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# PHILADELPHIA WATER

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# DEPARTMENT

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# 2001 DRINKING

# WATER

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# QUALITY REPORT

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PWD is an active  
and proud member of:

American Water  
Works Association

American Water Works  
Association Research Foundation

Partnership for Safe Water

American Public Works Association

Association of Metropolitan  
Water Agencies

Association of Metropolitan  
Sewerage Agencies

Water Environment Federation

Water Environment Research  
Foundation



Philadelphia's water is safe and healthy to drink for most people. For people with special health concerns, please see information on page 10.



**The Philadelphia Water Department** (PWD) is pleased to present our 2001 Water Quality Report. The good news is – your tap water is top quality. This report provides our customers with a summary of where Philadelphia's drinking water comes from, how it is treated and the results of water quality monitoring performed by us on a daily basis. The U.S. Environmental Protection Agency (EPA) requires all water utilities to produce and distribute water quality reports on an annual basis. This report, published in April 2002, includes water quality information for the 2001 calendar year.

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.

We have consistently performed better than all drinking water standards developed by the EPA to protect public health. In fact, all of Philadelphia's drinking water plants were among the first in the nation to receive the EPA Director's Award in 1998 for meeting standards for excellence established under the Partnership for Safe Water program. How do we do this? We use proven treatment practices at our water treatment plants and we participate in groundbreaking research while keeping water rates among the lowest in the region. Our goal is to make our customers feel good about drinking the recommended eight glasses of water every day.

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## **Where does Philadelphia's drinking water come from?**

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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 270 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. 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 West River 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.

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## **How do we treat the water so you can drink it?**

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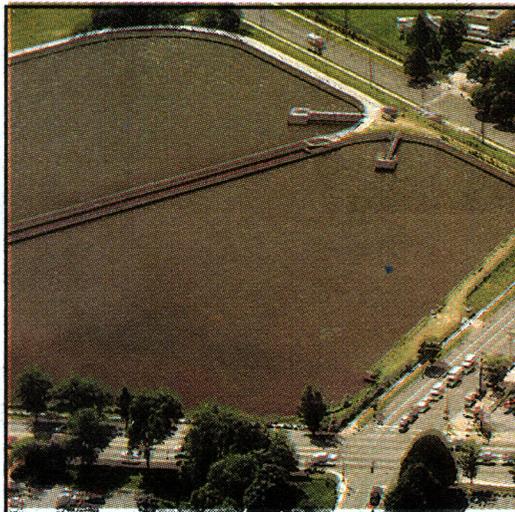
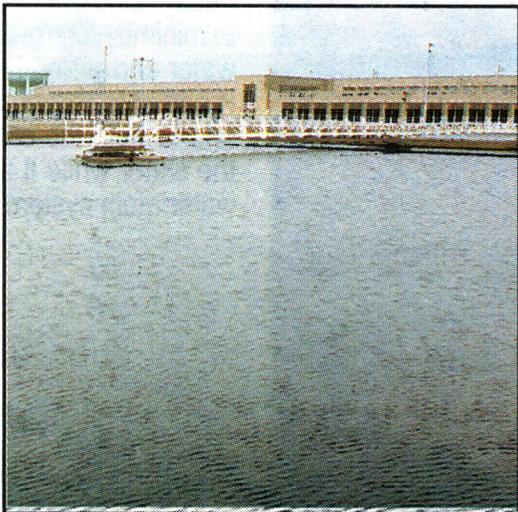
Like the majority of water utilities in the U.S., we use a multi-step treatment process at all three of our drinking water treatment plants. The Water Treatment Process diagram provides a brief description of drinking water treatment in Philadelphia. See page four.

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## **Why is chlorine used to disinfect the drinking water?**

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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. 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 tap.

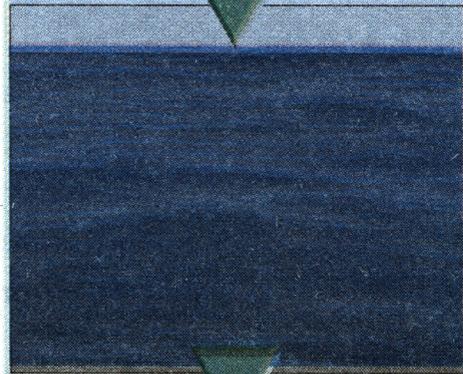


# Water Treatment

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## Natural Settling

Water is stored in reservoirs or basins after it has been pumped from the river to allow sediments to settle.



## Disinfection

Chlorine is added to kill disease-causing organisms.

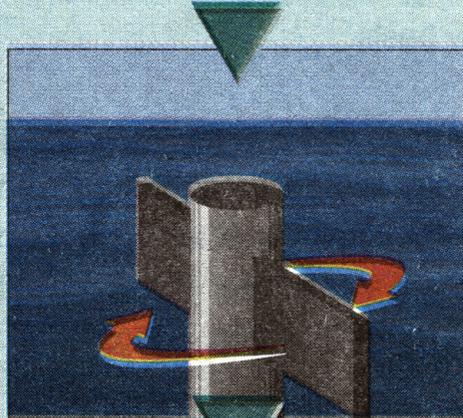
2



## Coagulation

The river water is "coagulated." Chemicals are added to the water to cause smaller particles in water to join together. This makes them heavier so that they will settle to the bottom of the basin.

3-4



5

## Flocculation

The water is mixed to make sure the added chemicals are well blended and react with all of the smaller particles. The particles combine to form "floc" which settle to the bottom of the basin.

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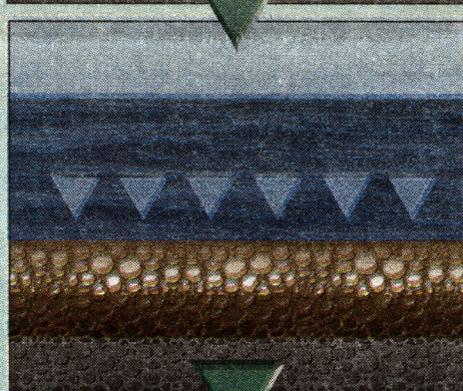
## Sedimentation

The newly joined particles or "floc" settle by gravity and are removed from the bottom of the mixing tanks.



## Filtration

The water is pushed through filters, which remove finer particles still in the water for additional purification.



## Final Treatment

Fluoride is added to help prevent tooth decay. Zinc orthophosphate is added to minimize corrosion activity between water and piping materials. Ammonia is added to reduce chlorine-like tastes and to help the chlorine to persist in the water while it travels through the water main system.



