



Warrington Township

2012 WARRINGTON TOWNSHIP WATER QUALITY REPORT PWSID# 1090070

Este informe contiene información muy importante acerca de su agua potable. Haga que alguien lo traduzca para usted, ó hable con alguien que lo entienda. (This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it.).

Introduction

During 2012, the drinking water provided by Warrington Township's public water system once again **EXCEEDED** all State and Federal water quality standards.

This report presents a summary of the quality of the public drinking water provided by Warrington Township during 2012. We have included details about the sources of water, what it contains, and how the water quality compares to the standards set by the Pennsylvania Department of Environmental Protection (PADEP) and the Environmental Protection Agency (EPA) Safe Drinking Water Act (SDWA). The Warrington Township Board of Supervisors is committed to providing safe and reliable drinking water to our more than 7,400 customers. We feel that this information is important and that an informed customer is a public utility's best ally.

Where Does Your Water Come From

The western portion of the Township, from Folly Road to Upper State Road, and the Bradford Greene development along County Line Road, is served water that the Township purchases directly from the North Wales Water Authority (NWWA). This portion of the Township is underlain by the Locketong geological formation, which does not support the development of large production groundwater wells. The water purchased from NWWA is a surface water supply that comes from the Forest Park Water Treatment Plant located in Chalfont. The Forest Park Water Treatment Plant is a state of the art facility that treats and pumps water delivered from the Point Pleasant pump station located on the Delaware River. The treatment process at Forest Park consists of flocculation, sedimentation, filtration, and pre and post ozone disinfection.

The eastern portion of the Township, from Valley Road to Elbow Lane, is served water from nine wells drilled 300 to 760 feet deep into the Stockton geological formation. The wells are generally located along the Route 611 corridor that bisects the eastern part of the Township. The well water from four of the wells is treated using air strippers to remove organic contaminants. Chlorine is added at all the wells for disinfection prior to water entering the system.

The well water serving the eastern portion of the Township is considered hard (around 15½ grains/gallon) and the pH is generally neutral. Hard water is often indicated by a lack of suds forming when soap is agitated in water and by the formation of limescale in kettles and water heaters. Hard drinking water is generally not harmful to one's health; water softening is commonly used to reduce hard water's adverse effects.

The Township's eastern and western water systems are interconnected. The interconnection is controlled by a valve that allows water into the eastern end in the event of a fire or other emergency. The interconnection is also used as a supplemental source of supply during times of drought or for times when the well supplies are out of service for maintenance reasons. Because of this, eastern end customers can expect to occasionally receive a commingling of water from the western surface supply and the eastern groundwater supply.

Why We Monitor Your Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water 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 before it is treated 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 stormwater 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 agricultural, urban stormwater runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems
- *Radioactive contaminants*, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA and PADEP prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. We treat and monitor our water according to their regulations. FDA and PADEP regulations establish 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 EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Our 2012 Water Monitoring Results

During 2012, Warrington Township conducted over 275 tests for 161 possible drinking water contaminants. Similar testing was also completed by NWWA and the Forest Park Treatment Plant. This arrangement results in duplication of testing, but also provides more quality control.

Tables 1 and 2 summarize the results of monitoring the Western and Eastern systems, respectively, for year 2012. Dozens of other contaminants that were tested for, but not detected, are not listed. Unless otherwise noted, the data presented in the tables is from testing done from January 1, 2012 to December 31, 2012. The PADEP requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of our data, though representative, are more than 1 year old.

Related Information

In 2001, the Township participated in the Unregulated Contaminants Monitoring Rule (UCMR) Program in which suppliers began a 3-year monitoring period for unregulated contaminants, including the gasoline additive MTBE. Although the EPA does not regulate MTBE, the Township recognized the potential threat of MTBE and began voluntarily sampling for it prior to 2001 in each well and at various locations in both the eastern and western distribution systems. MTBE has **never** been detected in the Township's water supply. In 2010, the Township again participated in the UCMR-2 Program in which suppliers began a new 3-year monitoring period for additional unregulated contaminants. The UCMR-2 and its predecessor, the UCMR, were designed to establish data for contaminants listed on EPA's Contaminant Candidate List for which EPA may establish future MCL's.

Warrington Township also samples its water supply annually at all entry points to determine the level of Fluoride present. Fluoride can occur naturally due to erosion of natural deposits. No Fluoride was detected at the Township's entry points. Fluoride may help prevent tooth decay if administered properly to children, but can be harmful in excess. This information may be helpful to you, your pediatrician, or your dentist in determining whether fluoride supplements or treatment is appropriate.

Related to our monitoring efforts, the Township has completed an assessment of the nine groundwater wells that supply the eastern distribution system. The study is part of Pennsylvania's Source Water Assessment and Protection (SWAP) Program. The assessment identified existing and potential sources of contamination located within a one-mile radius of each well and includes a detailed map showing the location of these sites within a half-mile radius of each well. The study will assist us in future land planning to protect our source groundwater supply. The report is available for review at the Warrington Township Water and Sewer Department Office at 852 Easton Road.

