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# water quality 2009


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## WHAT'S INSIDE...

This report contains important information about your drinking water. If you do not understand it, please have someone translate it for you.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo o hable con agulen que lo entienda bien.

This report includes information about where your water comes from, what it contains and how it compares with the standards mandated by the U.S. Environmental Protection Agency and the Pennsylvania Department of Environmental Protection. You are being provided a copy of this report in compliance with the Safe Drinking Water Act. Landlords, businesses, schools and other property owners are strongly encouraged to share this water quality report with their tenants and employees.

For free additional copies or more information about your water and this report, call the North Wales Water Authority at 215-699-4836.

## OUR COMMITMENT TO QUALITY

The North Wales Water Authority takes great pride in delivering water of the highest quality to our customers. We are proud to report that 2009 marked the 14th consecutive year the Authority exceeded all state and federal Safe Drinking Water Act requirements.

The public water supply is safer than it has ever been. Thanks to technological advances, we are now able to detect constituents in levels that were unheard of 20 years ago. Water quality monitoring now costs more than it ever has, but because of sound fiscal management, the Authority was able to realize its 15th consecutive year without a rate increase.

2009 marked the initial rounds of the Authority's sampling for the "Unregulated Contaminant Monitoring Rule" (UCMR2). The UCMR2 is a federal mandate passed by Congress and administered by the United States Environmental Protection Agency requiring water systems to monitor constituents in the water that are not currently regulated as part of the Safe Drinking Water Act (SDWA). Sampling in accordance with the UCMR2 was conducted in addition to the normal testing regularly conducted at our Forest Park Water treatment plant and throughout our system pursuant to the SDWA. This will continue into 2010.

## YOUR WATER SOURCE

Currently, 93% of our water comes from the Delaware River and 7% comes from groundwater sources. The water coming from the Delaware River is treated at Forest Park Water, a water treatment facility that is jointly owned by North Wales and North Penn Water Authorities. Forest Park Water consists of a 96 million gallon per day raw water pumping station on the Delaware River at Point Pleasant and transmission mains which discharge the Delaware River water into the North Branch of the Neshaminy Creek. Once discharged, the water flows down the Neshaminy Creek through Lake Galena. The water released from Lake Galena flows downstream to the Forest Park Water treatment plant located in Chalfont, Pennsylvania. From the treatment plant, the North Wales and North Penn Water Authorities individually take their share of the treated supply for distribution within their respective service areas.

## YOUR WATER QUALITY

Since the Authority operates its own distribution system, as well as being joint owner of the Forest Park Water (FPW) facilities, sampling under the Safe Drinking Water Act (SDWA) is conducted independently by both utilities in accordance with appropriate requirements. This ensures that the Authority takes all distribution samples for which it is responsible and Forest Park Water takes all samples related to a surface water treatment facility. To some extent this arrangement results in duplication of testing, but ensures an added measure of quality control. Forest Park Water is among the finest "state-of-the-art" facilities in the United States. In 2007 FPW became one of the first and largest water treatments plants to complete a complex conversion from traditional media filters to technologically advanced membrane filtration. Membranes provide a more effective barrier against the passage of potentially harmful pathogens, such as giardia and cryptosporidium. The aesthetic quality of the water is enhanced by ozonation followed by flow through Granular Activated Carbon (GAC) media. As a result naturally occurring organic compounds are destroyed by ozone oxidation and removed by carbon adsorption. This treatment process ensures that our customers are receiving the finest quality drinking water available today from any surface water treatment plant in the United States.

## MONITORING YOUR WATER

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants that may be in water provided by public water systems. Food & Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

The North Wales Water Authority routinely monitors for constituents in your drinking water in accordance with federal and state laws. The tables in this report show the results of our monitoring for the period of January 1st to December 31st, 2009. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk.

