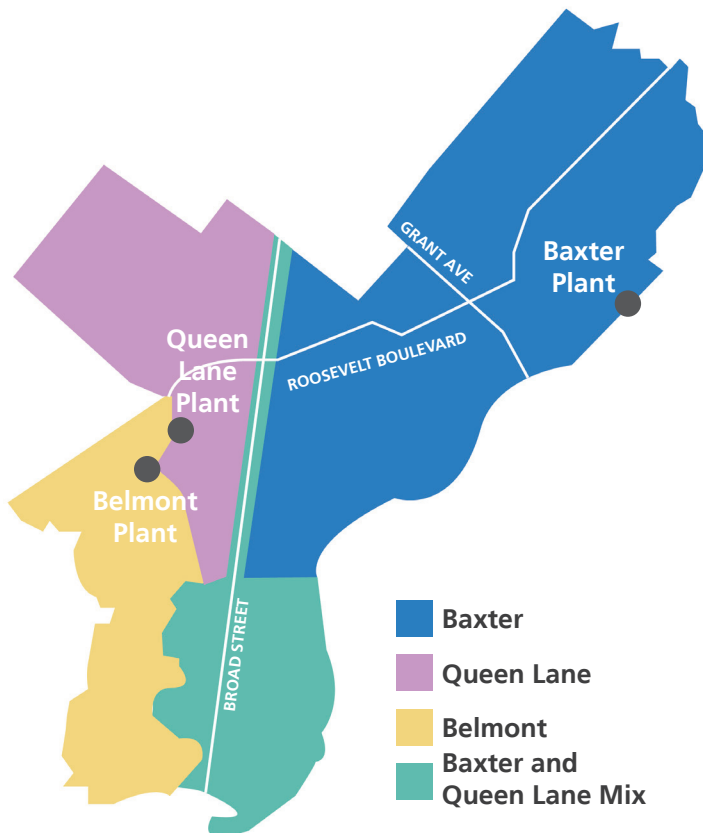
Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS and other immune system disorders, some elderly and infants 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.

## WHERE DOES PHILADELPHIA'S DRINKING WATER COME FROM?

The water that we treat comes from the Schuylkill and Delaware rivers. Rivers are surface water supplies. Philadelphia does not use groundwater. Each river contributes approximately one-half of the City's overall supply. We produce approximately 250 million gallons of high-quality drinking water for our customers on a daily basis.

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 Queen Lane Plant is located in East Falls and its water comes from the Schuylkill River. Its intake is located along Kelly Drive. The Belmont Plant is located in Wynnefield and its water also comes from the Schuylkill River. Its intake is located along Martin Luther King, Jr. Drive. The Baxter Plant is located in Torresdale and its water comes from the Delaware River. Its intake is located at the plant on the Delaware River.



Map: Delaware River Basin Commission

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

Today, the City enjoys watersheds that are cleaner and healthier than they have been in well over a century.

### 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.

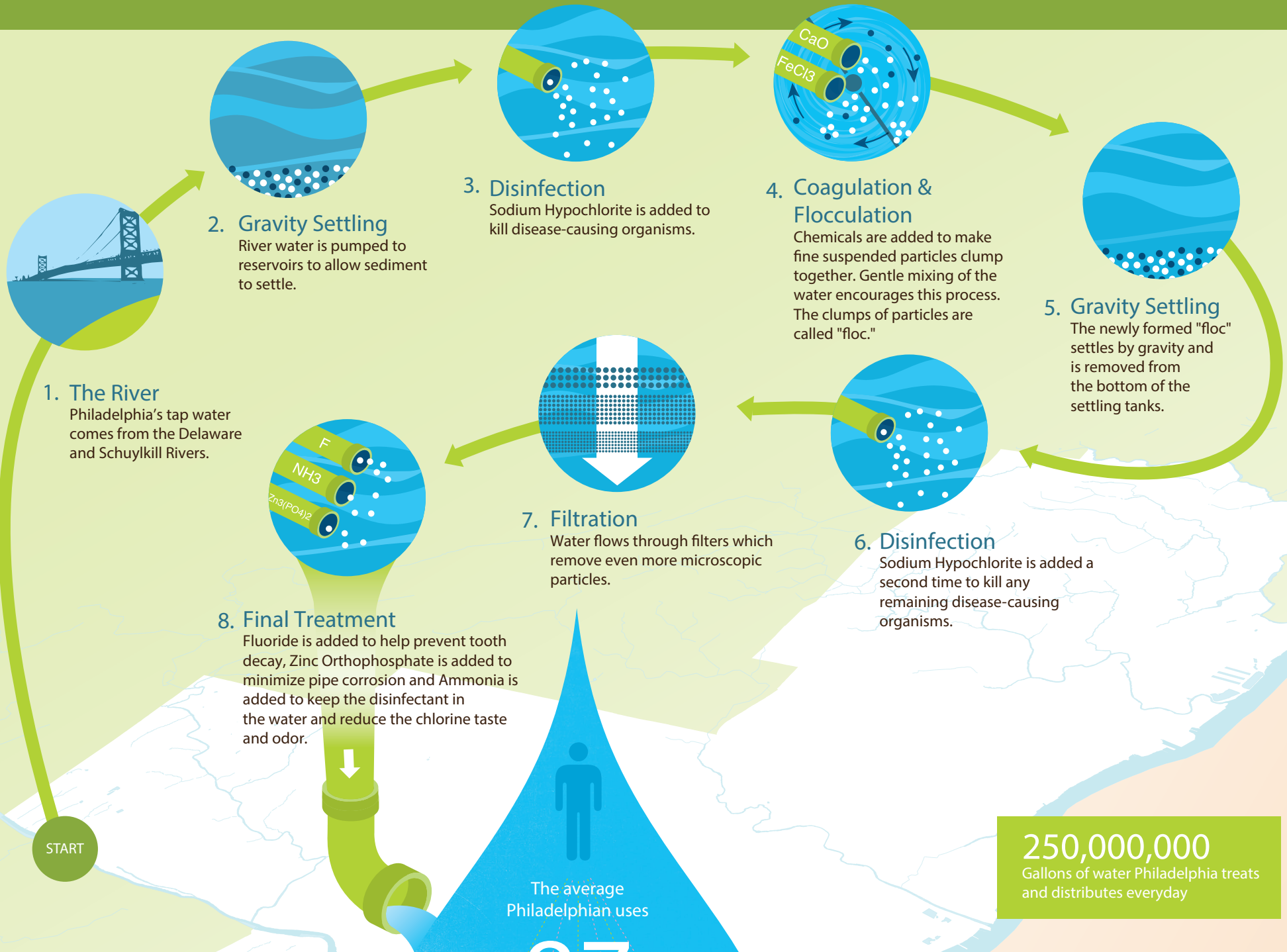
At their sources, the Delaware and Schuylkill Rivers are generally clean. But as the rivers flow downstream, they pick up contaminants from many sources — stormwater runoff washes pollutants on the land into the rivers, and communities and industries discharge used water back into the rivers. Today, the City 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 U.S. Environmental Protection Agency (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, 800-426-479, or from their website: <http://www.epa.gov/safewater>.

