Tuscarawas County Metropolitan Sewer District

2017 ANNUAL WATER QUALITY REPORT

We are proud to present the following report to provide information to you, the consumer, on the quality of drinking water for each of our four public water systems. Included within this report is general health information, water quality test results, information regarding how to participate in decisions concerning your drinking water, and contact information.

The Tuscarawas County Metropolitan Sewer District (TCMSD) is responsible for operating and maintaining four public community water systems located throughout Tuscarawas County as shown in Figure 1. In 2017, drinking water in each of these systems met all Ohio EPA standards.

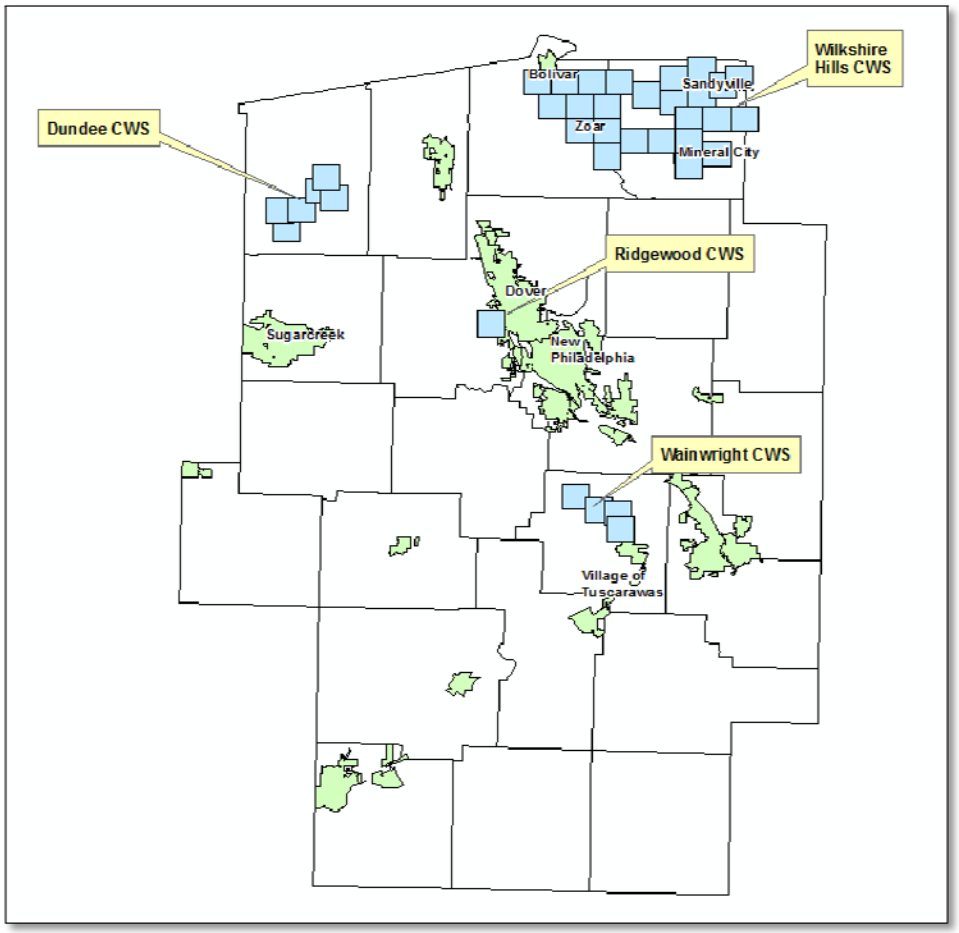

Figure 1 - Map of TCMSD Community Water Systems

DUNDEE COMMUNITY WATER SYSTEM (CWS)

This system provides drinking water to the community of Dundee and surrounding areas of Wayne Township and uses ground water wells as its drinking water source. We have a current, unconditioned license to operate this water system.

This water is treated by filtration and disinfection. Filtration removes particles suspended in the source water. Particles typically include clays and silts, natural organic matter, iron and manganese, and microorganisms. Your water is also treated by disinfection. Disinfection involves the addition of chlorine

to kill bacteria and other microorganisms (viruses, cysts, etc.) that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

Ohio EPA has conducted a study of this source of drinking water to identify potential contaminant sources and provide guidance for protection of this source. According to this study, the aquifer that supplies water to this system has a low susceptibility to contamination. This determination is based upon the following:

1. Presence of a thick, protective layer of bedrock overlaying the aquifer
2. Significant depth of the aquifer (>100 feet)
3. No evidence to suggest that ground water has been impacted by any significant levels of chemical contaminants from human activities
4. No apparent significant potential contaminant sources within the protection area

Refer to Table 1 for an explanation of the Water Quality Data for the Dundee CWS.