Distribution

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# Water Supply Districts

## How do we test the water to assure its high quality?

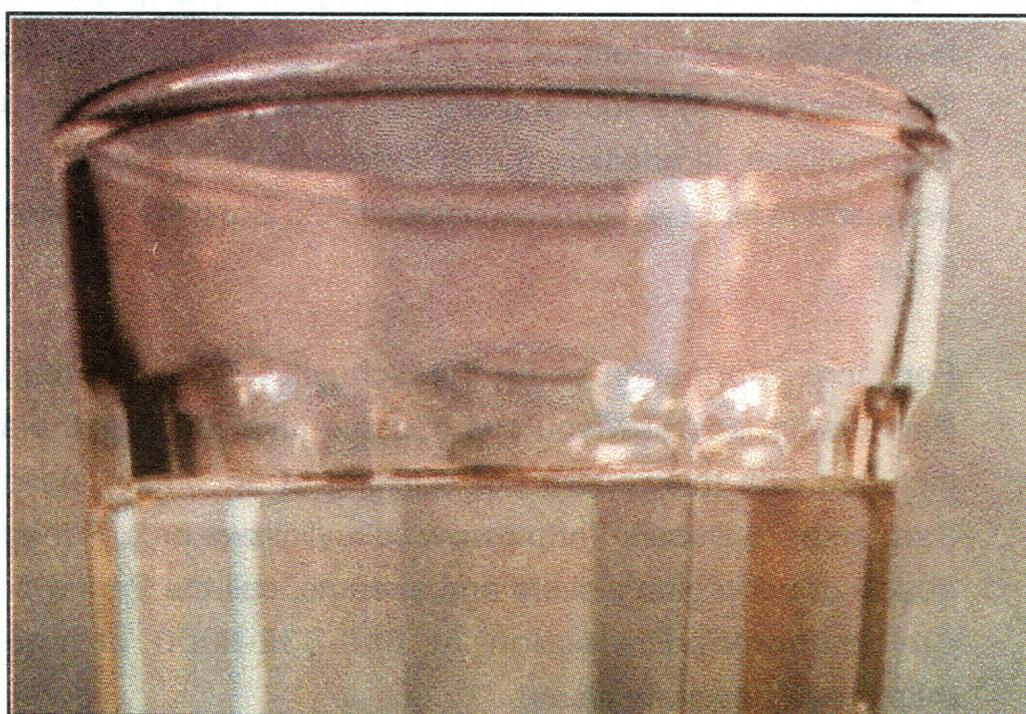
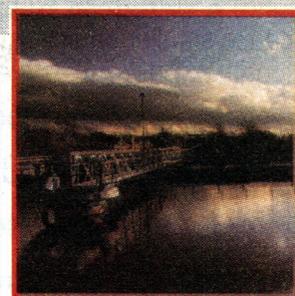
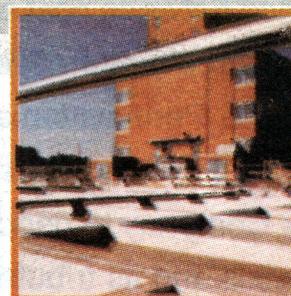
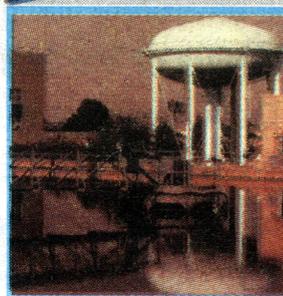
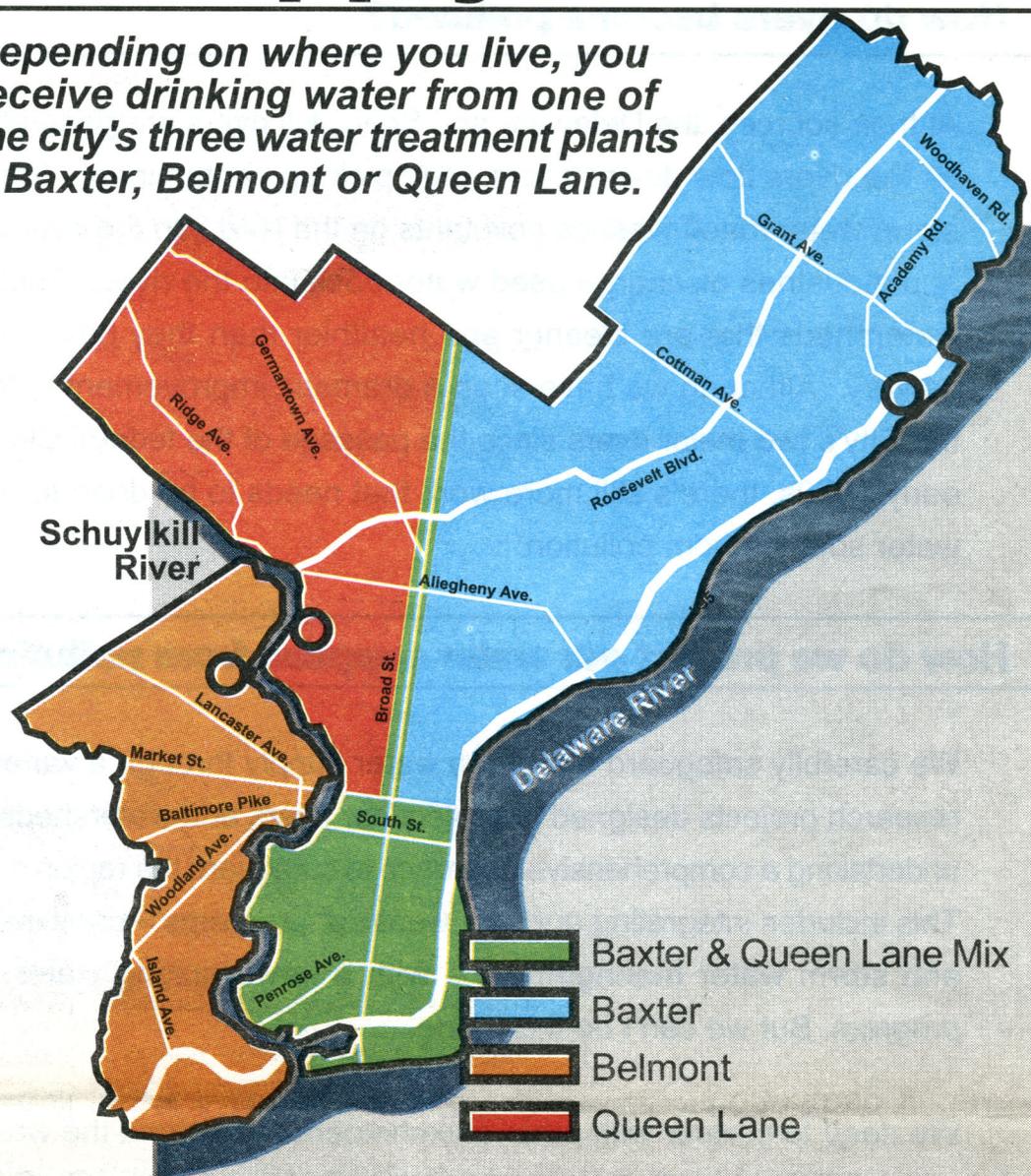
We perform more than 350,000 tests annually at our three drinking water treatment plants to make sure the treatment processes are working as expected. In addition, our scientists, engineers and technicians analyze thousands of samples of tap water each year at our sophisticated testing laboratory. This water is collected from city reservoirs and from more than 65 locations throughout Philadelphia.

## How do drinking water sources become polluted?

Across the nation, sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water (such as rain and melting snow) travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

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

Depending on where you live, you receive drinking water from one of the city's three water treatment plants – Baxter, Belmont or Queen Lane.



