



## ***Washington Area Drinking Water Suppliers Test Local Waters***

*District of Columbia  
Bladensburg\*  
Bowie  
College Park  
Frederick  
Frederick County  
Gaithersburg  
Greenbelt  
Montgomery County  
Prince George's County  
Rockville  
Takoma Park  
Alexandria  
Arlington County  
Fairfax  
Fairfax County  
Falls Church  
Loudoun County  
Manassas  
Manassas Park  
Prince William County*

*\*Adjunct member*

Working with regional and national partners, Washington area drinking water suppliers (Fairfax Water, Washington Aqueduct, and Washington Suburban Sanitary Commission) have recently tested the Potomac River, Patuxent River, Occoquan Reservoir, and their treated water for Endocrine Disrupting Compounds (EDCs), Pharmaceuticals, and Personal Care Products (PPCPs).

### *How do you know what to test?*

There are tens of thousands of compounds that are considered EDCs or PPCPs. The water suppliers carefully considered the most prudent use of their resources in researching a suitable list of compounds for testing. They looked at the different influences on the areas watersheds (industrial, agricultural uses, etc.) to determine which compounds were most likely to be present. They then looked at the various treatment processes used by the utilities to determine which compounds might be more resistant to removal through treatment. Finally, they looked at which compounds could be measured in water. Nineteen (19) compounds were chosen to test for in the source and treated waters.

### *What did you find?*

As expected, very, very small amounts of four compounds were detected in the source waters. The amounts were so small they barely met the threshold for detection. As technology advances and compounds are detected at lower and lower levels, it is likely that other compounds will be found as well at extremely low levels.

### *What do the detections mean?*

The truth is that more research is needed to fully understand the implications of very, very small levels of EDCs and PPCPs in water. Research to date shows that there is no indication of human health concern at the levels being found. Your water supplier's primary objective is the protection of public health through the delivery of high-quality drinking water. The regional water suppliers, along with water professionals across the nation, are researching the occurrence of personal care products and pharmaceutical compounds in drinking water supplies and are paying close attention to health effects research in this area. To date, no evidence of human health concerns have been found.

### *What does "very, very small" mean?*

As technology improves, compounds will be able to be detected at smaller and smaller levels. The compounds detected were found at the part per billion and part per trillion levels. The ability to test compounds in water to these minute levels is relatively new. A part per billion is equivalent to one second in 32 years. A part per trillion is equivalent to one second in 32,000 years. To put it another way, a part per billion is equivalent to 1 gallon of water in 1,514 Olympic size-swimming pools. A part per trillion is equivalent to 1 gallon of water in 1,514,570 Olympic-size swimming pools.

What compounds were found in the source waters?

1. Atrazine – a commonly used herbicide for maize products – found at a maximum of 0.9 parts per billion.
2. Carbamazepine – an anti-epileptic medication – found at a maximum of 0.012 parts per billion.
3. Estrone – a natural human hormone – found at 0.9 parts per trillion.
4. Sulfamethoxazole – an antibiotic – found at 0.003 parts per billion.

Were any compounds found in the treated water?

Trace amounts of Atrazine and Carbamazepine were found in the Washington Aqueduct and the Washington Suburban Sanitary Commission treated waters. None of the tested compounds were found in Fairfax Water's treated water. A table including the source and treated water data is attached.

What were the compounds tested during the regional effort?

There were nineteen compounds tested for during this joint regional effort.

Compound Tested	Common Description
17b-estradiol	Natural human hormone
Atrazine	Herbicide
Bisphenol A	Used as an intermediate in manufacture of plastics and resins
Butylbenzyl phthalate	Plasticizer
Caffeine	Stimulant
Carbamazepine	Anti-epileptic pharmaceutical
DEHP [di(2-ethylhexyl)phthalate]	Plasticizer
Dibutyl phthalate	Plasticizer
Estrone	Natural human hormone
Ethinyl estradiol	Synthetic estrogenic pharmaceutical
Ibuprofen	Anti-inflammatory pharmaceutical
Lindane (BHC-gamma)	Insecticide
Linuron	Herbicide
Methoxychlor	Pesticide
Monensin	Antibiotic
Naproxen	Anti-inflammatory pharmaceutical
Nonylphenol	Used as an intermediate in manufacture of chemicals
Octylphenol	Used as an intermediate in manufacture of chemicals
Sulfamethoxazole	Antibacterial antibiotic

*What's next?*

The regional drinking water utilities, along with other water utilities nationally, will continue to work to advance the science in the area of understanding and treating EDCs and PPCPs in water. Examples of this work are found in the bulleted statements below.

- Fairfax Water, the Washington Suburban Sanitary Commission and the Washington Aqueduct, founded the Potomac Partnership to study water quality issues in the Potomac watershed.
- Fairfax Water, the Washington Suburban Sanitary Commission and the Washington Aqueduct, along with many water utilities across the nation, have contributed to and participated with the American Water Works Association Research Foundation (AWWARF) to study endocrine disruptors, personal care product and pharmaceuticals. To date, AWWARF has conducted 21 projects totaling approximately \$4.9 million.
- Fairfax Water, the Washington Suburban Sanitary Commission and the Washington Aqueduct will continue to work with regional and national partners to collaborate their efforts and advance the science regarding these issues.