Educational Information

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

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. Warrington Township 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 www.epa.gov/safewater/lead.

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 or 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. EPA and the Center 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 at 1-800-426-4791 or visit the EPA website at www.epa.gov/safewater/dwhealth.

For More Information

Warrington Township Water and Sewer Department is staffed with State-certified water operators who work to provide top quality water to every tap. Information about the Township's water system and a full 2012 Water Quality Report prepared by NWWA for their system is available for review at the Warrington Township Water and Sewer Department Office. For more information about your water quality, please contact the Warrington Township Water and Sewer Department Office at (215) 343-1800 or log on to the Township's web site at www.warringtontownship.org.

The Warrington Township Board of Supervisors meets the second and fourth Tuesday of each month at 7:30 p.m. in the Warrington Township Municipal Building at 852 Easton Road. These meetings allow the public to voice any concerns or comments they may have pertaining to the public water or sewer systems. Please feel free to participate in these meetings.

Definitions and Abbreviations

These are the definitions of the terms and abbreviations used in Tables 1 and 2 on the inside of this folder:

- **MCL** (*Maximum Contaminant Level*): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's 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. MCLG's allow for a margin of safety.
- **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 contaminants.
- **n/d** (*non detect*): laboratory analysis indicates that the constituent is not present or below reporting limits.

- **ppm** (*parts per million*): one part per million corresponds to one minute in two years, a single penny in \$10,000, one ounce to 31 tons, or 1 inch in 16 miles.
- **ppb** (*parts per billion*): one part per billion corresponds to one second in 32 years, a single penny in \$10 million, a pinch of salt to 10 tons of potato chips, or 1 inch in 16,000 miles.
- **ppt** (*parts per trillion*): one part per trillion corresponds to one second in 320 centuries, a single penny in \$10 billion, one drop of water in 20 Olympic-size swimming pools, or 1 inch in 16 million miles (a 6-inch leap on a journey to the sun).
- **ppq** (*parts per quadrillion*): one part per quadrillion corresponds to one second in 320,000 centuries, a single penny in \$10 trillion, one drop of water in a container the size of the Empire State Building, or 2 ½ minutes out of the age of the Earth (4.5 billion years).
- **pCi/l** (*picocuries per liter*): picocuries per liter is a measure of the radioactivity of water.
- **NTU** (*Nephelometric Turbidity Unit*): nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- **AL** (*Action Level*): the concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.
- **TT** (*Treatment Technique*): a treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

TABLE 1 - WARRINGTON TOWNSHIP WESTERN SYSTEM 2012 WATER MONITORING

Substance (Unit of Measurement)	Violation YES/NO	Level Detected	Range Detected	MCL	MCLG	Likely source of substance
Microbiological Contaminants:						
Turbidity (NTU)	NO	0.028	0.02 - 0.04	TT	N/A	Soil runoff.
Inorganic Contaminants:						
Barium (ppm)	NO	0.25	0.16 - 0.42	2	2	Erosion of natural deposits
Copper (ppm) ⁴ 2010	NO	0.546	0.093 - 0.886	AL=1.3	1.3	Household plumbing systems
Lead (ppb) ⁴ 2010	NO	3.50	0.210 - 7.90	AL=15	0	Household plumbing systems
Nitrate (as Nitrogen) (ppm)	NO	2.78	0.134 - 4.29	10	10	Runoff from fertilizer use.
Synthetic Organic Contaminants:						
Atrazine	NO	0.025	0 - 0.1	3	3	Runoff from herbicides used on row crops
Volatile Organic Contaminants:	NO	25 contaminants monitored in 2012 with none detected.				
Disinfectants & Disinfection By-products:						
Chlorine Residual (ppm)	NO	0.486	0.10 - 1.21	MRDL=4	MRDLG=4	Water additive used for disinfection
TTHM (total trihalomethanes) (ppb)	NO	21.58	7.51 - 41.8	80	0	By-product of drinking water disinfection
HAA-5 (haloacetic acids five) (ppb)	NO	6.43	0 - 13.1	60	0	By-product of drinking water disinfection
Bromate (ppb)	NO	0.90	0 - 1.90	10	0	By-product of drinking water disinfection
Radioactive Contaminants:						
Gross Alpha (adjusted) (pCi/l) 2011	NO	5.06	0 - 9.48	15	0	Erosion of natural deposits
Combined Radium-226/228 (pCi/l) 2011	NO	1.44	0 - 1.95	5	0	Erosion of natural deposits
Combined Uranium (ppb) 2011	NO	2.75	0.44 - 7.46	30	0	Erosion of natural deposits
Unregulated Contaminant Monitoring Rule:						
N-Nitrosodiethylamine (NDEA) (ppb) 2010	NO	0.0086	0 - 0.0086	N/A	N/A	Byproduct of chemical synthesis and manufacture of rubber

Notes: 1. Monitoring results provided by NWWA unless otherwise noted. 2. All monitoring performed in 2012 unless otherwise noted. 3. Turbidity is a measure of the cloudiness of the water and is a good indicator of the effectiveness of the filtration system. 4. Copper and lead levels represent 90th percentile of homes tested by Warrington Township. None of the homes monitored exceeded the Action Level (AL).