## How do rivers become polluted?

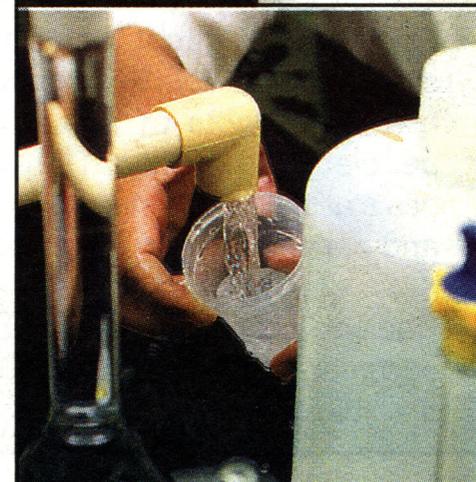
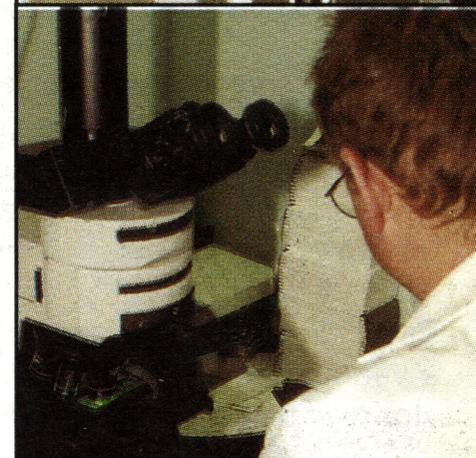
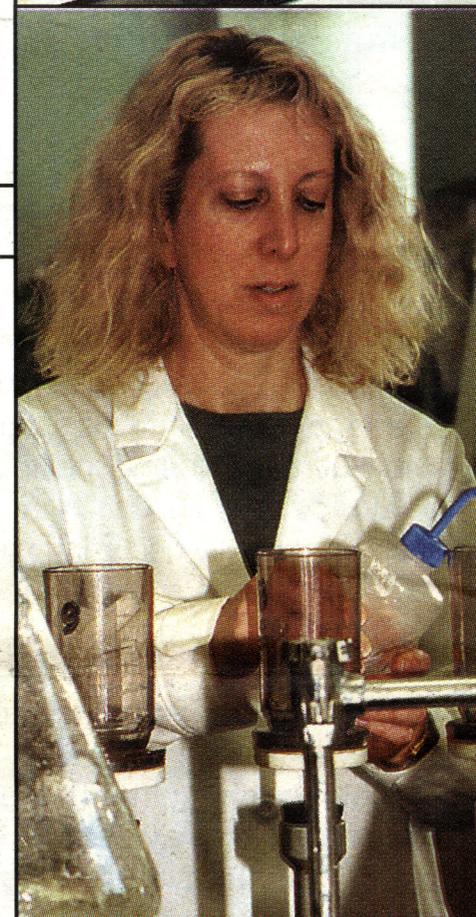
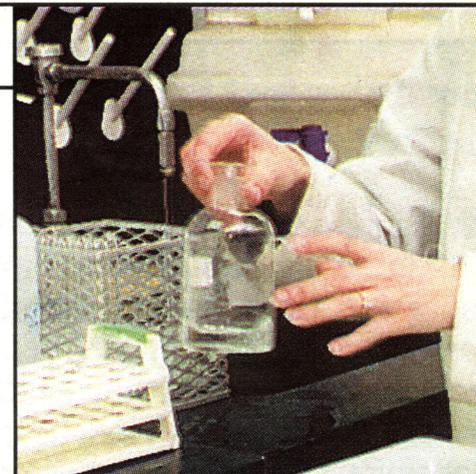
At their sources, the Delaware and Schuylkill rivers are generally clean rivers. But as the rivers flow downstream, they pick up contaminants from many sources – storm water runoff washes pollutants on the land into the rivers, and communities and industries discharge used water back into the rivers. 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's still more work that needs to be done to protect our drinking water sources from pollution.

## How do we protect our water supplies from pollution?

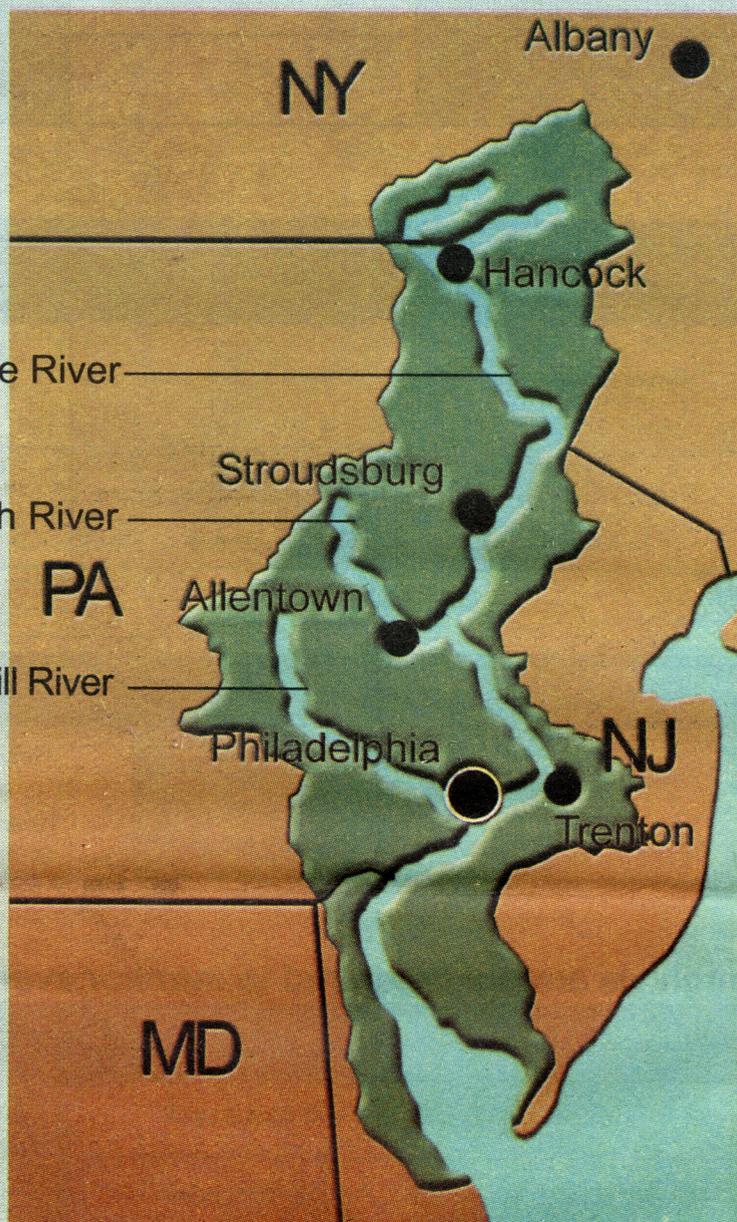
We carefully safeguard our urban water supply through a variety of practices and research projects designed to protect our rivers and watersheds. Currently, we are undertaking a comprehensive approach to safeguard the region's water environment. This includes integrating our "wet weather" programs – combined sewer overflows and storm water management – with a new drinking water source protection program. But we can't do this alone.