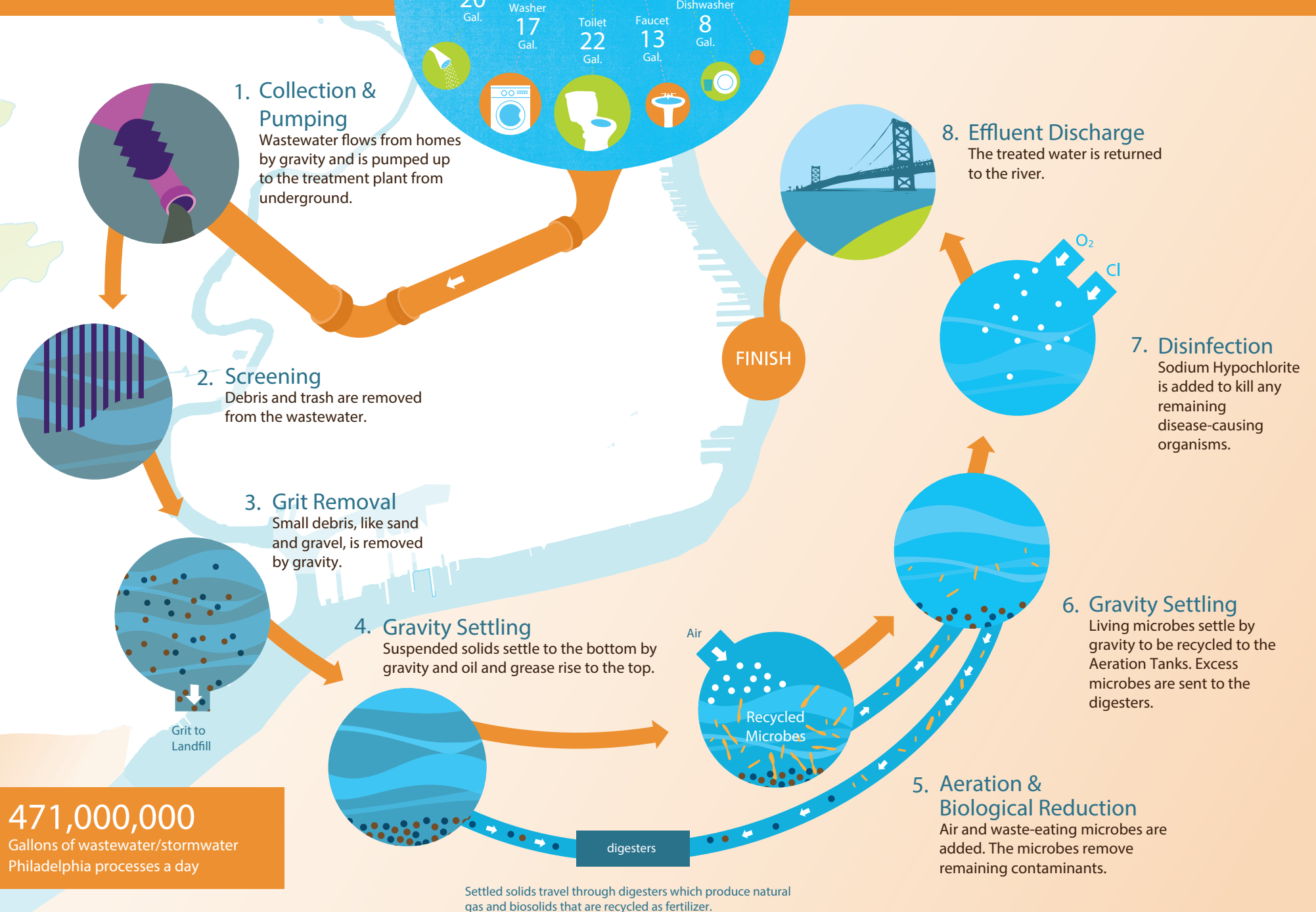
# How Do We Make Water Drinkable?