RIDGEWOOD CWS

This system provides drinking water to the Ridgewood Subdivision in Dover Township, and it uses two ground water wells as its drinking water source. We have a current, unconditioned license to operate this water system.

This water is treated by disinfection. Disinfection involves the addition of chlorine to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

Ohio EPA has conducted a study of this source of drinking water to identify potential contaminant sources and provide guidance for protection of this source. According to this study, the aquifer that supplies water to this system has a moderate susceptibility to contamination. This determination is based upon the following:

1. Presence of a thick, protective layer of bedrock overlaying the aquifer
2. Significant depth of the aquifer (>100 feet)
3. The presence of low levels of manmade contaminants in three samples of treated water taken between 1994 and 1996 (Ethyl benzene, xylene and dichlorobenzene were detected at levels between 0.9 to 5.8 ppb)
4. The presence of significant potential contaminant sources within the source water protection area

Refer to Table 2 for an explanation of the Water Quality Data for the Ridgewood CWS.

WILKSHIRE HILLS CWS

This system provides drinking water to the following water Districts: Wilkshire Hills, Zoar, Mineral City, Lawrence Township Industrial Park, Hunters Green Subdivision, Sandyville, UMH/Sandy Valley Estates, SR 183/Jennie Brick Road, and Sandy Township. This system receives its source water from two wells located near Welton Road in Lawrence Township. TCMSD has a current, unconditioned license to operate this water system.

This water is treated by disinfection. Disinfection involves the addition of chlorine to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century. In addition to disinfection, we add fluoride to promote dental health. We also add phosphate to control scale formation within the distribution system and to help keep iron and manganese in solution, which reduces aesthetic problems such as staining and discolored water.

The Wilkshire Hills Public Water System also has an emergency connection with the Village of Bolivar; however, this connection was not utilized in 2017.

A source water assessment was conducted by Ohio EPA to identify potential contaminant sources and provide guidance on protecting the drinking water source. According to this study, the aquifer (water-rich zone) that supplies water to this system has a high susceptibility of contamination. This determination is based on the following:

1. The presence of a relatively thin, protective layer of sandy loam and clay overlaying the aquifer
2. The shallow depth of the aquifer (<30 feet)
3. The presence of significant potential contaminant sources in the protection area

Refer to Table 3 for an explanation of the Water Quality Data for the Wilkshire Hills CWS.

WAINWRIGHT CWS

This system provides drinking water to the community of Wainwright and surrounding areas of Warwick Township. To supply water for this system, TCMSD is connected to the Village of Tuscarawas CWS and purchases water from the Village of Tuscarawas. The Village of Tuscarawas CWS receives its drinking water from two wells located near the Village Park along Cherry Street.

This water is treated by disinfection. Disinfection involves the addition of chlorine to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century. The village also uses phosphate to control scale formation within the distribution system and helps keep iron and manganese in solution, which reduces aesthetic problems such as staining.

Prior to entering the Wainwright CWS, TCMSD provides additional chlorination to ensure that the water is safe and all Ohio EPA requirements are satisfied. TCMSD has a current, unconditioned license to operate this water system.

Ohio EPA has conducted a study of this source of drinking water to identify potential contaminant sources and provide guidance for protection of this source. According to this study, the aquifer that supplies water to this system has a high susceptibility to contamination. This determination is based upon the following:

- Lack of a protective layer of clay/shale/other overlaying the aquifer
- Shallow depth of the aquifer (approx. 10 feet)
- Significant potential contaminant sources within the protection area

For more information about the source water assessments for our water systems, or to find out what you can do to help protect our aquifers, please contact us at (330) 874-3262.

Refer to Tables 4A and 4B for an explanation of the Water Quality Data for the Wainwright CWS.

WHAT ARE SOURCES OF CONTAMINATION TO 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 include: 1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; 2) 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; 3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; 4) 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; and 5) 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, USEPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA 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 Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

WHO NEEDS TO 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 infection. 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 microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

ABOUT YOUR DRINKING WATER

The EPA requires regular sampling to ensure drinking water safety. TCMSD conducted sampling for bacteria, organic, inorganic, and radioactive contaminants during 2016. Samples were collected for a number of different contaminants most of which were not detected in our water supplies. The Ohio EPA requires us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, are more than one year old.

LEAD IN HOUSEHOLD PLUMBING

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. TCMSD is responsible for providing high quality drinking water, but we 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 at 800-426-4791 or at http://www.epa.gov/safewater/lead.

HOW DO I PARTICIPATE IN DECISIONS CONCERNING MY DRINKING WATER?

Public participation and comments are encouraged at regular meetings of the Tuscarawas County Board of Commissioners which meets weekly on Monday and Wednesday. For more information on your drinking water contact TCMSD at (330) 874-3262.

