"2016 Annual Drinking Water Quality Report"
PWSID # 7210063 Middlesex Township Municipal Authority

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

WATER SYSTEM INFORMATION:

This report is designed to inform you about the quality of water and services we deliver to you every day. If you have any questions about this report or concerning your water utility, please contact **Rory L. Morrison at (717) 243-0674 or Toll Free at 1-888-417-0674.** We want our valued customers to be informed about their water utility. If you want to learn more, please feel free to attend any of our regularly scheduled meetings. They are held on **the third Thursday of each month at 7:00 PM, at 350 N. Middlesex Road, Carlisle, PA 17013.**

SOURCE OF WATER:

The Middlesex Municipal Authority purchases water supplied to you from South Middleton Township Municipal Authority and also produces water from its own groundwater source located in Middlesex Township. The water supplied to you from South Middleton is pumped from two (2) groundwater sources located in South Middleton Township. **Well No. 1** draws from the Tomstown Aquifer, and was developed in 1972. Well No. 1 is located along Park Drive across from PPG Industries. **Well No. 2** draws from the Elbrook Aquifer and was developed in 1975. Well No. 2 is located one mile west of Boiling Springs, south Route 174.

In July of 2010 Middlesex Township Municipal Authority began using its own permitted groundwater supply.
Well No. 1 which is located west of South Middlesex Road draws from the Rockdale Run Aquifer Formation and was constructed in the spring of 2004.

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/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

MONITORING YOUR WATER:

South Middleton Township Municipal Authority and Middlesex Township Municipal Authority routinely monitors for constituents in your drinking water according to Federal and State laws. The tables shown within this report are the results of monitoring for the period of **January 1st to December 31st, 2016**. The State allows us to monitor for some contaminants less than once a year because the concentration of these contaminants do not change frequently. Some of our data is from prior years in accordance with the Safe Drinking Water Act. The date has been noted on the sampling results table.

DEFINITIONS AND ABBREVIATIONS:

In the table's you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

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

Maximum Contaminant Level (MCL) - 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.

Maximum Contaminant Level Goal (MCLG) - 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.

Maximum Residual Disinfectant Level (MRDL) - 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.

Maximum Residual Disinfectant Level Goal (MRDLG) - 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.

Minimum Residual Disinfectant Level Goal (MinRDL) – The minimum level of residual disinfectant required at the entry point to the distribution system.

Treatment Technique (TT) -A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water.

PCi/L = picocuries per liter (a measure of the radioactivity)

Mrem/year = millirems per (a measure of radiation absorbed by the body)

ppb = parts per billion, or micrograms per liter (ug/L)

ppm = parts per million, or milligrams per liter (mg/L)

ppt = parts per trillion, or nanograms

ND = not-detected

Water Quality Table for the South Middleton Township Municipal Authority Water System
PWSID NO. 7210050

DETECTED SAMPLE RESULTS:

Chemical or Radiological Contaminant	MCL in CCR units	MCLG	Highest level Detected	Range of Detection	Units	Violation Y/N	Sources of Contamination
Chromium (2015)	100	100	4.0	2.0 – 4.0	ug/l	N	Discharge from steel and pulp mills; erosion of natural deposits
Asbestos (MFL) (2011)	7MFL	7MFL	0.2	N/A	MFL	N	Decay of asbestos cement water mains: Erosion of natural deposits.
Barium (2015)	2	2	0.050	0.042-0.050	mg/l	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Tetrachloroethylene (2016)	5	0	0.9	N/A	ug/l	N	Discharge from factories and dry cleaners.
Radium – 228 (2014)	5.0	0	1.2	N/A	Pci/L	N	Erosion of Natural Deposits

Entry Point Disinfectant Residual							
Contaminant	Minimum Disinfectant Residual	Lowest Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Source of Contamination
Chlorine	0.40	0.89	0.89-1.38	mg/l	2016	N	Water additive used to control microbes.