Like the majority of water utilities in the U.S., we use a multi-step treatment process at all three of our drinking water treatment plants. This Water Treatment Process diagram provides a brief description of drinking water treatment in Philadelphia.



# How Do We Process Wastewater?

After water is used, PWD is responsible for cleaning it before returning the water to the river. This is the Wastewater Treatment Process. We return about 98% of the water that we withdraw for our use to the river.



## PARTNERSHIP FOR SAFE WATER

**The Philadelphia Water Department (PWD) consistently produces high quality drinking water, achieving Partnership for Safe Water (Partnership) quality standards that are stricter than State and Federal water quality regulatory requirements.** PWD voluntarily adopted these goals, as a member of the Partnership for Safe Water\* in 1996. The average turbidity level (measure of water clarity) of PWD drinking water has been at or below 0.06 nephelometric turbidity units (NTU) since 1998.

**The turbidity of Philadelphia's water in 2013 was 85 percent below the maximum level of 0.30 NTU allowed by State and Federal Regulations and was more than 50 percent below the Partnership for Safe Water turbidity goal of 0.10 NTU.**

In 2008, the Baxter, Queen Lane and Belmont Water Treatment Plants were honored by USEPA and PaDEP with the Partnership for Safe Water 10-Year Director's Award in recognition of PWD's decade-long commitment to achieving and maintaining the highest possible drinking water quality.

August 8, 2013 marked the fifteenth year of Partnership for Safe Water Phase 3 Status for PWD drinking water plants. PWD is committed to participation in this ongoing program, to optimize treatment processes, operating and maintenance procedures and management practices to enhance and maintain our water system's ability to remove *Cryptosporidium*, *Giardia* and other microbial contaminants and ensure high quality drinking water.

PWD extended its participation in the Partnership for Safe Water initiative by becoming a charter member in the new Distribution System Optimization Program. 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 U.S. Environmental Protection Agency (USEPA), the American Water Works Association, the Association of Metropolitan Water Agencies and advocated by the Pennsylvania Department of Environmental Protection (PaDEP). Pennsylvania leads the nation in participation in this program and the Philadelphia Water Department is one of Pennsylvania's leaders.*



### 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 the most effective way 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 byproducts, 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.



## LEAD IN DRINKING WATER

**It is important to minimize the intake of lead from dust inhalation, food and water.** Children are particularly susceptible to the health effects of lead poisoning. Lead is most commonly found in dust, paint and contaminated soil. To a lesser extent, lead can also occur in tap water. When detected in tap water, it usually comes from older home plumbing or lead service pipes. When disturbed, such as for a repair, these lines can contribute to lead in tap water. It is the homeowner's responsibility to maintain, repair and replace the service lines.

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. 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 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 or at <http://www.epa.gov/safewater/lead>.

Our primary role in helping you minimize your intake of lead is to reduce the corrosive effects of tap water on materials that contain lead. Water is corrosive and encourages the dissolving of lead from these materials. The Philadelphia Water Department has a permit with the Pennsylvania Department of Environmental Protection (PA DEP) for operating under optimized corrosion control to minimize lead leaching from plumbing materials.

Currently, every three years, the Philadelphia Water Department tests tap water for lead at more than 50 representative taps of homes in the City which have lead plumbing components. We do this according to the requirement of the EPA's Lead and Copper Rule. The testing results are used to determine if our corrosion control treatment technique is working, so that water has minimum potential for lead to leach from plumbing materials. So far, our test results show that our treatment techniques keep lead levels to a minimum. For the 2011 test results, please see the chart on page 14.

These test results could change in any year, however, because Philadelphia is required to meet other regulations for tap water quality. Sometimes these water quality changes can affect the corrosion potential of the water. If such a change were to occur, the Philadelphia Water Department would notify its customers of the change while it works to return to minimum corrosion conditions again. Water utilities all over the country are in the same position as Philadelphia, trying to balance all of the regulatory requirements and changes at one time so that their customers receive the best quality water possible. We are committed to reducing the corrosive effects of plumbing and lead levels in water. Additional information is available from the EPA's Safe Drinking Water Hotline at 800-426-4791 or from their website at <http://water.epa.gov/drinking/info/lead>.



## RESEARCH AND MONITORING

### PHARMACEUTICALS IN DRINKING WATER



**The Philadelphia Water Department has been supporting and conducting research on pharmaceuticals and personal care products in drinking water since 2004.**

This issue exists throughout the world, wherever pharmaceuticals are utilized. 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.

The pharmaceuticals detected in Philadelphia's waterways are in extremely low concentrations. Currently, there is no scientific evidence to suggest that either short or long term exposure to trace concentrations of these compounds will pose risk to public health. The Philadelphia Water Department continues to stay abreast of this issue to ensure the safety of our drinking water and the protection of our watersheds.

You can help keep unused pharmaceuticals out of the water supply by paying attention to how you dispose of unused medications. Look for take-back programs that may be established near you. The Drug Enforcement Agency (DEA) sponsors national take-back programs in coordination with State and local law enforcement agencies. The national take-back program provides opportunities for the public to surrender expired, unwanted or unused pharmaceuticals and other medications to law enforcement officers for proper disposal. To find out about future take-back events, visit DEA's website at [www.deadiversion.usdoj.gov/drug\\_disposal/takeback/](http://www.deadiversion.usdoj.gov/drug_disposal/takeback/).

#### 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

To learn more about pharmaceuticals and drinking water, view the following short instructional video developed by PWD and the Philadelphia chapter of Physicians for Social Responsibility <http://vimeo.com/78005190>.