DEFINITIONS OF SOME TERMS CONTAINED WITHIN THIS REPORT.

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

Annual Running Average (ARA)

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 Contaminant level (MCL): The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Parts per Million (ppm) or Milligrams per Liter (mg/L) are units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days.

Parts per Billion (ppb) or Micrograms per Liter (µg/L) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of 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.

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.

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

The "<"symbol: A symbol which means less than. A result of <5 means that the lowest level that could be detected was 5 and the contaminant in that sample was not detected.

Picocuries per liter (pCi/L): A common measure of radioactivity

Table 1 - An Explanation of Water Quality Data - Dundee CWS

In **2017**, TCMSD sampled for a total of **14** different contaminants in the Dundee CWS; however, these contaminants were at allowable levels and no health based violations were reported. Below is a list of contaminants that were detected in the Dundee CWS.

Substances we detected (Units)	What's Allowed (MCL)	What's the Goal? (MCLG)	Level Found	Range		Violation?	When we checked	Where can it come from?
				Low	High			
Inorganic Contaminants								
Lead (ppb)	AL = 15	0	0.89	NA		NO	2017	Corrosion of household plumbing systems
	Zero out of 5 samples was found to have lead levels in excess of the lead action level of 15 ppb.							
Copper (ppm)	AL = 1.3	AL = 1.3	0.24	NA		NO	2017	Corrosion of household plumbing systems
	Zero out of 5 samples was found to have copper levels in excess of the copper action level of 1.3 ppm.							
Barium (ppm)	2	2	0.06	NA		NO	2016	Discharge of drilling wastes; discharge from metal refineries
Chromium (ppb)	100	100	2.06	NA		NO	2016	Discharge from steel and pulp mills; Erosion of natural deposits
Nitrate (as N) (ppm)	10	10	0.10	NA		NO	2017	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Selenium (ppb)	50	50	2.77	NA		NO	2016	Discharge from petroleum and metal refineries; Erosion of natural deposits; discharge from mines
Residual Disinfectants								
Total Chlorine (ppm)	MRDL = 4	MRDLG=4	0.89	0.38	1.13	NO	2017	Water additive to control microbes
Disinfection Byproducts								
HAA5s (ppb) [Haloacetic Acids]	60 ARA	0	9.67	NA		NO	2017	Byproduct of drinking water chlorination
TTHMs (ppb) [Total Trihalomethanes]	80 ARA	0	34.60	NA		NO	2017	Byproduct of drinking water chlorination

Unregulated Contaminants							
Name	Result	Range				When we checked	
		Low	High				
Bromodichloromethane (ppb)	2.30	NA				2017	
Dibromochloromethane (ppb)	9.54	NA				2017	

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determing the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Table 2 - An Explanation of Water Quality Data - Ridgewood CWS

In **2017**, TCMSD sampled for a total of **14** different contaminants in the Ridgewood CWS; however, these contaminants were at allowable levels and no health based violations were reported. Below is a list of contaminants that were detected in the Ridgewood CWS.

Substances we detected (Units)	What's Allowed (MCL)	What's the Goal? (MCLG)	Level Found	Range		Violation?	When we checked	Where can it come from?
				Low	High			
Inorganic Contaminants								
Lead (ppb)	AL = 15	0	2.65	NA		NO	2017	Corrosion of household plumbing systems
	Zero out of 5 samples was found to have lead levels in excess of the lead action level of 15 ppb.							
Copper (ppm)	AL = 1.3	AL = 1.3	0.218	NA		NO	2017	Corrosion of household plumbing systems
	Zero out of 5 samples was found to have copper levels in excess of the copper action level of 1.3 ppm.							
Barium (ppm)	2	2	0.08	NA		NO	2016	Discharge of drilling wastes; discharge from metal refineries
Nitrate (as N) (ppm)	10	10	0.10	NA		NO	2017	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Selenium (ppb)	50	50	2.02	NA		NO	2016	Discharge from petroleum and metal refineries; Erosion of natural deposits; discharge from mines
Residual Disinfectants								
Total Chlorine (ppm)	MRDL = 4	MRDLG=4	1.09	0.70	1.85	NO	2017	Water additive to control microbes
Disinfection Byproducts								
HAA5s (ppb) [Haloacetic Acids]	60 ARA	0	5.05	NA		NO	2017	Byproduct of drinking water chlorination
TTHMs (ppb) [Total Trihalomethanes]	80 ARA	0	21.5	NA		NO	2017	Byproduct of drinking water chlorination
Unregulated Contaminants								
Bromodichloromethane (ppb)	N/A	N/A	0.73	N/A	N/A	N/A	2017	
Dibromochloromethane (ppb)	N/A	N/A	2.64	N/A	N/A	N/A	2017	

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determing the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Table 3 - An Explanation of Water Quality Data - Wilkshire Hills CWS

In **2017**, TCMSD sampled for a total of **14** different contaminants in the Wilkshire Hills CWS; however, these contaminants were at allowable levels and no health based violations were reported. Below is a list of contaminants that were detected in the Wilkshire Hills CWS.

