



# 2013 Water Quality Report



Dear WSSC Customer:

Water matters at WSSC, and has for almost a century. Throughout our 95-year history, WSSC's mission has remained constant: provide safe and reliable water to Montgomery and Prince George's counties and return clean water to our environment, all in an ethical, sustainable, and financially responsible manner.

I am pleased to share this year's Water Quality Report with you, where you will see that we have extended our streak of meeting or beating all federal standards for water quality since our establishment in 1918. We're proud of that record, which reflects the dedication and hard work of everyone at WSSC. We work together to bring you safe, clean water, which we test and monitor every day to ensure that we meet or perform better than the Environmental Protection Agency requirements.

At our core, WSSC is a key environmental steward of the region's watershed and its tributaries. In fact, the electronic delivery of this report is a prime example of our many efforts to reduce our impact on the environment. We've reduced the amount of printed copies we produce from 450,000 down to just 5,000—saving trees and money. This is the second year of e-delivery, which is good for our customers, the environment and WSSC. You can find it online at [www.wsscwater.com/wqr](http://www.wsscwater.com/wqr). For those who desire a hard copy, just contact our Communications & Community Relations Office by calling (301) 206-8100 or emailing [communications@wsscwater.com](mailto:communications@wsscwater.com) and we will mail it.

Another new program you can use to help the environment (and your wallet) is our Go Green e-billing service. Learn more and sign up to receive and pay your bill electronically, saving you and WSSC postage and time. Just go to [www.wsscwater.com](http://www.wsscwater.com) and click the Pay Your Bill link to learn more.

Providing safe, clean water to the people of Prince George's and Montgomery counties is a 24/7 commitment. Similarly, our website gives you constant access to information about our work. Find customer tools, educational materials and outreach to students on the value of water and career possibilities—anytime you want it, at [www.wsscwater.com](http://www.wsscwater.com).

We hope that you find the information in the Water Quality Report useful in illustrating our commitment to our mission to provide our community with safe and reliable water, which is life's most precious resource. We are working hard to ensure we will continue to fulfill that mission for generations to come.

Sincerely,  
Jerry N. Johnson, *General Manager/CEO*

## Important Health Information from the U.S. EPA

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 mean that the water poses a health risk.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as cancer patients undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and some elderly and infants, can be particularly at risk for infections. These people should seek advice from their health care providers about drinking water.

EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (1-800-426-4791) or EPA's website at [epa.gov/safewater](http://epa.gov/safewater). More information about contaminants and potential health effects also can be obtained from the EPA hotline or website.

## For More Information



WSSC provides updated information about water quality and other aspects of the service delivery system on our website, [www.wsscwater.com](http://www.wsscwater.com), or customers can call WSSC's testing laboratory at 301-206-7575 for more information. A Spanish translation, previous years' reports, and videos providing additional information are also available at [www.wsscwater.com/wqr](http://www.wsscwater.com/wqr).

The public is invited to a variety of project- and policy-related public hearings and informational workshops throughout the year. Commission meetings are generally held on the third Wednesday of every month, starting at 8:30 a.m. Public hearings on our proposed Capital Improvements Program usually take place in September. Public hearings on the proposed Operating Budget are usually held in early February. Please check our [Public Calendars](#) page as the time approaches.

WSSC provides speakers and tours for schools, homeowner associations and service groups. Also every April we organize numerous public events as a month-long celebration of Earth Day. To request a speaker, a tour, or to obtain times and locations of the public hearings and events, please visit our website or call 301-206-8100.

This report contains very important information about your drinking water. Please find someone to translate it for you, or speak to someone who understands.

