



City of Mansfield

Tim Theaker, Mayor

2010 Lexington-Springmill Rd., Mansfield, Ohio 44904 – (419) 884-3310 Fax – (419) 884-1003
Angelo Klousiadis, Water Treatment Plant Manager

CITY OF MANSFIELD

WATER QUALITY REPORT 2016

The City of Mansfield is proud to present our 2016 Water Quality Report. This report includes valuable information regarding your drinking water. The report emphasizes the quality product the City produces and gives you assurance that your drinking water will continue to be safe. We have a current, unconditioned license to operate our water system.

We are proud to report that the water provided by the Mansfield Water Treatment Plant meets or exceeds established water quality standards. This is based on routine chemical and bacteriological testing of City water at the water plant and in the distribution system. Our treatment plant is constantly maintained, evaluated, and upgraded to stay abreast of advancements in technology and government regulations. Through foresight and planning, efficiency in operations, and focus on excellence in customer service, we will provide you the best quality drinking water at an economical price.

This report will answer three important questions:

- Where does my water come from?
- How is my water treated and purified?
- What is in my water?

We will also provide you with information about available sources that will answer other questions on water quality and health effects.

WHERE DOES MY WATER COME FROM?

Mansfield City water is a blend of surface and ground water. Surface water is supplied to the treatment plant from the 3.5 billion gallon Clearfork Reservoir. Ground water is supplied from ten municipal wells, located within 1.5 miles from the plant. Water is blended using approximately 55% surface water and 45% well water. The percent blend is determined by surface water clarity, seasonal algal tastes and odors and water temperature.

HOW IS MY WATER TREATED AND PURIFIED?

The treatment process consists of a series of steps. Raw water is pumped from Clearfork reservoir to the plant through a 24" line. The wells are pumped to the plant through two 18" lines. The water is blended at the plant in a raw water wet well. From the wet well the water is pumped to the flash mix where alum polymer and powdered carbon are added. The carbon removes any tastes or odors occurring in the lake water. The alum polymer causes small particles to adhere to one another (called floc) making them heavy enough to settle in a basin from which sediment is removed.

After settling, the water is then filtered through layers of fine coal, silicate sand, and gravel. As smaller, suspended particles are removed, turbidity disappears and clear water emerges.

Next, caustic soda and corrosion inhibitors are added for pH balance and corrosion reduction in the distribution system.

Finally, as a precaution against any bacteria that might remain, chlorine is added before water flows to sanitized, underground storage reservoirs, water towers, and into your homes and businesses. We carefully monitor the amount of chlorine added, trying to provide the lowest quantity necessary to protect the safety of your water at the furthest distance from the plant without compromising taste.

SUBSTANCES EXPECTED TO BE IN DRINKING WATER

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).

The sources of drinking water (both tap 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:

- (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 water 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, urban storm water runoff, and residential uses.
- (D) 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 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.

Surface water sources, such as rivers and reservoirs, are more susceptible to contamination than ground water sources. Mansfield utilizes additional drinking water treatment techniques due to the potential for contamination from agricultural, residential, and commercial land uses upstream from the Clearfork Reservoir. For over 50 years, the Mansfield public water system has effectively treated this water to meet drinking water quality standards.

In 2003, Ohio EPA completed a Source Water Area Protection Report (SWAP) and Vulnerability Assessment for the Clearfork Reservoir (surface water) and wells (ground water). The susceptibility analyses from that report states that because Mansfield's drinking water is a blend between the surface water and ground water, the water system as a whole is considered to be highly susceptible to contamination. By their nature, surface waters are easily accessible and can be readily contaminated by chemicals and pathogens, with relatively short travel times from a source to the intake. The Glacial wellfields are also considered to have a high susceptibility to contamination because of the presence of a relatively thin protective layer of clay overlying the aquifer, the shallow depth (less than 30 feet below the ground surface) of the aquifer, and the presence of significant potential contaminant sources in the protection area. This susceptibility means that under currently existing conditions, the likelihood of the glacial aquifer becoming contaminated is relatively high. The likelihood can be minimized by implementing appropriate protective measures. The Bedrock wellfields are considered to have a moderate susceptibility to contamination because of the presence of moderately thick protective layer of clay overlying the aquifer, and no evidence to suggest that ground water has been impacted by any significant levels of chemical contaminants from human activities. This susceptibility means that under currently existing conditions, the likelihood of the bedrock aquifer becoming contaminated is moderate. This likelihood can be minimized by implementing appropriate protective measures. The susceptibility was determined by using local and regional information to best define the geologic setting of the wells. If additional information becomes available, Ohio EPA will reevaluate the susceptibility. While the source water for the City of Mansfield Public Water System is considered susceptible to contamination, historically, the City of Mansfield Public Water System has effectively treated this source water to meet drinking water quality standards.