## RESEARCH AND MONITORING

### FLUORIDE REDUCTION

#### **Fluoridation has been successfully practiced in the United States since the mid 1900s.**

The Philadelphia Water Department began adding fluoride to the water supply system as a service to the Philadelphia Health Department and in compliance with the Philadelphia Health Code established in 1951 at a concentration of 1.0 ppm. In January 2012, the amount of fluoride added to the water was decreased in cooperation with the Philadelphia Health Department and the Pennsylvania Department of Environmental Protection so that customers now receive water containing 0.7 ppm, as per new recommendations from the U.S. Public Health Service.

In 1999, the U.S. Centers for Disease Control (CDC) declared that the fluoridation of drinking water is considered to be one of the ten greatest achievements in public health in the 20<sup>th</sup> century. The CDC estimates that in most cities, every \$1 invested in water fluoridation yields an approximate \$38 in savings on dental treatment costs as a result of a 40 to 65 percent reduction in tooth decay.



### 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 that can be found in rivers. The Department of Public Health monitors local hospital records in real time for symptoms consistent with waterborne illnesses and would contact the Water Department if there were any concerns that the drinking water may be contributing to illnesses.

The Water Department 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 organism. The Water Department's Office of Watersheds manages a source water protection program that looks at protecting the rivers in the City as well as farther upstream of Philadelphia. PWD continues source water *Cryptosporidium* research, in collaboration with Lehigh University. By identifying sources of *Cryptosporidium* in the watershed, PWD is taking a proactive approach in improving our rivers' water quality.

**PWD is taking a proactive approach in improving the rivers' water quality.**

## PROTECTING OUR WATER SUPPLY

The Philadelphia Water Department (PWD) is committed to stream restoration in our watersheds to protect our drinking water supply, natural lands and existing infrastructure. PWD works to improve the whole ecosystem at restoration sites by rebuilding stream banks, removing invasive vegetation and replanting with native varieties.

Check out a few of our projects in the Wissahickon Creek watershed:

- **Bells Mill Run Stream Restoration:** 5,400 feet of stream restoration slows the flow from two stormwater outfalls, preventing erosion from washing away the banks and undercutting Bells Mill Road.
- **Wises Mill Stormwater Treatment Wetland:** The three acre wetland captures runoff from 92 acres of land, holding it temporarily while the water filters slowly into the ground, reducing the flow of sediment downstream.
- **Cathedral Run Stormwater Treatment Wetland:** The 95,000 cubic foot wetland captures runoff from 74 acres of land, slowing the flow into Wissahickon Creek and reducing erosion.
- **Carpenter's Woods Gully Repair:** Gully repairs successfully slow the flow from three stormwater outfall pipes, reducing erosion and stabilizing the stream channel.
- **Saylor Grove Stormwater Treatment Wetland:** This one acre wetland captures runoff from 156 acres of land, allowing it to slowly filter into the ground, reducing the flow of water and sediment into the Monoshone Creek.



## 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 pages 14-18 summarize monitoring results for parameters found at detectable levels. Please see a glossary of terms and abbreviations on page 19.

### Inorganic Chemicals:

Antimony, Arsenic, Asbestos, Barium, Beryllium, Cadmium, Chromium, Cyanide Free, Fluoride, Mercury, Nickel, Selenium, Thallium

### Synthetic Organic Chemicals:

Alachlor, Atrazine, Benzopyrene, Carbofuran, Chlordane, Dalapon, Di(ethylhexyl)adipate, Di(ethylhexyl)phthalate, Dibromochloropropane, Endothall, Ethylene Dibromide, Hexachlorocyclopentadiene, Lindane, Methoxychlor, Oxamyl, PCBs Total, Pentachlorophenol, Picloram, Simazine

### 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

### Appealing to Your Senses

We also test for aluminum, chloride, color, iron, manganese, odor, pH, silver, sulfate, surfactants, total dissolved solids 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 varies seasonally from approximately 32 degrees to 86 degrees Fahrenheit. PWD 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 by 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.

## 2013 DRINKING WATER QUALITY RESULTS

Listed on pages 14-18 are our Drinking Water Quality Results for 2013. 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. Others, such as turbidity, are used as indicators for treatment plant performance. For information about potential risks, please visit our website <http://www.phila.gov/water>, or call us at 215-685-6300. We will be happy to mail them to you.

<b>LEAD AND COPPER - Tested at Customers' Taps - Testing is done every 3 years.</b> Most recent tests were done in 2011.						
	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	5.8 ppb	2 out of 92	No	Corrosion of household plumbing; Erosion of natural deposits
Copper	90% of homes must test less than 1.3 ppm	1.3 ppm	0.32 ppm	1 out of 92	No	Corrosion of household plumbing; Erosion of natural deposits; Leaching from wood preservatives

<b>MICROBIOLOGICAL CONTAMINANTS - Tested throughout the Distribution System. Over 450 samples collected throughout the City every month.</b>						
	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Monthly % or Yearly Total of Positive Samples	Monthly Range (% or #)	Violation	Source
Total Coliform	5% of monthly samples are positive*	0	0.56%	0 - 0.56%	No	Naturally present in the environment
Fecal Coliform or E.coli		0	0	0	No	Human or animal fecal waste

\*Every sample that is positive for total coliforms must also be analyzed for either fecal coliforms or *E. coli*. If a system has two consecutive total coliform positive samples, and one is also positive for *E. coli*, then the system has an acute MCL violation.