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

此报告包含有关您的饮用水的重要信息。请人帮您翻译出来，或请看懂此报告的人将内容说给您听。

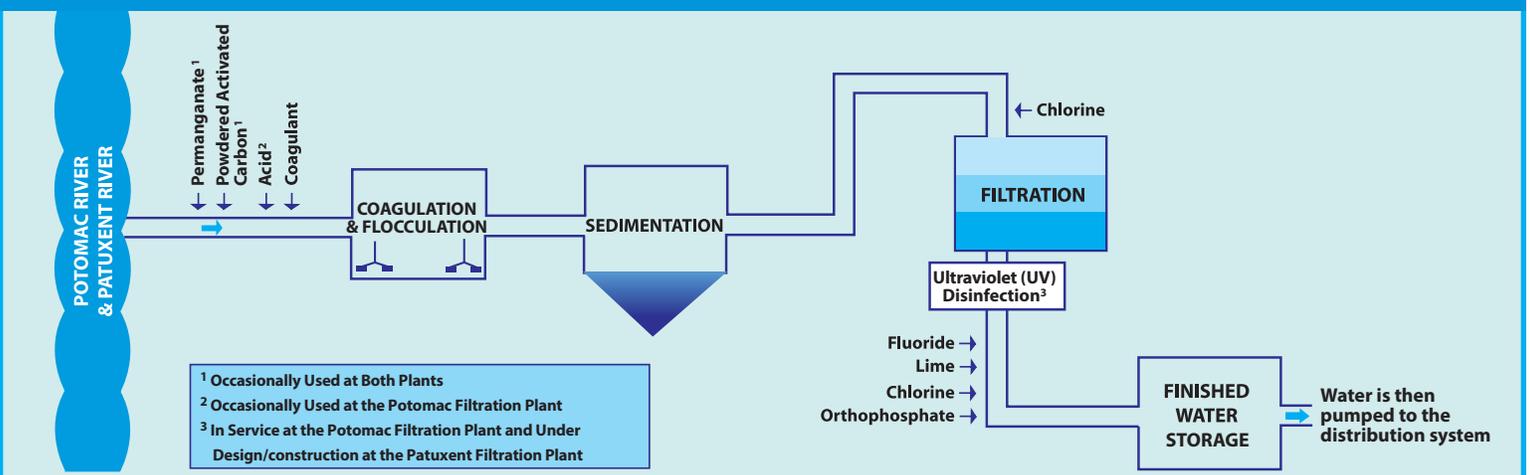
Tài liệu này có tin tức quan trọng về nước uống của quý vị. Hãy nhờ người dịch cho quý vị, hoặc hỏi người nào hiểu tài liệu này.