We need to partner with other stakeholders throughout the watershed to achieve a sensible balance between cost and environmental benefit. One of our programs has included a source water assessment of the Schuylkill River. Funded in part by a grant from the Pennsylvania Department of Environmental Protection, we have partnered with the Philadelphia Suburban Water Company and the Pennsylvania American Water Company to perform a source water assessment of water intakes along the Schuylkill and its tributaries. The study has assessed how susceptible the Schuylkill River watershed is to pollution. The assessment details the major issues within the watershed that threaten the quality of the drinking water supply. The river is a major source of drinking water for the public served by these three water utilities. In addition, the Philadelphia Water Department is conducting an assessment for seven surface water intakes along the tidal section of the Delaware River.

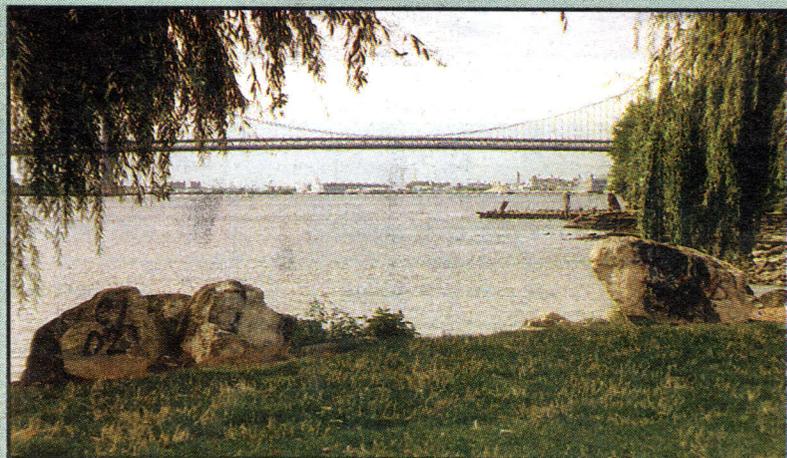
For more information about the Schuylkill River Source Water Assessment Partnership, and how you can become involved, see the special Supplement included with this report. For a listing of upcoming meeting dates, visit the Partnership's website (<http://www.schuylkillswa.org>). For information about the quality of our region's rivers and streams, call the Pennsylvania Department of Environmental Protection at 610-832-6000 or check their website (<http://www.dep.state.pa.us>).



# Delaware 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.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency has regulations which limit the amount of certain contaminants in water provided by water suppliers. The Food and Drug Administration establishes limits for contaminants in bottled water which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of 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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791) or from their website (<http://www.epa.gov/safewater>).

## What do we look for?

In addition to the contaminants that appear in our charts, we look for over 100 other contaminants that were not found at reportable levels. These include: arsenic, antimony, beryllium, cyanide, chromium, thallium, cadmium, mercury, nickel, selenium, benzene, carbon tetrachloride, p-dichlorobenzene, 1,2-dichloroethane, trichloroethylene, 1,1,1-trichloroethane, 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, total xylenes, chlorobenzene, o-dichlorobenzene, c-1,2-dichloroethylene, t-1,2-dichloroethylene, 1,2-dichloropropane, ethyl benzene, styrene, tetrachloroethylene, di(2-ethylhexyl)adipate, endothall, oxamyl, pichloram, benzo(a)pyrene,alachlor, carbofuran, chlordane, dibromochloropropane, ethylene dibromide, lindane, methoxychlor, 1-1-dichloroethylene, atrazine, di(2-ethylhexyl) phthalate and simazine.

## Taste and Odor

We also test for aluminum, chloride, color, iron, manganese, silver, pH, sulfate, total dissolved solids, and zinc to ensure that tap water meets all water quality taste and odor guidelines.

## Waived Requirements

The Pennsylvania Department of Environmental Protection has waived requirements to test for the following elements as they are not expected to occur in drinking water in this area (although we still test for these periodically): nitrite, asbestos, dalapon, dinoseb, dioxin, diquat, endrin, glyphosate, hexachlorobenzene, 2,4-D, PCBs, toxaphene, 2,4,5-TP, heptachlor, heptachlor epoxide and vinyl chloride. Radon is waived, as it is associated with groundwater. Radium is tested for only if other radiological elements exceed an action level.

In 2000, EPA revised the regulations for monitoring unregulated contaminants. The purpose of monitoring for unregulated contaminants in drinking water is to provide data to support the EPA's decision concerning whether or not to regulate these contaminants in the future. In 2001, PWD conducted limited monitoring under this revised unregulated contaminant monitoring regulation (UCMR). The following contaminants were tested but not found at reportable levels: 2,4 dinitrotoluene, DCPA mono and DCPA di acid, 4,4' - DDE, EPTC, Molinate, MTBE, nitrobenzene, terbacil, acetochlor, and perchlorate.

# 2001 DRINKING WATER QUALITY

## Metals - Tested at Customers' Taps - Testing is done every 3 years. Last tests were done in 1999.

	EPA's Action Level for representative sampling of customer homes	Ideal Goal (EPA's MCLG)	90% of PWD customers' homes were less than	No. of homes considered to have elevated levels	Source
Lead	90% of homes must test less than 15 ppb	0	9 ppb	4 out of 59	Corrosion of household plumbing
Copper	90% of homes must test less than 1.3 ppm	1.3 ppm	0.3 ppm	0	Corrosion of household plumbing

## Disinfection Byproducts in Tap Water

	Highest Level Allowed (EPA MCL) One Year Average	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average	Source
Total Trihalomethanes (TTHMs)	100 ppb	47 ppb Range of individual test results: 28 - 68 ppb	65 ppb Range of individual test results: 34 - 126 ppb	52 ppb Range of individual test results: 28 - 99 ppb	Byproduct of drinking water chlorination
Total Haloacetic Acids (THAAs) (as of 2002)	60 ppb	37 ppb Range of individual test results: 19 - 55 ppb	37 ppb Range of individual test results: 21 - 67 ppb	30 ppb Range of individual test results: 18 - 51 ppb	Byproduct of drinking water chlorination

## Bacteria in Tap Water

	Level Allowed (EPA MCL)	Ideal Goal (EPA's MCLG)	Highest Monthly Result	Source
Total Coliform Bacteria	Presence of coliform bacteria in 5% or less of more than 360 monthly samples	0	Highest % of positive samples: 0.88%	Naturally present in the environment  Their presence indicates potential contamination

NOTE: None of the samples with Total Coliforms tested positive for E. Coli.

## Other Chemicals in Tap Water - PWD monitors annually although we are only required to monitor every nine years.

	Highest Level Allowed (EPA MCL)	Ideal Goal (EPA MCLG)	Highest Results	Range of Test Results for the Year	Source
Nitrate	10 ppm	10 ppm	4.1 ppm	1.0 - 4.1 ppm	Fertilizer runoff; sewage
Barium	2 ppm	2 ppm	0.03 ppm	0 - 0.03 ppm	Metal refineries or natural deposits

## Clarity Characteristics - Tested at Water Treatment Plants

Turbidity (measure of clarity)	Baxter WTP	Belmont WTP	Queen Lane WTP	Source
Treatment Technique Requirement	95% of samples must be at or below 0.50 ntu	95% of samples must be at or below 0.50 ntu	95% of samples must be at or below 0.50 ntu	Soil runoff; river sediment
Highest Single Value for the Year	0.080 ntu	0.083 ntu	0.071 ntu	Soil runoff; river sediment

NOTE: PWD achieved turbidity limits 100% at all times tested.