<b>SYNTHETIC ORGANIC CHEMICALS (SOC)</b>						
Chemical	EPA's MCL	EPA's MCLG	Highest Result	Yearly Range	Violation	Source
Atrazine	3 ppb	3 ppb	0.6 ppb	0 - 0.6 ppb	No	Runoff from herbicide used on row crops

## 2013 DRINKING WATER QUALITY RESULTS

### 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	2.03 ppm	2.03 - 3.83 ppm	No	Water additive used to control microbes
Belmont WTP		0.97 ppm	0.97 - 3.01 ppm		
Queen Lane WTP		2.00 ppm	2.00 - 3.54 ppm		

### TOTAL CHLORINE RESIDUAL - Tested throughout the Distribution System. Over 450 samples collected throughout the City every month.

Sample Location	Maximum Disinfectant Residual Level Allowed	Highest Monthly Average	Monthly Average Range	Violation	Source
Distribution System	4.0 ppm	1.98 ppm	1.41 - 1.98 ppm	No	Water additive used to control microbes

### 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
Barium	2 ppm	2 ppm	0.045 ppm	0.024 - 0.045 ppm	No	Discharges of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium	100 ppb	100 ppb	3 ppb	0 - 3 ppb	No	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride	2 ppm*	2 ppm*	0.78 ppm	0.73 - 0.78 ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate	10 ppm	10 ppm	4.19 ppm	0.71 - 4.19 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.

## 2013 DRINKING WATER QUALITY RESULTS

RADIOLOGICAL CONTAMINANTS						
	EPA's MCL	EPA's MCLG	Highest Result	Yearly Range	Violation	Source
Alpha Emitters	15 pCi/L	0 pCi/L	3.5 pCi/L	0 - 3.5 pCi/L	No	Erosion of natural deposits
Beta Emitters	50 pCi/L*	0 pCi/L	17.5 pCi/L	0.84 - 17.5 pCi/L	No	Decay of natural and man-made deposits
Combined Radium 226 & 228	5 pCi/L	0 pCi/L	1.73 pCi/L	0 - 1.73 pCi/L	No	Erosion of natural deposits
Combined Uranium	30 µg/L	0 µg/L	0 µg/L	0 - 0 µg/L	No	Erosion of natural deposits

NOTE: The state allows us to monitor for some contaminants less than once per year because the concentration of these contaminants does not change frequently. Required monitoring conducted in 2011.

\*The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

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%	25 - 45%	25 - 45%	n/a	Naturally present in the environment.
Percent of Removal Achieved	20 - 65%	21 - 59%	28 - 67%	No	
Number of Quarters out of Compliance	0	0	0		

PWD achieved TOC removal requirements in all quarters of 2013 at all WTPs. Compliance is based on a running annual average computed quarterly.

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	0.100 NTU	0.101 NTU	0.070 NTU	No	

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. PWD continuously operates and monitors water quality from a total of 160 filters at three drinking water treatment plants. In calendar year 2013, on one occasion, continuous on-line turbidity monitoring was interrupted on one of our filters and therefore we cannot be sure of the quality of the drinking water from this filter during the interruption. On 4/15/2013, Filter #6 at the Queen Lane Plant was found in service without turbidity monitoring for a period of 59 hours and 51 minutes. The monitoring interruption was caused when the filter sample supply to the turbidity meter was accidentally closed off by a contractor working adjacent to the filter, creating an artificial steady turbidity reading. During this single filter monitoring interruption, the combination flow from the plant filters at the Queen Lane Plant was continuously sampled and monitored with no change in turbidity levels. No water quality emergency occurred due to the monitoring interruption, and this notice is for informational purposes only.

## 2013 DRINKING WATER QUALITY RESULTS

DISINFECTION BY-PRODUCTS					
	Highest Level Allowed (EPA's MCL) - One Year Average	Running Annual Average 2013*	System Wide Range of Results	Violation	Source
Total Trihalomethanes (TTHMs)	80 ppb	51 ppb	13 - 143 ppb	No	By-product of drinking water disinfection
Total Haloacetic Acids (THAAs)	60 ppb	46 ppb	13 - 136 ppb	No	By-product of drinking water disinfection

\*Monitoring is conducted at 16 locations throughout the City of Philadelphia. This result is the highest locational running annual average in 2013.

UNREGULATED CONTAMINANT MONITORING (UCMR)			
Chemical	Testing Period	Average	Range
1, 4 dioxane	5/8/13 - 11/5/13	0.11 ppb	0 - 0.23 ppb
Chlorate	5/8/13 - 11/5/13	314.94 ppb	170 - 503 ppb
Chromium VI	5/8/13 - 11/5/13	0.40 ppb	0.22 - 0.75 ppb
Molybdenum	5/8/13 - 11/5/13	0.15 ppb	0 - 1.4 ppb
Strontium	5/8/13 - 11/5/13	152.07 ppb	73.1 - 215 ppb
Testosterone	5/8/13 - 10/24/13	0.03 ppt	0 - 0.19 ppt

In 2013, 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 EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. For more information concerning UCMR, visit these websites: <http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/basicinformation.cfm> or <http://www.drinktap.org/home/water-information/water-quality/ucmr3.aspx>

UNREGULATED CONTAMINANTS NOT DETECTED AT ANY OF THE SAMPLING LOCATIONS:
bromochloromethane (Halon 1011), bromomethane, 1,3-butadiene, chlorodifluoromethane (HCFC -22), chloromethane, 1,1-dichloroethane, 1,2,3-trichloropropane, cobalt, vanadium, perfluorobutane sulfonic acid (PFBS), perfluoroheptanoic acid (PFHpA), perfluorohexane sulfonic acid (PFHxS), perfluorononanoic acid (PFNA), perfluorooctane sulfonic acid (PFOS), perfluorooctanoic acid (PFOA), 4-androstene-3,17-dione, equilin, 17-B-estradiol, estriol, estrone, 17-a-ethynylestradiol