## Water Quality Data

### DETECTED REGULATED CONTAMINANTS

| SUBSTANCE   | UNITS                | PATUXENT TAP                 |                        | POTOMAC TAP            |                         | MCL (or TT)      | MCLG            | VIOLA-TION? | MAJOR SOURCE IN DRINKING WATER   |
|---|----------------------|------------------------------|------------------------|------------------------|-------------------------|------------------|-----------------|-------------|--|
|   |                      | LEVEL FOUND*                 | RANGE                  | LEVEL FOUND*           | RANGE                   |                  |                 |             |  |
| <b>PHYSICAL</b>                                     |                      |                              |                        |                        |                         |                  |                 |             |  |
| Turbidity   | NTU                  | 0.03                         | 0.02-0.09 <sup>1</sup> | 0.02                   | 0.05 - 0.2 <sup>1</sup> | TT=1 NTU         | n/a             | NO          | Soil runoff  |
|   | % <0.3 NTU           | 100%                         | n/a                    | 100%                   | n/a                     | TT=95% min       | n/a             | NO          |  |
| <b>METALS</b>                                       |                      |                              |                        |                        |                         |                  |                 |             |  |
| Arsenic   | µg/L                 | n/d                          | n/d                    | n/d                    | n/d - <2                | 10               | 0               | NO          | Erosion of natural deposits; runoff from orchards  |
| Barium  | mg/L                 | 0.024                        | 0.018 - 0.032          | 0.033                  | 0.024 - 0.042           | 2                | 2               | NO          | Discharge of drilling wastes & metal refineries; erosion of natural deposits                     |
| Total Chromium                                      | µg/L                 | <2                           | n/d - 2                | <2                     | n/d - 2                 | 100              | 100             | NO          | Discharge from steel & pulp mills; erosion of natural deposits                                   |
| Copper  | mg/L                 | 0.016                        | 0.009 - 0.026          | <0.002                 | n/d - 0.002             | n/a              | n/a             | n/a         | Erosion of natural deposits; algae control treatment chemicals                                   |
| Selenium  | µg/L                 | n/d                          | n/d - <2               | <2                     | n/d - <2                | 50               | 50              | NO          | Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines |
| <b>INORGANICS</b>                                   |                      |                              |                        |                        |                         |                  |                 |             |  |
| Residual Chlorine                                   | mg/L                 | 1.4                          | 0.9 - 1.7              | 1.8                    | 1.0 - 2.6               | TT=>0.2          | n/a             | NO          | Water additive used to control microbes  |
| Fluoride  | mg/L                 | 0.68                         | 0.42 - 0.95            | 0.68                   | <0.2 - 0.82             | 4                | 4               | NO          | Water additive which promotes strong teeth; erosion of natural deposits                          |
| Nitrate   | mg/L                 | 1.1                          | 0.5 - 1.6              | 1.6                    | 0.5 - 2.8               | 10               | 10              | NO          | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits      |
| Nitrite   | mg/L                 | n/d                          | n/d - <0.05            | n/d                    | n/d - <0.05             | 1                | 1               | NO          | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits      |
| <b>DISINFECTION BYPRODUCT (DBP) PRECURSOR</b>       |                      |                              |                        |                        |                         |                  |                 |             |  |
| Total Organic Carbon                                | n/a                  | met TT requirements          |                        | met TT requirements    |                         | TT               | n/a             | NO          | Naturally present in the environment   |
| <b>PESTICIDES &amp; SYNTHETIC ORGANIC CHEMICALS</b> |                      |                              |                        |                        |                         |                  |                 |             |  |
| Atrazine  | µg/L                 | n/d                          | n/d - <1               | n/d                    | n/d - <1                | 3                | 3               | NO          | Runoff from herbicide used on row crops  |
| Dalapon   | µg/L                 | n/d                          | n/d - <1               | n/d                    | n/d                     | 200              | 200             | NO          | Runoff from herbicide used on rights of way  |
| Di(2-ethylhexyl) phthalate                          | µg/L                 | n/d                          | n/d - <2               | n/d                    | n/d - <2                | 6                | 0               | NO          | Discharge from rubber & chemical factories   |
| Pentachlorophenol (PCP)                             | µg/L                 | 0.2                          | n/d - <0.8             | n/d                    | n/d                     | 1                | 0               | NO          | Discharge from wood preserving factories   |
| <b>RADIONUCLIDES</b>                                |                      |                              |                        |                        |                         |                  |                 |             |  |
| Gross Alpha   | pCi/L                | <2                           | <2 - <2                | <2                     | <2 - <2                 | 15               | 0               | NO          | Erosion of natural deposits  |
| Gross Beta  | pCi/L                | 4.1                          | <4 - 4.4               | <4                     | <2 - 4.1                | 50 <sup>2</sup>  | 0               | NO          | Decay of natural and man-made deposits   |
| Radium 228  | pCi/L                | <1                           | <0.8 - <1              | <1                     | <0.8 - <1               | 5 <sup>3</sup>   | 0 <sup>3</sup>  | NO          | Erosion of natural deposits  |
| SUBSTANCE   | UNITS                | CUSTOMER TAP <sup>4</sup>    |                        |                        |                         | AL               | MCLG            | VIOLA-TION? | MAJOR SOURCE IN DRINKING WATER   |
|   |                      | 90th PERCENTILE <sup>5</sup> |                        | # of SITES ABOVE AL    |                         |                  |                 |             |  |
| <b>METALS</b>                                       |                      |                              |                        |                        |                         |                  |                 |             |  |
| Copper  | mg/L                 | 0.133                        |                        | 0 sample               |                         | 1.3              | 1.3             | NO          | Corrosion of household plumbing systems  |
| Lead  | µg/L                 | <2                           |                        | 1 sample               |                         | 15               | 0               | NO          | Corrosion of household plumbing systems  |
| SUBSTANCE   | UNITS                | DISTRIBUTION SYSTEM          |                        |                        |                         | MCL (or MRDL)    | MCLG (or MRDLG) | VIOLA-TION? | MAJOR SOURCE IN DRINKING WATER   |
|   |                      | LEVEL FOUND *                |                        | RANGE                  |                         |                  |                 |             |  |
| <b>BACTERIOLOGICAL</b>                              |                      |                              |                        |                        |                         |                  |                 |             |  |
| Total Coliform                                      | % Positive per month | 0.61                         |                        | 0 - 1.31               |                         | 5                | 0               | NO          | Naturally present in the environment   |
| No. of E. coli Positive Routine Samples             | Count                | 0                            |                        | 0 - 0                  |                         | n/a              | n/a             | n/a         | Human and animal fecal waste   |
| No. of E. coli Positive Repeat Samples              | Count                | 0                            |                        | 0 - 0                  |                         | 0                | 0               | NO          |  |
| <b>DISINFECTANT &amp; DBPs</b>                      |                      |                              |                        |                        |                         |                  |                 |             |  |
| Residual Chlorine                                   | mg/L                 | 1.23 <sup>6</sup>            |                        | n/d <sup>7</sup> - 2.8 |                         | 4 <sup>8</sup>   | 4 <sup>8</sup>  | NO          | Water additive used to control microbes  |
| Haloacetic Acids (HAA5)                             | µg/L                 | 37.3 <sup>9</sup>            |                        | 7.4 - 70.6             |                         | 60 <sup>10</sup> | n/a             | NO          | By-product of drinking water chlorination  |
| Total Trihalomethanes (TTHMs)                       | µg/L                 | 61.3 <sup>9</sup>            |                        | 11.7 - 102             |                         | 80 <sup>10</sup> | n/a             | NO          | By-product of drinking water chlorination  |