	Baxter WTP	Belmont WTP	Queen Lane WTP
Hardness (as Calcium Carbonate)	Annual Average part per million or grain per gallon	108 ppm or 6 grains	184 ppm or 11 grains
	Annual Minimum part per million or grain per gallon	70 ppm or 4 grains	136 ppm or 8 grains
	Annual Maximum part per million or grain per gallon	128 ppm or 8 grains	251 ppm or 15 grains
Alkalinity (as Calcium Carbonate)	Annual Average	45 ppm	71 ppm
	Annual Minimum	25 ppm	52 ppm
	Annual Maximum	56 ppm	95 ppm

## Other Chemicals in Tap Water

Chemical	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Sodium	18 ppm or 4 mg per 8 oz. glass of water  Range of individual test results: 13 - 30 ppm or 3 - 7 mg per 8 oz. glass of water	31 ppm or 7 mg per 8 oz. glass of water  Range of individual test results: 18 - 49 ppm or 4 - 12 mg per 8 oz. glass of water	38 ppm or 9 mg per 8 oz. glass of water  Range of individual test results: 25 - 53 ppm or 6 - 13 mg per 8 oz. glass of water

NOTE: We conducted monitoring for sodium throughout the year, although federal regulations do not require it.

## Total Chlorine Residual

(Over 400 samples collected throughout the city every month)

Total Chlorine in Tap Water	EPA Maximum Residual Disinfectant Level	Range of Highest Levels Detected at Taps
	4.0 ppm	1.7 - 2 ppm

## Radioactive Contaminants

Radioactive Contaminants	Level Allowed (EPA MCL)	Ideal Goal (EPA's MCLG)	Level Detected	Source
Gross beta	50 pCi/l	0	4.79 pCi/l	Decay of natural and man-made deposits

EPA considers 50 pCi/l to be the level of concern for beta particles. In May 1999, we tested two samples for gross alpha, gross beta, tritium and strontium 90 from two locations in our distribution system. One sample represented treated Delaware water and the other sample represented treated Schuylkill water. All results were below detection except a value of 4.79 pCi/l for gross beta for the treated Schuylkill water. This value is just above the EPA's method detection limit.

## Volatile and Synthetic Organic Chemicals (VOC and SOC)

Chemical	Level Allowed (EPA MCL)	Ideal Goal (EPA's MCLG)	Highest Result	Range of Test Results	Source
Toluene	1000 ppb	1000 ppb	51 ppb	0 - 51 ppb	The Belmont plant experienced a brief chemical spill in the Schuylkill River during the first quarter of 2001. It is discharged from petroleum factories.
Dichloromethane	5 ppb	0 ppb	0.6 ppb	0 - 0.6 ppb	One sample from the Baxter plant was positive for dichloromethane. It is a discharge of pharmaceutical and chemical industries in the river.
Vinyl Chloride	2 ppb	0 ppb	1.1 ppb	0 - 1.1 ppb	One sample from each treatment plant during the last quarter of 2001 was found to have vinyl chloride, which comes from PVC plastic and plastic industry discharges to the river.
Hexachlorocyclopentadiene	50 ppb	50 ppb	0.02 ppb	0 - 0.02 ppb	One sample from the Baxter plant was positive. It is discharged from chemical factories.
Penta-chlorophenol	1 ppb	0 ppb	0.016 ppb	0 - 0.016 ppb	One sample from the Baxter plant was positive. It is discharged from wood preservatives.

Listed above are our Drinking Water Quality Results for 2001. All results are better than the recommended federal levels designed to protect public health. We are pleased to report that we did not have any drinking water violations for 2001. In keeping with our long-standing unblemished record, we continue to be free of violations since the Safe Drinking Water Act was implemented more than twenty-five years ago.

By reporting these results in the tables above, we are meeting a requirement of the EPA. Please see the glossary for definitions of abbreviations used in the tables.

Some contaminants may pose a health risk at certain levels. Others, such as turbidity, have no health effects. 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.

# GLOSSARY

### Action Level

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which 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 process.

### E. Coli

Human and animal fecal waste.

### 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.

### 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).

### ppb - part per billion

One part per billion is equivalent to one green apple in a barrel with 999,999,999 red apples.

### ppm - part per million

One part per million is equivalent to one green apple in a barrel with 999,999 red apples.

### SOC - Synthetic Organic Chemical

Organic compounds, such as pesticides and herbicides, that are commercially made.

### Total Coliform

Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present.

### THAAs - Total Haloacetic Acids

A group of chemicals called disinfection byproducts, which form during chlorination. They will be regulated in 2002.

### TOC - Total Organic Carbon

A measure of the carbon content of organic matter. The measure provides an indication of how much organic material in the water could potentially react with chlorine to form THAAs and TTHMs.

### TTHMs - Total Trihalomethanes

A group of chemicals called disinfection byproducts, which form during chlorination. TTHMs form when natural organic matter in the rivers, e.g., leaves and algae, decompose and combine chemically with the chlorine added for disinfection. Levels of TTHMs vary seasonally.

### 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 how we remove particles that cannot be seen by the human eye.

### VOC - Volatile Organic Chemical

Organic compounds that include gases and volatile liquids.

### WTP - Water Treatment Plant

## 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. Environmental Protection Agency/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.

## Lead in Drinking Water

The Philadelphia Water Department has a permit with the Pennsylvania Department of Environmental Protection for operating under optimized corrosion control. Under this permit, the Water Department maintains the pH of water between 7.0 and 7.8 and maintains the amount of orthophosphate at greater than 0.4 mg as phosphorus.

Although water in our distribution system does not contain lead, you need to be aware of the possibility that lead materials in your home plumbing could leach into your drinking water. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels in your home may be higher than levels in other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. In the meantime, flush your tap for 30 seconds to two minutes before using tap water to get fresh water from the City's water mains. Additional information is available from the Environmental Protection Agency's Safe Drinking Water Hotline 800-426-4791.

## Research and Monitoring for *Cryptosporidium* and *Giardia*

*Cryptosporidium* and *Giardia* are microscopic organisms found in surface water throughout the U.S. They are found in animal wastes and sewage. They can be washed into rivers and streams when it rains. When ingested, they can result in diarrhea, fever, nausea and abdominal cramps. However, these are also symptoms of many intestinal diseases caused by bacteria, viruses or parasites. *Cryptosporidium* and *Giardia* cannot be diagnosed by symptoms alone. Most healthy individuals can overcome such illnesses within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

Most disease causing organisms found in water can be eliminated by using chlorine. However, *Cryptosporidium* is resistant to chlorine. The best defense against these organisms is an effective water treatment process; most importantly, filtration. We look at turbidity to determine how well our filters are performing. Turbidity has no health effect. However, turbidity can interfere with disinfection and provide a medium for microbial growth. It may indicate the presence of disease-causing organisms. That's why it's important to us to ensure that our filters are working at their best.