TABLE 2 - WARRINGTON TOWNSHIP EASTERN SYSTEM 2012 WATER MONITORING

Substance (Unit of Measurement)	Violation YES/NO	Level Detected	Range Detected	MCL	MCLG	Likely source of substance
<i>Inorganic Contaminants:</i>						
Arsenic (ppb)	NO	8.75	2.1 - 8.75	10	0	Erosion of natural deposits.
Barium (ppm)	NO	0.481	0.109 - 0.481	2	2	Erosion of natural deposits.
Chromium (ppb)	NO	19.1	1.8 - 19.1	100	100	Erosion of natural deposits.
Copper (ppm) 2010	NO	0.546	0.093 - 0.886	AL=1.3	1.3	Household plumbing systems.
Lead (ppb) 2010	NO	3.50	0.210 - 7.90	AL=15	0	Household plumbing systems.
Mercury (ppb)	NO	0.028	0 - 0.028	2	2	Erosion of natural deposits Landfill & cropland runoff.
Nitrate (as Nitrogen) (ppm)	NO	2.80	0.92 - 2.80	10	10	Runoff from fertilizer use.
Nickel (ppb)	NO	2.1	1.2 - 2.1	100	100	Erosion of natural deposits.
Selenium (ppb)	NO	3.3	1.9 - 3.3	50	50	Erosion of natural deposits.
<i>Synthetic Organic Contaminants:</i>						
Di(2-ethylhexyl)phthalate (ppb)	NO	0.58	0.11 - 1.53	6	0	Discharge from rubber and chemical factories.
Heptachlor (ppt)	NO	110	0 - 110	400	0	Residue of banned pesticide.
Methoxychlor (ppb)	NO	0.06	0 - 0.06	40	40	Runoff from insecticide used on food & livestock.
2,3,7,8-TCDD (Dioxin) (ppq)	NO	10.1	10.1 - 11.1	30	0	Discharge from chemical factories.
<i>Volatile Organic Contaminants:</i>						
1,1-Dichloroethylene (ppb)	NO	0.24	0.16 - 0.30	7	7	Discharge from industrial chemical factories.
1,1-Dichloroethane (ppb)	NO	0.02	0 - 0.11	N/A	N/A	Discharge from metal degreasing sites & factories.
CIS-1,2-Dichloroethene (ppb)	NO	0.07	0 - 0.13	70	70	Discharge from industrial chemical factories.
Carbon Tetrachloride (ppb)	NO	0.11	0 - 0.11	5	0	Discharge from chemical plants & industrial activities.
Trichloroethylene (ppb)	NO	0.098	0 - 0.115	5	0	Discharge from metal degreasing sites.
Tetrachloroethylene (ppb)	NO	0.185	0 - 0.280	5	0	Discharge from factories and cleaners.
TTHM (total trihalomethanes) (ppb)	NO	1.16	0.12 - 3.22	80	N/A	By-product of drinking water chlorination.
<i>Disinfectants & Disinfection By-products:</i>						
Disinfectant Residual – PA Ground Water Rule: This new rule requires that no well station operate below specific minimum free chlorine levels (0.4 ppm at most sites) for more than 4 hours. All sites were in compliance with the new rule in 2012.						
Chlorine Residual (ppm)	NO	0.75	0.46 - 0.75	MRDL=4	MRDLG=4	Water additive used for disinfection.
HAA-5 (haloacetic acids five) (ppb)	NO	4.30	2.96 - 4.13	60	0	By-product of drinking water chlorination.
TTHM (total trihalomethanes) (ppb)	NO	17.80	7.43 - 17.06	80	0	By-product of drinking water chlorination.
<i>Radioactive Contaminants:</i>						
Gross Alpha (pCi/L) 2011	NO	15.1	4.61 - 15.1	N/A	N/A	Erosion of natural deposits.
Gross Beta (pCi/L) 2006	NO	8.62	<1 - 8.62	50	0	Decay of natural deposits (See Note 3)
Combined Radium-226/228 (pCi/l) 2011	NO	2.246	0.233 - 2.246	5	0	Erosion of natural deposits.
Uranium (ppb) 2011	NO	26.82	4.34 - 26.82	30	0	Erosion of natural deposits.
<i>Unregulated Contaminant Monitoring Rule (UCMR-2)</i>	NO	10 constituents monitored in 2010 with none detected.				

Notes: 1. All monitoring results from Warrington Township system testing throughout the year 2012 unless otherwise noted. 2. Copper and lead levels represent 90th percentile of homes tested by Warrington Township. None of the homes monitored exceeded the Action Level (AL). 3. EPA considers 5 pCi/L to be the level of concern for Beta particles.