Substances we detected (Units)	What's Allowed (MCL)	What's the Goal? (MCLG)	Level Found	Range		Violation?	When we checked	Where can it come from?
				Low	High			
Inorganic Contaminants								
Lead (ppb)	AL = 15	0	1.38	NA		NO	2017	Corrosion of household plumbing systems
	Zero out of 20 samples was found to have lead levels in excess of the lead action level of 15 ppb.							
Copper (ppm)	AL = 1.3	AL = 1.3	0.72	NA		NO	2017	Corrosion of household plumbing systems
	Zero out of 20 samples was found to have copper levels in excess of the copper action level of 1.3 ppm.							
Barium (ppm)	2	2	0.07	NA		NO	2016	Discharge of drilling wastes; discharge from metal refineries
Fluoride (ppm)	4	4	1.04	0.20	1.91	NO	2017	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (as N) (ppm)	10	10	1.51	NA		NO	2017	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Selenium (ppb)	50	50	2.55	NA		NO	2016	Discharge from petroleum and metal refineries; Erosion of natural deposits; discharge from mines
Residual Disinfectants								
Total Chlorine (ppm)	MRDL = 4	MRDLG=4	1.00	0.35	1.46	NO	2017	Water additive to control microbes
Disinfection Byproducts								
HAA5s (ppb) [Haloacetic Acids]	60 ARA	0	4.31	2.58	4.31	NO	2017	Byproduct of drinking water chlorination
TTHMs (ppb) [Total Trihalomethanes]	80 ARA	0	17.3	10.6	17.3	NO	2017	Byproduct of drinking water chlorination
Radioactive Contaminants								
Gross Alpha (pCi/L)	15	0	3.17	NA		NO	2013	Erosion of natural deposits

Unregulated Contaminants							
Name	Average	Range				When we checked	
		Low	High				
Bromodichloromethane (ppb)	4.77	3.44	6.09			2017	
Dibromochloromethane (ppb)	4.64	3.69	5.59			2017	

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determing the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Table 4A - An Explanation of Water Quality Data - Village of Tuscarawas CWS (Purchased Water)

The following table lists the contaminants found in the Village of Tuscarawas CWS. ***(Data provided by the Village of Tuscarawas)***

Substances the Village Detected (Units)	What's Allowed (MCL)	What's the Goal? (MCLG)	Level Found	Range		Violation?	When we checked	Where can it come from?
				Low	High			
Inorganic Contaminants								
Arsenic (ppb)	10	0	3	NA		NO	2017	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Nitrate (as N) (ppm)	10	10	0.39	NA		NO	2017	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Radioactive Contaminants								
Gross Alpha, including Radon	5	0	4.25	NA		NO	2016	Erosion of natural deposits

Table 4B - An Explanation of Water Quality Data - Wainwright CWS

In **2017**, TCMSD sampled for a total of **13** different contaminants in the Wainwright CWS; however, these contaminants were at allowable levels and

Substances we detected (Units)	What's Allowed	What's the Goal?	Level Found	Range		Violation?	When we checked	Where can it come from?
				Low	High			
Inorganic Contaminants								
Lead (ppb)	AL = 15	0	<1	NA		NO	2016	Corrosion of household plumbing systems
	Zero out of 5 samples were found to have lead levels in excess of the lead action level of 15 ppb.							
Copper (ppm)	AL = 1.3	AL = 1.3	0.42	NA		NO	2016	Corrosion of household plumbing systems
	Zero out of 5 samples was found to have copper levels in excess of the copper action level of 1.3 ppm.							
Residual Disinfectants								
Total Chlorine (ppm)	MRDL = 4	MRDLG=4	0.56	0.33	0.80	NO	2017	Water additive to control microbes
Disinfection Byproducts								
HAA5s (ppb) [Haloacetic Acids]	60 ARA	0	2.79	NA		NO	2017	Byproduct of drinking water chlorination
TTHMs (ppb) [Total Trihalomethanes]	80 ARA	0	22.5	NA		NO	2017	Byproduct of drinking water chlorination
Unregulated Contaminants								
Bromodichloromethane (ppb)	3.70	0	5.83	NA		NA	2017	
Dibromochloromethane (ppb)	4.86	0	9.16	NA		NA	2017	

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determing the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.