Tiny particles – particles the same size as Cryptosporidium and smaller than particles visible to the human eye – are being successfully removed from our water.

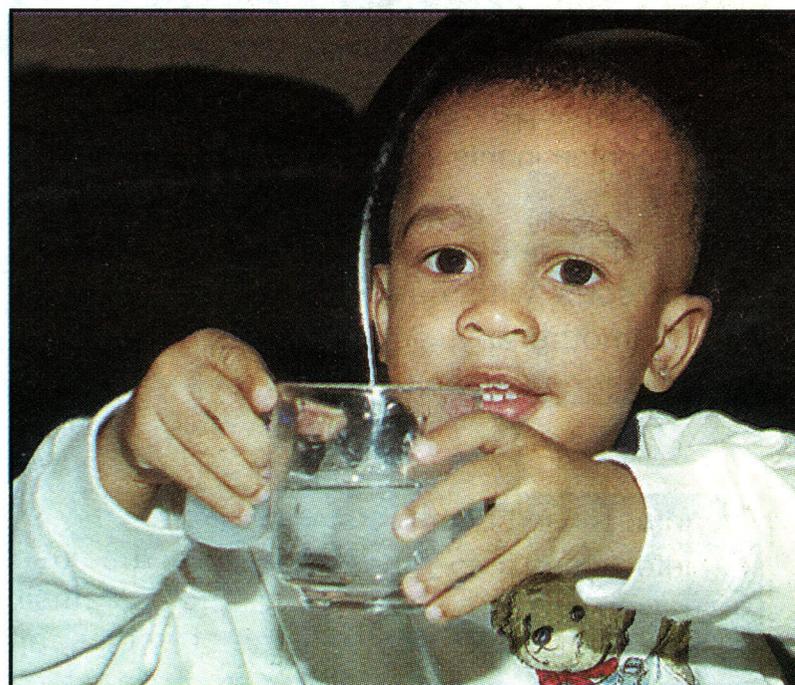
The Philadelphia Water Department is one of the nation's leaders in Cryptosporidium research and was one of the first utilities in the U.S. to monitor for the organism. Continual research is being performed by us to discover better testing methods, to determine the sources of these parasites in our rivers, and to ensure that our treatment practices to protect our drinking water are working. In 2001, 58 tests conducted on our treated drinking water detected one Giardia and no Cryptosporidium. Sixty-nine (69) percent of the samples of untreated water taken from the rivers were positive for Giardia and only 27% percent were positive for Cryptosporidium. These tests were conducted on river water samples drawn at our plants' intakes (the locations where we pump the river water to our settling reservoirs). We are also working closely with the Philadelphia Department of Public Health to ensure that our tap water is free of pathogens that can be found in rivers.

### **Partnership for Safe Water**

In January 1996, the Philadelphia Water Department signed an agreement to join the national Partnership for Safe Water, a joint program of the EPA and the drinking water industry. Following Partnership guidelines, we are evaluating each of our treatment plant processes to identify further improvements in practices that are already far more rigorous than required by State or federal law.

For example, we have cut turbidity of the City's finished drinking water significantly. The Partnership for Safe Water program established a goal of less than 0.10 ntu (at all times tested), well below the State's regulatory standard of 0.30 ntu that became effective in January 2002. In 1996, we were meeting this goal at all three of our treatment plants. By 1998, all three plants performed better than the goal set by the Partnership. Today, all three plants continue to lower their ntu levels, achieving a total annual average of 0.06 ntu, which means that we have successfully achieved the turbidity limits 100 percent of all times tested.

***We presently produce drinking water that is eight to ten times better than the national and State standards for turbidity.***



Through our participation in the Partnership for Safe Water, we have surveyed our treatment plants, treatment processes, operating and maintenance procedures, and management oversight practices to identify how we can make improvements to our water system. Many of the recommended improvements have already been made and we are continuing to implement others. These improvements have already helped to enhance our water system's ability to prevent Cryptosporidium, Giardia and other microbial contaminants from entering the treated water.

## Interesting Facts About Philadelphia's Water

### Fluoride

The Philadelphia City health code has required the Water Department to add fluoride to its treated water since 1954. Approximately 1 milligram per liter (mg/L), or 1 part per million (ppm), of fluoride is added, which is the amount recommended by the American Dental Association to provide maximum dental protection.

### Hardness

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. Hardness also affects other water qualities such as its corrosiveness, with soft water being more corrosive.

### Temperature

The temperature of both the Schuylkill and Delaware rivers varies seasonally from approximately 33° to 85° F. The Water Department does not treat the water for temperature.

### Cloudy Water

Aeration is the process which takes place when the water flowing from your tap into your glass appears cloudy. This temporary condition is a result of dissolved air being released from the water and being temporarily suspended in the water in your glass. This most commonly happens in the winter time when the cold water in the water mains is warmed up quickly in household plumbing, thereby encouraging the dissolved air to come out of the water.

## 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 stormdrains. Also, don't flush paint thinners, insect sprays, herbicides and other harmful chemicals 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 over 200 public and community events a year, including presentations made at schools, ongoing educational programs, summer camps conducted at the Fairmount Water Works Interpretive Center, host open houses and other environmental celebrations. We also offer tours of our facilities and the city's watersheds. We greatly benefit from our citizens advisory council which has been working with us over the last few years to improve our communications with our customers. Citizens representing business and industry, education, environmental advocacy, senior citizens, regulatory agencies and civic and community groups have assisted us in developing public information about a variety of topics, including drinking water quality and storm water pollution prevention.

## How to Contact Us

Interested citizens are welcome to attend our Water Quality Education Citizens Advisory Council meetings. Call our Hotline below to confirm the meeting dates, times and locations.

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.

You can e-mail us at [waterquality@phila.gov](mailto:waterquality@phila.gov).

### Important Telephone Numbers and Internet Addresses

Philadelphia Water Department  
215-685-6300 <http://www.phila.gov/water>

Philadelphia Streets Department  
215-686-5560 <http://www.phila.gov/streets>

U.S. Environmental Protection Agency  
(Safe Drinking Water Hotline)  
800-426-4791 <http://www.epa.gov/safewater>

PA Department of Environmental Protection  
610-832-6000 <http://www.dep.state.pa.us>

Schuylkill River Source Water Assessment  
<http://www.schuylkillswa.org>

# A Special Supplement to our 2001 Water Quality Report

## Source Water Assessments

### Overview

As part of the requirements of the 1996 Safe Drinking Water Act Reauthorization, the Pennsylvania Department of Environmental Protection has been conducting assessments of all potentially significant sources of contamination to all public drinking water sources in Pennsylvania.