## WSSC Drinking Water Treatment Process



Water Quality Data (cont'd)

DETECTED UNREGULATED CONTAMINANTS

| SUBSTANCE   | UNITS | PATUXENT TAP        |               | POTOMAC TAP  |               | MCL | MCLG | VIOLA-TION? | MAJOR SOURCE IN DRINKING WATER |
|---|-------|---------------------|---------------|--------------|---------------|-----|------|-------------|--------------------------------|
|   |       | LEVEL FOUND*        | RANGE         | LEVEL FOUND* | RANGE         |     |      |             |                                |
| <b>METALS</b>                                       |       |                     |               |              |               |     |      |             |                                |
| Hexavalent Chromium <sup>11</sup>                   | µg/L  | 0.034               | 0.024 - 0.046 | 0.110        | 0.048 - 0.160 | n/a | n/a  | n/a         |                                |
| Strontium <sup>11</sup>                             | µg/L  | 111                 | 62 - 160      | 62           | 62 - 62       | n/a | n/a  | n/a         |                                |
| Vanadium <sup>11</sup>                              | µg/L  | n/d                 | n/d           | 0.51         | 0.38 - 0.64   | n/a | n/a  | n/a         |                                |
| <b>INORGANICS</b>                                   |       |                     |               |              |               |     |      |             |                                |
| Chlorate <sup>11</sup>                              | µg/L  | n/d                 | n/d           | 23           | n/d - 46      | n/a | n/a  | n/a         |                                |
| <b>PESTICIDES &amp; SYNTHETIC ORGANIC CHEMICALS</b> |       |                     |               |              |               |     |      |             |                                |
| Dicamba   | µg/L  | 1                   | n/d - <4      | n/d          | n/d           | n/a | n/a  | n/a         |                                |
| <b>VOLATILE ORGANIC CHEMICALS</b>                   |       |                     |               |              |               |     |      |             |                                |
| p-Isopropyltoluene                                  | µg/L  | n/d                 | n/d - <0.5    | n/d          | n/d           | n/a | n/a  | n/a         |                                |
| <b>RADIONUCLIDES</b>                                |       |                     |               |              |               |     |      |             |                                |
| Tritium   | pCi/L | <100                | <100 - <100   | <100         | <100 - <100   | n/a | n/a  | n/a         |                                |
| SUBSTANCE   | UNITS | DISTRIBUTION SYSTEM |               |              |               | MCL | MCLG | VIOLA-TION? | MAJOR SOURCE IN DRINKING WATER |
|   |       | LEVEL FOUND *       |               | RANGE        |               |     |      |             |                                |
| <b>METALS</b>                                       |       |                     |               |              |               |     |      |             |                                |
| Total Chromium <sup>11</sup>                        | µg/L  | <0.2                |               | n/d - 0.34   |               | n/a | n/a  | n/a         |                                |
| Hexavalent Chromium <sup>11</sup>                   | µg/L  | 0.113               |               | 0.051- 0.210 |               | n/a | n/a  | n/a         |                                |
| Strontium <sup>11</sup>                             | µg/L  | 117                 |               | 75 - 170     |               | n/a | n/a  | n/a         |                                |
| Vanadium <sup>11</sup>                              | µg/L  | 0.41                |               | 0.20 - 0.74  |               | n/a | n/a  | n/a         |                                |
| <b>INORGANICS</b>                                   |       |                     |               |              |               |     |      |             |                                |
| Chlorate <sup>11</sup>                              | µg/L  | <20                 |               | n/d - 40     |               | n/a | n/a  | n/a         |                                |