Every year the Authority receives a new set of monitoring requirements from the Pennsylvania Department of Environmental Protection (DEP) based on our previous results. Individual and groups of contaminants may be required to be monitored continually, daily, weekly, monthly, quarterly, annually, etc. Currently, the Authority monitors for over 100 contaminants at ten entry points and throughout the distribution system. For a complete listing of all the contaminants that we test for, please visit our website at www.nwwater.com.

# TABLE OF DETECTED CONTAMINANTS

NWWA PWS ID# 1460048 (Unless otherwise noted, all monitoring was conducted in 2009)

| Regulated Contaminants | Violations | Level Detected | Range | MCLG | MCL | Major Sources in Drinking Water |
|---|---|---|---|---|---|---|
| **Microbial Contaminants** | | | | | | |
| Total Coliform Bacteria | No | 0 | N/A | 0 | presence of coliform bacteria in 5% of monthly samples | Naturally present in the environment |
| Fecal Coliform & *E.coli* Bacteria | No | 0 | N/A | 0 | a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive | Human and animal fecal waste |
| Turbidity (NTU) | No | 0.025 | 0.02-0.04 | N/A | TT | Soil runoff |
| Total Organic Carbon (percent removal) | No | N/A | 49.6-70% | N/A | TT | Naturally present in the environment |
| All samples collected exceeded the required Total Organic Carbon removal of 25-45%. Raw water monitoring for Giardia and Cryptosporidium was performed monthly throughout 2009. Giardia was detected in 9 out of 12 samples and Cryptosporidium was detected in 5 out of 12 samples. | | | | | | |
| **Inorganic Contaminants** | | | | | | |
| Copper[1] (ppm) 6/07 | No | 0.375[1] | 0-0.641 | 1.3 | AL=1.3 | Corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives |
| Lead[1] (ppb) 6/07 | No | 0[1] | 0-0.004 | 0 | AL=15 | Corrosion of household plumbing; erosion of natural deposits |
| Nitrate (as Nitrogen) (ppm) | No | 2.67 | 0.-4.40 | 10 | 10 | Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits |
| Barium (ppm) | No | 0.0162 | N/A | 2 | 2 | Discharge of drilling wastes; discharge from metal foundries; erosion of natural deposits |
| Nickel (ppb) | No | 0.8 | N/A | 100 | 100 | Byproduct of various industrial processes; erosion of natural deposits |
| Flouride | No | 0.0212 | 0-0.063 | 4 | 4 | Erosion of natural deposits, discharge from aluminum and fertilizer factories. |
| **Radioactive Contaminants** | | | | | | |
| Gross Alpha (adjusted) (pCi/L) | No | 3.09 | 2.36-3.82 | 0 | 15 | Erosion of natural deposits |
| Uranium (ug/L) | No | 7.39 | 3.39-11.40 | 0 | 30 | Erosion of natural deposits |
| **Disinfection By-Products** | | | | | | |
| Chlorine residual (mg/L) | No | 0.41 | 0.10-1.31 | 4[2] | 4[3] | Water additive used for disinfection |
| Total Trihalomethanes (TTHM) (ppb) | No | 23.54 | 9.03-40.4 | 0 | 80 | By-products of drinking water disinfection |
| Haloacetic Acids (HAA5) (ppb) | No | 11.18 | 3.3-21.5 | 0 | 60 | By-products of drinking water disinfection |
| Bromate (ppb) | No | 1.5 | 1.1-2.5 | 0 | 10 | By-products of drinking water disinfection |

Footnotes:

[1] Naturally occurring levels of lead and copper in the source water are non-detectable. This table represents the level detected in the 90th percentile of homes monitored in accordance with the US-EPA Lead and Copper Rule. None of the homes monitored exceeded the Action Level (AL).