Unregulated contaminants are those that don't yet have a drinking water standard set by EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard in the future

UCMR3 Analysis – Unregulated Contaminants							
Contaminant	MCL in CCR Units	Result	Range	Units	Sample Date	Violation Y/N	Sources of Contamination
Hexavalent Chromium	N/A	0.53	0.18 to 0.53	ug/l	2014	N/A	Hexavalent Chromium is an odorless and tasteless metallic element found naturally in rocks, plants and soul and volcanic dust.
Strontium	1,500	440	74 to 440	ug/l	2014	N/A	Strontium is an alkaline earth metal similar to calcium and barium
Vanadium	N/A	0.25	0.20 to 0.25	ug/l	2014	N/A	Vanadium is found in small quantities in soils and rocks

Water Quality Table for Middlesex Township Municipal Authority Water System
PWSID NO. 7210063

DETECTED SAMPLE RESULTS:

Chemical or Radiological Contaminant	MCL in CCR units	MCLG	Highest level Detected	Range of Detection	Units	Violation Y/N	Sources of Contamination
Chlorine	MRDL= 4	MRDLG= 4	1.06	0.52-1.06	ppm	N	Water additive used to control microbes
Total Haloacetic Acids Five (HAA5) (2016)	60	n/a	42.2	N/A	ppb	N	By-product of drinking water chlorination
Trihalomethanes Total (TTHM's) (2016)	80	n/a	64.3	N/A	ppb	N	By-product of drinking water chlorination
Nitrate (2016)	10	10	7.6	7.0 – 7.6	mg/l	N	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion form natural deposits.
Asbestos (MFL) Entry Point (2014)	7 MFL	7 MFL	0.0	N/A	MFL	N	Decay of asbestos cement water mains; Erosion of natural deposits.
Combined Radium 228 (2011)	5	0	0.51	ND-1.02	PCi/L	N	Erosion of natural deposits
Barium (2015)	2	2	0.037	N/A	mg/l	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (2015)	100	100	3.5	N/A	ppb	N	Erosion of natural deposits
Fluoride (2015)	2	2	0.1	N/A	ppm	N	Erosion of natural deposits

Entry Point Disinfectant Residual							
Contaminant	**Minimum residual required**	**Lowest Level Detected**	**Range Of Detection**	**Units**	**Sample Date**	**Violation Y/N**	**Source of Contamination**
Chlorine (Site 102)	0.60	0.88	0.88-1.24	mg/l	2016	N	Water additive used to control microbes.
Contaminant	**Action Level (AL)**	**MCLG**	**90Th Percentile Value**	**Units**	**# of Sites Above AL of Total Sites**	**Violation Of TT Y/N**	**Source of Contamination**
Lead (2016)	15	0	0	ppb	0	N	Corrosion of household plumbing.
Copper (2016)	1.3	0	0.17	ppb	0	N	Corrosion of household plumbing

Violations: In 2016 the population served in Middlesex Township increased to 3,527 people. This increase in population triggered an increase in sampling requirements from 10 to 20 samples sites for lead & copper. This sampling was overlooked and resulted in a Tier 3 violation notice being issued by DEP. The 10 samples that were collect in 2016 found no samples above the action level, and are shown in the sampling table listed above. The Authority is required to sample 20 sites in 2017 for lead and copper.

INFORMATION ABOUT 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. Middlesex Township Municipal 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 water 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 http://www.epa.gov/safewater/lead

Additional Health Information: 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 human activity.

Contaminants that may be present in source water include:

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

In order to assure the tap water is safe to drink, EPA and DEP prescribes the regulations which limit the amount of certain contaminants in the water provided by public water systems. FDA and DEP regulations establish limits for contaminants in bottled water which must provide the same protection for the 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Water Hotline (800-426-4791).

OTHER INFORMATION NITRATE: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

WATER CONSERVATION REMINDER

The average person uses about 62 gallons of water every day; the majority of water is used for laundry, toilet flushing, and showering, followed by faucet use and leaky fixtures.

Try these water conservation tips and save water and money:

- Replace an old toilet with a new 1.6 gallon-per-flush model. This can save 7,900 to 21,700 gallons of water per year.
- Repair dripping faucets and leaking toilets (flapper valves are usually the cause). Repairs can save 10 gallons of water per person per day. A faucet dripping at one drop per second wastes 2,700 gallons of water per year.
- Only wash clothes and dishes when you have a full load. When replacing an older machine, consider high efficiency models, which use an average of 30% less water and 40-50% less energy.
- Install low-flow, water-efficient showerheads and faucets and save 1-to-7.5 gallons per minute. Taking a quick shower can save an average of 20 gallons of water per day.
- Turn off the water when brushing your teeth or shaving to save more than 5 gallons of water per day.

For more water conservation tips visit the DEP website at www.dep.pa.gov/citizens

We ask that all our customers help us to protect our water sources in order to continue our way of life and protect our children's future. Thank you for allowing us to continue providing your family and/or business with clean, quality water.