## ADDITIONAL INFORMATION

Parameters listed on this page 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)	23 ppm	42 ppm	39 ppm
Average (mg in 8 oz. glass of water)	5 mg	10 mg	9 mg
Range (ppm)	18 - 45 ppm	30 - 98 ppm	25 - 84 ppm
Range (mg in 8 oz. glass of water)	4 - 11 mg	7 - 23 mg	5 - 20 mg

HARDNESS IN TAP WATER			
	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Average	93 ppm or 5 gpg	143 ppm or 8 gpg	163 ppm or 10 gpg
Minimum	74 ppm or 4 gpg	113 ppm or 7 gpg	122 ppm or 7 gpg
Maximum	118 ppm or 7 gpg	181 ppm or 11 gpg	202 ppm or 12 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	41 ppm	68 ppm	70 ppm
Minimum	26 ppm	47 ppm	46 ppm
Maximum	86 ppm	93 ppm	90 ppm



## GLOSSARY

**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.

**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.

**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

## EXPLORE WATER IN OUR WORLD AT THE FAIRMOUNT WATER WORKS!

**The Fairmount Water Works (FWW) has grown since its opening in 2003.** Continuing the legacy of the historic Fairmount Water Works, the FWW has become the premier urban watershed education center and is recognized by the Pennsylvania Department of Environmental Protection as The Delaware River Basin's Official Watershed Education Center and as a Gateway Center for the Schuylkill River National and State Heritage Area.

With more than 450,000 visitors to date, the Fairmount Water Works has become the destination for innovative water and watershed education programming in the Delaware Valley. Water in Our World is the overarching theme that unites the exhibits at the FWW.



### School Programs

Students of all ages come to learn about water, one of the most important issues of the 21<sup>st</sup> century, through these many exciting lessons:

- Water In Our World
- Land and Water: A Delicate Balance
- From Street to Stream: Slow the Flow
- Building as Machine: Water for the City
- Seeing is Believing: A Drop in the Bucket
- Green City, Clean Waters: Following Nature's Lead
- Global Water Action: Engineering a 21<sup>st</sup> Century Solution

### Public Programs

Speakers and public events featuring artists, writers and environmental professionals who share our passion for water bring lively and thought-provoking topics to the FWW.

**Architectural Walking and Bus Tours:** We offer weekend tours led by seasoned Philadelphia Tour Developer Ken Hinde. (fee based)

**Special Tours:** We offer a variety of themed programs for Questors, Alumni organizations, tour groups, engineering and public health professionals and other organizations. (fee based)

### Family Programs

Science Saturdays are fun hands-on activities that meld science and art in our laboratory. We test water, explore the wondrous beauty of diatoms, identify leaves and more. Open to all ages Saturday afternoons from 2:00 to 4:00 pm.

Pop Up Science means hands-on activities that meld science, technology, engineering, art/architecture and math throughout the facility. Open to all ages Saturdays from 10:00 am to noon.

**Lifelong Learning:** We celebrate the United Nations' World Water Day, Earth Day, Drinking Water Week, the Spring Shad Run and more. In addition, our collaboration with the Mayor's Office of Sustainability is helping Philadelphia reach its goal of being the nation's greenest City.

### Visit Us Soon!

The FWW is located at 640 Water Works Drive, nestled between Boat House Row and the Philadelphia Museum of Art. Hours are Tuesday through Saturday, 10:00 am to 5:00 pm, and Sunday from 1:00 pm to 5:00 pm. Closed on Mondays and City holidays. Admission is free.

Support our educational efforts! Make a donation to "The Fund for the Water Works—IC"

The FWW is ADA accessible. To schedule classroom tours or to check out FWW's Saturday Family Programs, Pop-Up activities, or Speakers and public events, please visit our website: [www.fairmountworks.com](http://www.fairmountworks.com).

# Soak It Up! Adoption

## A Grant Opportunity for Your Local Civic Organization

In collaboration with the Pennsylvania Environmental Council (PEC), the Philadelphia Water Department (PWD) is piloting a new grant program — Soak It Up! Adoption. As PWD continues to expand the *Green City, Clean Waters* program, we are continually looking to partner with Philadelphia-based civic organizations to help implement, maintain and share knowledge about green stormwater infrastructure.

Recipients of a \$5,000 Soak It Up! Adoption grant assume responsibility for the care of one or more green stormwater infrastructure sites. Responsibilities include helping to make sure that the site is litter free and that the surface of inlets and overflow drains are free of leaves and other debris. Beyond helping with monitoring and aesthetic maintenance, participants are responsible for tracking and reporting to PWD on both the amount and frequency of litter and debris removal from the site.

Because of their unique ability to be built into neighborhoods, many people don't realize what green stormwater tools are or how they benefit their communities. This is why we need you! By adopting one or more green stormwater tools you are not only helping us maintain these systems, you are serving as a model for your community.

Learn more at: [www.phillywatersheds.org/adoption](http://www.phillywatersheds.org/adoption)



## Connect with PWD

The collage features three main components:

- Twitter Profile:** Philadelphia Water Department (@PhillyH2O) with 1,520 tweets, 495 following, and 2,203 followers. A tweet from @JonasMcVitas thanks PWD for faster service.
- Facebook Page:** Philadelphia Water Department with 469 likes and 28 talking about this. The profile picture shows a large green water treatment tank.
- Watersheds Blog:** A post from Jan 15, 2014, titled "Philadelphia's Green Infrastructure a Standout among Cities" by Lucas Stream. The post includes a photo of a park and a "PHILLY WATER'S BEST FRIEND SPOKESDOG COMPETITOR" graphic.