[2] Maximum Residual Disinfectant Level Goal (MRDLG)

[3] Maximum Residual Disinfectant Level (MRDL)

| Unregulated Contaminants | Level Detected | Range |
|---|---|---|
| N-Nitrosodiethylamine (NDEA) (ppb) | 0.0012 | 0-0.003 |

Dimethoate (ppb); Terbufos sulfone (ppb); 2,2',4,4'-tetrabromodiphenyl ether (BDE-47) (ppb); 2,2',4,4',5-pentabromodiphenyl ether (BDE-99) (ppb); 2,2',4,4',5,5'-hexabromodiphenyl ether (BDE-153) (ppb); 2,2',4,4',6-pentabromodiphenyl ether (BDE-100) (ppb); 2,2',4,4',5,5'-hexabromodiphenyl (HBB) (ppb); 2,4,6-trinitrotoluene (TNT) (ppb); 1,3-dinitrobenzene (ppb); Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) (ppb); Acetochlor (ppb); Alachlor (ppb); Metolachlor (ppb); Acetochlor ethane sulfonic acid (ESA) (ppb); Acetochlor oxanilic acid (OA) (ppb); Alachlor ESA (ppb); Alachlor OA (ppb); Metolachlor ESA (ppb); Metolachlor OA (ppb); N-nitrosodimethylamine (NDMA) (ppb); N-nitroso-di-n-butylamine (NDBA) (ppb); N-nitroso-di-n-propylamine (NDPA) (ppb); N-nitrosomethylethylamine (NMEA) (ppb); N-nitrosopyrrolidine (NPYR) (ppb) were monitored but not detected.

*Data presented in the above table is from calendar year 2009 monitoring performed in accordance with the US-EPA Unregulated Contaminants Monitoring Rule-2. North Wales Water Authority will continue to perform unregulated contaminant assessment monitoring through 2010. If you would like to obtain a copy of those results prior to the distribution of our 2010 Annual Water Quality Report, please call us at 215-699-4836.*

**Likely Source of Contamination:** N-Nitrosodiethylamine (NDEA): Nitrosamines can form as intermediates and byproducts in chemical synthesis and manufacture of rubber, leather and lastics; can form spontaneously by reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria. Foods such as bacon and malt beverages can contain nitrosamines; there is also evidence that they form in the upper GI tract.

## TABLE DEFINITIONS

Our water quality table contains terms and abbreviations you might not be familiar with. The following definitions may help you better understand the table.

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

**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.

**Nephelometric Turbidity Unit (NTU)** - a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Parts per million (ppm) or Milligrams per liter (mg/L)** - one part per million corresponds to one minute in two years or a single penny in $10,000.

**Parts per billion (ppb) or Micrograms per liter (ug/L)** - one part per billion corresponds to one minute in 2,000 years or a single penny in $10,000,000.

**Picocuries per liter (pCi/L)** - a measure of the radioactivity in water.

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

## SUBSTANCES EXPECTED TO BE IN DRINKING WATER:

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals. In addition, water can pick up substances resulting from the presence of animals or from human activity. Substances 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 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 agriculture, 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 the result of oil and gas production and mining activities.

However, water treatment significantly reduces the level of these substances in drinking water.

## SHOULD I TAKE SPECIAL PRECAUTIONS?

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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at: 1-800-426-4791 or visit the EPA Web site: *www.epa.gov/safewater/wot/index.html*.

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. North Wales Water Authority 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*.

## CUSTOMERS WITH SPECIAL NEEDS

The North Wales Water Authority maintains a list of customers who have an essential need for an uninterrupted supply of water (such as in dialysis treatments). If you have health conditions that require a continual supply of water in your home, please contact our Water Quality Department at 215-699-4836.

## HOW CAN I LEARN MORE ABOUT MY DRINKING WATER?

More information may be obtained from the following:

**Environmental Protection Agency**
Safe Drinking Water Hotline:
1-800-426-4791
www.epa.gov/safewater/wot/index.html

**Pennsylvania Department of Environmental Protection**
Bureau of Water Standards and Facility Regulations
717-772-4018
www.depweb.state.pa.us

**American Water Works Association**
1-800-926-7337
www.awwa.org