Terms Defined

**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.

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

**AL** - Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**MRDL** - Maximum Residual Disinfectant Level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG** - Maximum Residual Disinfectant Level Goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

**Turbidity** - A measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our treatment process.

**NTU** - Nephelometric Turbidity Unit

**mg/L** - Milligrams per liter, equal to parts per million (ppm). The equivalent of one minute in 2 years or one penny in \$10,000.

**µg/L** - Micrograms per liter, equal to parts per billion (ppb). The equivalent of one minute in 2,000 years or one penny in \$10 million.

**ng/L** - Nanograms per liter, equal to parts per trillion (ppt). The equivalent of one minute in 2,000,000 years or one penny in \$10 billion.

**pCi/L** - Picocuries per liter (a measure of radiation)

**n/d** - Not detected

**n/a** - Not applicable

= Equals

< Less than

\* Based on yearly average except as noted.

1. Filtered water, maximum of measurements taken every 15 minutes.
2. EPA considers 50 pCi/L to be the level of concern for beta particles.
3. The MCL and MCLG apply to combined Radium 226 and 228.
4. Most recent sampling, between June and September 2011.
5. If more than 10% of sites exceed the action level, system is required to take additional steps to control corrosiveness of their water.
6. Highest running annual average (RAA)
7. All samples deemed to have detectable disinfectant residual.
8. Maximum residual disinfectant level (MRDL), the highest level of a disinfectant allowed in drinking water; based on RAA.
9. Highest locational running annual average (LRAA)
10. Maximum contaminant level based on LRAA
11. Unregulated contaminants were monitored in accordance with third cycle of EPA's Unregulated Contaminant Monitoring Rule (UCMR3). For full results and explanations, go to [wsscwater.com/ucmr3](http://wsscwater.com/ucmr3)

Water is treated to EPA standards

As stewards entrusted to provide safe drinking water to our customers, WSSC treats our water to meet or exceed U.S. EPA standards. WSSC drinking water undergoes extensive purification and treatment after it arrives at the plant and before it is sent to the distribution system for delivery to half a million homes and businesses. Our water treatment process includes: coagulation and flocculation (to make small particles and microorganisms in the raw source water adhere to each other); sedimentation (to remove most of those particles and microorganisms); filtration (to remove nearly all the remaining particles and microorganisms); chlorination (for disinfection); lime addition (to minimize the potential for dissolving lead solder used in older homes); and fluoridation (to prevent tooth decay). Orthophosphate is also added to help minimize copper pipe pinhole leaks in home plumbing.

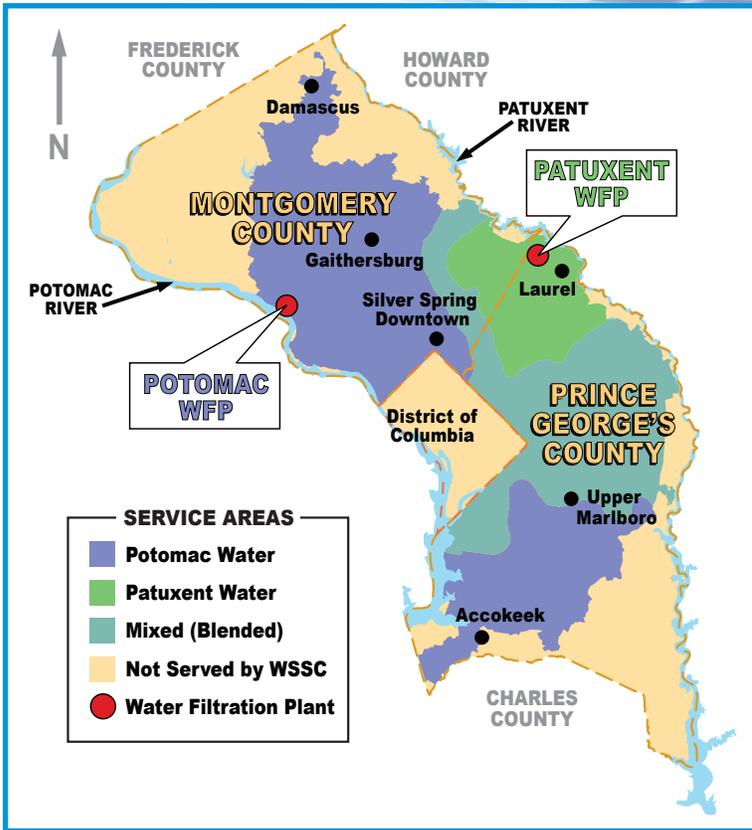
Our Potomac Plant also includes UV disinfection to provide an extra barrier of protection against microbial pathogens such as *Cryptosporidium*. Plans for the UV disinfection upgrade at our Patuxent Plant are underway.