## CLEAN WATER BEGINS AND ENDS WITH YOU

**Always recycle or dispose of unwanted household hazardous wastes properly.** Don't pour motor oil, antifreeze or other toxic materials down storm drains. Water that enters our storm drains often flows directly to our local streams and rivers. So, don't pollute! Recycle these household hazardous materials safely and help protect our waterways. Also, 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.

### 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.

### Getting Involved

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](http://www.phila.gov/water), or see Table 2 on page 23.

### How to contact us

You can write to us at:  
Philadelphia Water Department  
Aramark Tower  
1101 Market Street, 3rd Floor  
Philadelphia, PA 19107-2994

You can call our Customer Information Hotline at 215-685-6300.

### Important Telephone Numbers and Internet Addresses

#### Philadelphia Water Department

215-685-6300

<http://www.phila.gov/water>

#### Delaware River and Schuylkill River Source Water Assessments

[http://www.phillywatersheds.org/](http://www.phillywatersheds.org/what_were_doing/documents_and_data/watershed_plans_reports)

[what\\_were\\_doing/documents\\_and\\_data/watershed\\_plans\\_reports](http://www.phillywatersheds.org/what_were_doing/documents_and_data/watershed_plans_reports)

#### Schuylkill Action Network

<http://www.schuylkillwaters.org>

#### Philadelphia river and watershed information

<http://www.phillywatersheds.org>

#### RiverCast

<http://www.phillyrivercast.org>

#### Fairmount Water Works

215-685-0723

[www.fairmountworks.com](http://www.fairmountworks.com)

#### Philadelphia Streets Department

215-686-5560

<http://www.philadelphiastreet.com>

#### U.S Environmental Protection Agency (Safe Drinking Water Hotline)

800-426-4791

<http://www.water.epa.gov/drink/hotline/index.html>

**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	484-250-5900
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 Types	Phone	Website
Friends of the Pennypack	A, C, E, P, T	215-934-PARK	<a href="http://www.friendsofpennypackpark.org">www.friendsofpennypackpark.org</a>
Friends of the Wissahickon	A, C, E, P, T	215-247-0417	<a href="http://www.fow.org">http://www.fow.org</a>
Friends of Fox Chase Farms	A, C, E, P	215-728-7900	<a href="http://www.foxchasefarm.org">http://www.foxchasefarm.org</a>
Friends of the Manayunk Canal	A, C, E, P, T	215-466-4587	<a href="http://www.manayunkcanal.org">http://www.manayunkcanal.org</a>
Schuylkill Environmental Education Center	A, B, C, E, P, T	215-482-7300	<a href="http://www.schuylkillcenter.org">http://www.schuylkillcenter.org</a>
Partnership for the Delaware Estuary	A, B, C, E, P, S, T	1-800-445-4935	<a href="http://www.delawareestuary.org">http://www.delawareestuary.org</a>
Environmental Alliance for Senior Involvement	A, C, E, P, T	203-779-0024	<a href="http://www.easi.org">http://www.easi.org</a>
Philadelphia Canoe Club	R, F, T	215-487-9674	<a href="http://www.philacanoec.org">http://www.philacanoec.org</a>
Friends of Fairmount Fish Ladder	F	215-683-3608	email: <a href="mailto:epac99@aol.com">epac99@aol.com</a>
Wissahickon Restoration Volunteers	A, C, E, P, T	215-951-0330 x2101	<a href="http://wissahickonrestorationvolunteers.org">http://wissahickonrestorationvolunteers.org</a>
Wissahickon Valley Watershed Association	A, C, E, P, T	215-646-8866	<a href="http://www.wvwa.org">http://www.wvwa.org</a>
Lower Merion Conservancy	A, C, E, P, T	610-645-9030	<a href="http://www.lmconservancy.org">http://www.lmconservancy.org</a>
Schuylkill Action Network	A, B, C, E, L, P, T	800-445-4935 x109	<a href="http://www.schuylkillwaters.org">http://www.schuylkillwaters.org</a>
Schuylkill Banks	B, E, L	215-222-6030	<a href="http://www.schuylkillbanks.org">http://www.schuylkillbanks.org</a>
Senior Environment Corps	A, C, E, P, T	215-848-7722	<a href="http://www.centerinthepark.org/prog-sec.html">http://www.centerinthepark.org/prog-sec.html</a>
Tookany/Tacony-Frankford (TTF) Watershed Partnership	A, C, E, P, T	215-844-8100	<a href="http://ttfwatershed.org/">http://ttfwatershed.org/</a>
U.S. Water Alliance	A, B, E	202-223-2299	<a href="http://www.uswateralliance.org">www.uswateralliance.org</a>

**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

## SCHUYLKILL ACTION NETWORK (SAN)

### THE SAN PROVIDES:

The Schuylkill Action Network (SAN) was established as a permanent watershed-wide organization charged with identifying problems and prioritizing projects and funding sources to bring about real improvement in water quality throughout the Schuylkill River watershed. The SAN was formed in 2003 by the USEPA, PADEP, Delaware River Basin Commission, Partnership for the Delaware Estuary, and the Philadelphia Water Department. Currently, there are approximately 350 SAN members representing 170 government agencies, academic institutions, non-profit organizations and other watershed stakeholders.