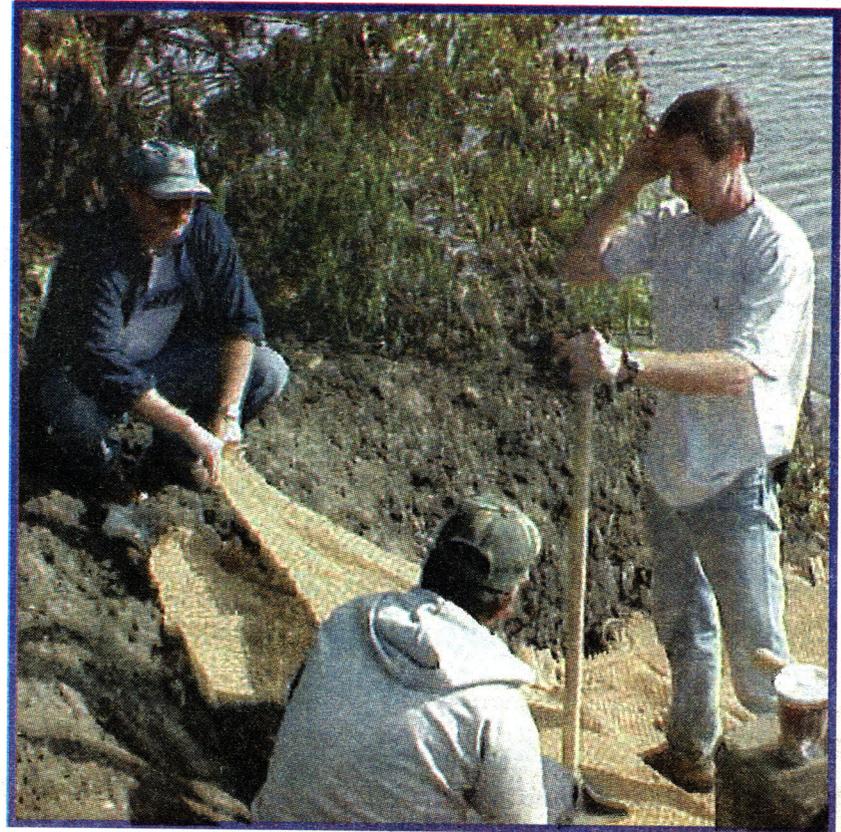
The Philadelphia Water Department has prepared the following information to support local and State efforts to protect the quality of the City of Philadelphia's drinking water sources.

The information in this summary pertains to the water supply areas for the Philadelphia Water Department's Belmont, Queen Lane and Baxter Water Treatment Plants. These assessments are for the raw (untreated river) water only. For water quality information on our treated "tap" water, please see our 2001 Water Quality Report.

### Source Water Assessment for the Belmont Water Treatment Plant

The Belmont Water Treatment Plant provides treated water that comes from the Schuylkill River in Fairmount Park. The State drinking water program through a source water assessment report has found that this water supply is potentially most susceptible to challenges caused by upstream discharges of treated and untreated sewage, polluted runoff from urban areas and agricultural lands, transportation accidents and spills, and acid mine drainage. Most of these potential sources are located watershed-wide, but acid mine drainage originates over 100 miles upriver near the source of the Schuylkill River in Schuylkill County.

Historically, the Philadelphia Water Department has developed and maintained emergency response plans to address accidents and spills that could potentially impact our water supply.



Recently, we established a Source Water Protection Program that is working with upstream partners such as watershed organizations, regulatory agencies, planning commissions, municipalities, water suppliers, and farmers to prevent declines in water quality throughout the entire 2,000 square-mile watershed to keep our water supply as clean as possible. It is important for us to work with these upstream organizations because their work has positive benefits for our water supply.

If you would like to receive a copy of this source water assessment summary 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. You can also visit our web site at <http://www.phila.gov/water> or see Table 1 at the end of this section for more information.

### Source Water Assessment for the Queen Lane Water Treatment Plant

The Queen Lane Water Treatment Plant provides treated water that comes from the Schuylkill River in Fairmount Park. The State drinking water program through a source water assessment report has found that this water supply is potentially most susceptible to challenges caused by upstream discharges of treated and untreated sewage, polluted runoff from urban areas and agricultural lands, transportation accidents and spills, and acid mine drainage. Most of these potential sources are located watershed-wide, but acid mine drainage originates over 100 miles upriver near the source of the Schuylkill River in Schuylkill County. Much closer to Philadelphia, the Wissahickon Creek was identified as an area that requires special attention from potential sources of pollution due to its potential impacts on source water quality at the Queen Lane intake.

Historically, the Philadelphia Water Department has developed and maintained emergency response plans to address accidents and spills that could potentially impact our water supply.

Recently, we established a Source Water Protection Program that is working with upstream partners such as watershed organizations, regulatory agencies, planning commissions, municipalities, water suppliers, and farmers to prevent declines in water quality throughout the entire 2,000 square-mile watershed to keep our water supply as clean as possible. It is important for us to work with these upstream organizations because their work has positive benefits for our water supply.

If you would like to receive a copy of this source water assessment summary 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. You can also visit our web site at <http://www.phila.gov/water> or see Table 1 at the end of this section for more information.

## Source Water Assessment for the Baxter Water Treatment Plant

The Baxter Water Treatment Plant provides treated water that comes from the Delaware River. The Philadelphia Water Department is currently working with the State drinking water program to identify sources of pollution that could impact the Delaware River and impair our water supply. We will report the results of the Baxter Plant's source water assessment to you in our Source Water Assessment Report next year. In the meantime, we continue to maintain our emergency response plans to address accidents and spills that could potentially impact the water supply.

In addition, we have recently established a Source Water Protection Program that is working with upstream partners such as watershed organizations, regulatory agencies, planning commissions, municipalities, water suppliers, and farmers to prevent declines in water quality throughout the Lower Delaware River Watershed. It is important for us to work with these upstream organizations because their work has positive benefits for our water supply.

If you 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. You can also visit our web site at <http://www.phila.gov/water> or see Table 1 at the end of this section for more information.

**Table 1 – Agencies to Call to Report Various Environmental Situations**

Situations	Agencies	Phone Numbers
Dead Fish	Fish & Boat Commission	717-626-0228
	Fish & Boat Waterways Officer	215-633-7200
	Pennsylvania Department of Environmental Protection	800-541-2050
Illegal Dumping & Related Pollution Activities	Pennsylvania Department of Environmental Protection	800-541-2050
	Philadelphia Environmental Police Unit	215-566-2385
Sewage Spills	Pennsylvania Department of Environmental Protection	610-832-6130
	Pennsylvania Department of Environmental Protection	800-541-2050
	Philadelphia Water Department	215-685-6300
Oil & Gas Spills/Accidents	Pennsylvania Department of Environmental Protection	610-832-6130
	Pennsylvania Department of Environmental Protection	800-541-2050
	Philadelphia Water Department	215-685-6300