Information on *Cryptosporidium* Health Effects and WSSC Treatment

*Cryptosporidium* is a microbial pathogen found in surface water throughout the U.S.

*Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised adults, infants and small children, and the elderly 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.

Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. While our existing treatment processes meet new EPA requirements for addressing concerns about *Cryptosporidium*, as an extra precaution, we have installed UV disinfection to provide an extra barrier of protection against *Cryptosporidium*.



### Starting at the Source

In 2002 and 2004, WSSC conducted source water assessments in cooperation with the Maryland Department of the Environment (MDE), evaluating the vulnerability of our two drinking water sources (Potomac and Patuxent) to contamination. The reports are available for public review at the main branches of the Montgomery and Prince George's county libraries, or by contacting MDE at 410-537-3714.

Source water from rivers and reservoirs generally picks up contaminants before it reaches water treatment plants. As water travels over the land surface or through the ground on its way to the water body, it dissolves naturally occurring minerals and vegetation/organic matter. It also can pick up pesticides, herbicides and other synthetic/volatile organic chemicals from agricultural land, golf courses, or residential and urban lands. Radioactive contaminants can be naturally occurring or the result of mining activities. Sewage treatment plants and septic systems, as well as animal waste from pets, agricultural livestock and wildlife, may be sources of microbial contaminants. The salts and byproducts from winter road treatments may also be present in source water.

Potential sources of contamination in the Potomac River watershed include runoff from urban and agricultural land uses, and potential spills from highways and petroleum pipelines. Contaminants of particular concern include natural organic matter and disinfection byproduct (DBP) precursors, pathogenic microorganisms (*Cryptosporidium*, *Giardia*, fecal coliform), taste and odor-causing compounds, ammonia, sediment/turbidity and algae.

Potential sources of contamination in the Patuxent Reservoirs watershed include transportation, petroleum pipelines, agriculture, onsite septic systems, developed areas, and minor permitted discharges. Phosphorus runoff from urban/suburban and agricultural land uses is the primary contaminant of concern for this watershed. Sediment/turbidity, DBP precursors, iron, manganese, and pathogenic microorganisms are also concerns.

WSSC works with local agencies to protect the Potomac and Patuxent drinking water supplies, playing key roles in the Potomac Drinking Water Source Protection Partnership and the Patuxent Reservoirs Watershed Protection Group. Partnering with customers and neighbors is crucial to our efforts. If you are interested in learning more about how you can protect your drinking water supplies, please contact us at 301-206-8100.

### Where Does My Water Come From?

The Patuxent and Potomac Rivers are the sources of all the water we filter and process. The source water treated at the Patuxent Water Filtration Plant (WFP) is held in two reservoirs—Triadelphia and T. Howard Duckett (also known as Rocky Gorge)—and is pumped to the plant. The Potomac WFP draws water directly from the Potomac River. The map shows the approximate service areas of both plants. As indicated, some areas receive blended water, processed at both the Patuxent and Potomac WFPs.

### Is My Water Hard or Soft?

Hard water contains more dissolved calcium and magnesium. Potomac water tends to be hard (typically averaging about 120–130 milligrams per liter). Patuxent water is soft (typically averaging about 60–65 milligrams per liter).

### An Informational Statement from EPA on Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. WSSC is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [epa.gov/safewater/lead](http://epa.gov/safewater/lead).

**Washington Suburban Sanitary Commission**

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