Over \$3 million in funds were awarded for SAN priority projects in 2013 from federal, state, local and private sources. With the power to transcend regulatory and jurisdictional boundaries, the SAN supported land protection efforts, and addressed pollution from agriculture, abandoned mine drainage and stormwater throughout the entire Schuylkill River watershed.

**Land Protection:** SAN Watershed Land Protection projects promote and implement activities that lead to the conservation of the highest priority lands for drinking water protection.

- Developed an implementation plan for the Schuylkill Highland region in Berks and Chester County through the William Penn Foundation Delaware Watershed Initiative
- Completed four land transaction cost assistance projects, supporting the protection of 300 acres of high priority watershed land

**Agriculture:** SAN Agriculture projects are designed to prevent or treat excessive loading of nutrients and contaminated stormwater runoff to drinking water sources.

- Secured \$1,000,000 of designated funding for the Maiden Creek Watershed for agricultural restoration work through NRCS National Water Quality Initiative
- Completed implementation plans for the Maiden, Tulpehocken, and Upper Perkiomen Creek watersheds through the William Penn Foundation Delaware Watershed Initiative

- Installed nine manure storage facilities
- Added eight acres of riparian buffer
- Made six barnyard repairs
- Installed two stream crossings
- Wrote 80 conservation plans

**Abandoned Mine Drainage (AMD):** The upper watershed is impacted by polluted water seeping from abandoned coal mines that discharge iron, manganese and aluminum to the Schuylkill River. Projects completed in 2013 represent a total investment of nearly \$2 million from SAN funds and project partners:

- Completed Mary D Borehole Treatment System
- Upgraded Bell Colliery Phase III treatment system
- Wrote Big Creek Conservation Plan
- Completed West Branch Phase II design to reduce inflow into the mine pool
- Concluded Oak Hill Borehole Feasibility Study
- Completed Sharp Mountain Reclamation Project

**Stormwater:** SAN Stormwater projects are designed to reduce the volume and velocity, and improve the quality, of stormwater runoff on priority areas in the Schuylkill Watershed. Seven stormwater management projects completed on school campuses throughout the watershed:

- The Montessori School rain garden
- Upper Perkiomen High School riparian buffer
- Cook Wissahickon School meadow
- East Norriton Middle School rain garden, meadow, stream restoration and riparian buffer
- Schuylkill Elementary School rain garden
- Robeson Elementary Center basin naturalization, tree planting and de-paving
- Kutztown Middle School tree planting

For more information on the Schuylkill Action Network, please visit [www.schuylkillwaters.org](http://www.schuylkillwaters.org).

## SCHUYLKILL AND DELAWARE RIVER SOURCE WATER PROTECTION PLANS



If you would like to receive a copy of the source water assessment summaries, or would like to know how to get involved in protecting your water supply or watershed, please call the Philadelphia Water Department at 215-685-6300, visit Table 2 on page 23 of this report, or go to [http://www.phillywatersheds.org/what\\_were\\_doing/documents\\_and\\_data/watershed\\_plans\\_reports](http://www.phillywatersheds.org/what_were_doing/documents_and_data/watershed_plans_reports).

The Schuylkill and Delaware River Source Water Protection Plans provide a comprehensive framework for implementing a watershed-wide effort to improve source water quality and quantity. The plans prioritize and outline several approaches to reduce sources of contamination to Philadelphia's raw water supply. PWD has made exceptional progress accomplishing these goals. PWD has prioritized land for permanent protection, established a regional partnership in the Schuylkill River Watershed and advocates for policies to protect and preserve our source waters and forested lands. PWD also collaborates with the Commonwealth of Pennsylvania to ensure regulations are enforced for wastewater treatment plants and industries that discharge upstream of Philadelphia.

Much progress has been made addressing potential threats to our water supply within Philadelphia's own boundaries, including storm drain markings, improved buffers in Fairmount Park, a goose deterrent program at a number of Philadelphia schools and parks, and education about proper disposal of unused pharmaceuticals.

In recent years, the Source Water Protection Program has conducted research to continue to improve PWD's knowledge of potential concerns to Philadelphia's water supplies. This research is used to further define our watershed protection priorities. Recent studies include an analysis of flows needed to protect PWD's drinking water intakes on both the Schuylkill and the Delaware Rivers; evaluating upstream development

policies and activities to ensure continued protection of our drinking water supply; co-hosting a workshop with field experts to follow the one-year comprehensive watershed characterization and monitoring program evaluating the presence of Iodine-131 in the water supply completed in 2012; and tracking of major sources of human infectious pathogens such as *Cryptosporidium*. In 2013, PWD completed its first year of implementation of a 5-year Watershed Control Plan to reduce *Cryptosporidium* in the Schuylkill River watershed. The Watershed Control Plan helps ensure PWD compliance with the EPA's Long-Term 2 Enhanced Surface Water Treatment Rule at the Queen Lane Drinking Water Treatment Plant.

In the last year, PWD has also made significant progress toward upgrading, expanding and improving upon the Delaware Valley Early Warning System (EWS), a mass communication network used to notify water suppliers and industrial users throughout the watershed of any spills or other water quality concerns via email and telephone. PWD is continually developing and improving this system, most recently incorporating new mapping technologies and a tidal spill trajectory tool into the web portal. These upgrades allow subscribers to pinpoint the location of the spill with a higher degree of accuracy and better predict the spill's transport in the tidal Delaware River.



PROFESSIONALISM

QUALITY

SERVICE

Philadelphia Water Department  
1101 Market Street  
Philadelphia, PA 19107  
215.685.6300  
[www.phila.gov/water](http://www.phila.gov/water)