**Table 2 – Groups to Contact to Get Involved in Protecting your Local Streams, Rivers, and Water Supply**

Organizations	Activities	Phone Numbers	Web Site Addresses or Email Addresses
Friends of the Pennypack	A, C, E, P, T	215-934-PARK	<a href="http://www.balford.com/fopp">http://www.balford.com/fopp</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.farm.htm">http://www.foxchasefarm.org.farm.htm</a>
Friends of the Tacony	A, C, E, P, T	215-324-8942	<a href="http://www.nlreep.org/pvp.htm">http://www.nlreep.org/pvp.htm</a>
Friends of the Manayunk Canal	A, C, E, P, T	215-483-9238	<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.udel.edu/PDE">http://www.udel.edu/PDE</a>
Environmental Alliance for Senior Involvement	A, C, E, P, T	540-788-3274	<a href="http://www.easi.org">http://www.easi.org</a>
Schuylkill River Development Council	B, E, L	215-985-9393	<a href="http://www.srdc.net/schuylkill">http://www.srdc.net/schuylkill</a>
Philadelphia Canoe Club	R, F, T	215-487-9674	<a href="http://www.philacanoec.org">http://www.philacanoec.org</a>
Friends of the Fairmount Fish Ladder	F	215-742-5112	Email: <a href="mailto:epac99@aol.com">epac99@aol.com</a>
Cobbs Creek Environmental Education Center	A, C, E, P, T	215-685-1900	<a href="http://www.cobbscreek.org">http://www.cobbscreek.org</a>
Wissahickon Restoration Volunteers	A, C, E, P, T	215-342-8394	<a href="http://wissahickon.patrails.org">http://wissahickon.patrails.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>
Philadelphia Water Department's Water Quality Education Citizens Advisory Council	A, E	215-685-6300	<a href="http://www.phila.gov/water">http://www.phila.gov/water</a>

### Legend of Activities

- A – Environmental activism
- B – Business-related protection and education 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 stream bank repair and protection
- R – Rowing, canoeing, and related boating activities
- S – Storm drain stenciling
- T – Water quality testing



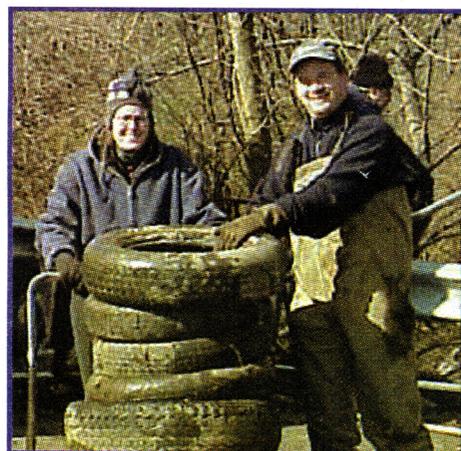
# Residents Develop River Conservation Plan

The first meeting of the Tacony-Frankford River Conservation Plan took place in May at Edison/Fareira High School. Participants shared their hopes and visions for the Tacony-Frankford watershed. Their ideas about parks, recreation centers, Tacony and Frankford creeks, historic and cultural sites, and greening projects are all part of what they want to see captured in the Plan.

The group opened the meeting with water quality testing at the high school's ecological pond. Next, they planted a tree to symbolize the small steps that contribute to the revitalization of a neighborhood and its watershed. Lubov Chubok, a Frankford High School student, received an award for her logo design of the Tookany/Tacony-Frankford Watershed Partnership. Participants then joined in a mapping exercise to mark their interests and concerns in their section of the watershed.

The River Conservation Plan partners include the Frankford Group Ministry, the Pennsylvania Environmental Council, the Heritage Conservancy, the Fairmount Park Commission and the Philadelphia Water Department. The Pennsylvania Department of Conservation and Natural Resources has partially funded the Plan.

Plan neighborhoods include Bridesburg, Cedarbrook, Crescentville, East Falls, East Mt. Airy, Fairhill, Feltonville, Fernrock, Fox Chase, Frankford, Germantown, Harrowgate, Hunting Park, Juniata Park, Lawndale, Logan, Nicetown, Oak Lane, Ogontz, Olney, Rhawnhurst, Richmond, Tioga, West Oak Lane, Westside.



## Volunteers Clean Up Pennypack Creek

The Philadelphia Water Department joined Fairmount Park's Natural Lands Restoration Environmental Education Program (NLREEP), Friends of Pennypack Park, and BJ's Wholesale Club to clean up portions of Pennypack Creek and BJ's stormwater detention basin, which had become magnets for illegal dumping. Volunteers removed

a propane tank, shopping carts, a couch, a large tank, oil containers, oil filters, litter and tires from the creek and basin. BJ's supplied T-shirts, clean-up supplies and refreshments to volunteers. This public-private partnership restored a blighted section of the creek and forged a permanent program to prevent illegal dumping in the creek and basin. Stormwater that is held in the basin eventually flows to the Pennypack Creek, which then flows to the Delaware River.

## Businesses Become Partners

The Philadelphia Water Department, Partnership for the Delaware Estuary and Pennsylvania Department of Environmental Protection welcomed business owners in Chinatown, Roxborough and Chester County to the Clean Water Partners program. The voluntary, non-regulatory program is funded by the Pennsylvania Department of Environmental Protection's Growing Greener Program and the Philadelphia Water Department. It educates businesses how to control stormwater runoff pollution by practicing "good housekeeping." These practices can be very simple: sweeping debris frequently, covering and elevating stored materials, and reducing the use of toxic chemicals. When it rains or when snow melts, stormwater picks up pollutants such as debris, grease, oils and antifreeze as it washes over sidewalks, driveways and roads. Polluted stormwater flows into storm drains. From there, stormwater flows into local creeks. These creeks eventually make their way to the Delaware and Schuylkill rivers.

## Students' Artwork Rises to a New Watermark!

Sixteen budding artists were recognized for their vibrant drawings portraying how stormwater runoff pollutes our streams and rivers. The drawing contest, sponsored by the Philadelphia Water Department and the Partnership for the Delaware Estuary, encourages students to protect their local waterways from pollution and to become active stewards of our water resources. The brightly colored works of art designed by first-place winners are being displayed on buses and trains of our region's mass transit. Sixteen students' masterpieces are featured in a special 15-month calendar entitled, "Clean Water Begins and Ends with You!" The award-winning artists were selected from among nearly 600 entries. Winners received savings bonds for their fine work!

# IMPORTANT: 2001 Water Quality Information

Philadelphia Water Department  
Public Affairs Division  
ARAMARK Tower  
1101 Market Street, 3rd Floor  
Philadelphia, PA 19107-2994



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## EPA Honors PWD: Schuylkill River Source Water Assessment Touted as National Standard

Donald Welsh, EPA regional administrator for Region III presented Estelle Richman, managing director for the City, and Kumar Kishinchand, water commissioner, with a Source Water Protection Award at a ceremony on May 8 at the historic Fairmount Water Works. While bestowing the award, Mr. Welsh noted that the Water Department's employees have set a great example as "we seek to strike an appropriate balance between our needs in the 21<sup>st</sup> century and the timeless needs of the environment."

EPA acknowledged the Philadelphia Water Department's employees and their regional partners for their efforts in conducting a source water assessment of the Schuylkill River Watershed. Thanks to their resourcefulness, EPA recognized their assessment as a standard for utilities nationwide to use when conducting source water assessments.

The Pennsylvania Department of Environmental Protection nominated the Philadelphia Water Department to EPA for the award. EPA presents the award to those utilities or other entities that exemplify good stewardship of a region's natural resources and drinking water supplies through implementation of innovative source water protection programs.