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*, *Giardia*, and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

AN EXPLANATION OF THE WATER QUALITY DATA TABLE

Definitions of some of the terms contained in the data table and within this report.

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 Goal (MRDLG): The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level (MRDL): The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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

PARTS per BILLION (ppb) or Micrograms per Liter (ug/l) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

Detected Level: The highest level detected of a contaminant for comparison against the acceptance levels for each parameter. These levels could be the highest single measurement, or an average of values depending on the contaminant.

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

Range: The lowest to the highest values for all samples tested for each contaminant. If only one sample is tested, or no range is required for this report, then no range is listed for that contaminant in the table.

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

Cyanotoxins: Toxin produced by Cyanobacteria. These toxins include liver toxins, nerve toxins, and skin toxins. Also sometimes referred to as algal toxins.

Saxitoxin: Nerve toxins produced by a number of Cyanobacteria

PSWID # 7002914

WHAT IS IN MY WATER? WATER QUALITY TABLE

INORGANIC CONTAMINANTS

	Date Tested	Units	MCLG	MCL	Detected Level	Range	Violation	Major Source
Barium	2016	ppm	2	2	.100	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits

	Date Tested	Units	MCLG	MCL	Detected Level	Range	Violation	Major Source
Copper (1)	2016	ppm	1.3	AL=1.3	0.53	.048 - .60	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (2)	2016	ppm	0	AL=.015	0.0038	<.002 - .011	No	Corrosion of household plumbing systems; Erosion of natural deposits
Nitrate	2016	ppm	10	10	0.31	<0.10 – 0.62	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride	2016	ppm	4	4	0.183	NA	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories

MICROBIOLOGICAL CONTAMINANTS

	Date Tested	Units	MCLG	MCL	Detected Level	Range	Violation	Major Source
Turbidity (NTU)	2016	NTU	NA	TT	0.07	0.03 - 0.16	No	Soil runoff
Turbidity (% of samples meeting standard)	2016	%	NA	TT	100%	100%	No	

Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95 % of the daily samples and shall not exceed 1.0 NTU at any time. As reported above the highest recorded turbidity at the Mansfield Water Treatment Plant in 2010 was 0.21 NTU and the lowest monthly percentage of samples meeting the turbidity limits was 100%.

MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL)

	Date Tested	Units	MCLG	MCL	Detected Level	Range	Violation	Major Source
Chlorine	2016	mg/l	NA	TT	1.45	1.13 – 1.75	No	Added for Disinfection

For total chlorine, the MRDL is 4.0 mg/l. Compliance is based on the running annual average of samples taken in the distribution system and computed quarterly. If the average of the quarterly averages covering any consecutive four-quarter period exceeds the MRDL, the system is in violation and must notify the public.

UNREGULATED CONTAMINANTS (TOC)

	Date Tested	Units	MCL	Detected Level	Range	Violation	Major Source	
TOC	2016	TT	Compliance =1.0	1.62	1.43 – 2.06	NA	No	Naturally present in the environment

The value reported under “DETECTED LEVEL” for Total Organic Carbon (TOC) is the lowest ratio between the percentage of TOC actually removed to the percentage of TOC required removed. A value of greater than 1.0 indicates the water system is in compliance with TOC removal requirements. A value of less than 1.0 indicates a violation of the TOC removal requirements.

UNREGULATED CONTAMINANTS (CYANOTOXINS)

	Date Tested	Units	MCL	Detected Level	Range	Violation	Major Source
Saxitoxin	August - November 2016	ug/l	0.2	0.026	0.022 – 0.032	No	Bi-product of algal blooms

VOLATILE ORGANICS/ DISINFECTION BY-PRODUCTS

	Date Tested	Units	MCLG	MCL	Detected Level	Range	Violation	Major Source
Total Halo-acetic acids 5	2016	ppb	no goal set	60	47.9	11.7 – 55.8	No	By-product of drinking water chlorination
TTHMs	2016	ppb	no goal set	80	78.2	24.0 – 87.4	No	By-product of drinking water chlorination

WATER QUALITY TABLE FOOTNOTES

- (1) Zero out of 33 samples tested for copper exceeded the current Action Level of 1.3 ppm.
- (2) Zero out of 33 samples tested for lead exceeded the current Action Level of .0015 ppm.

KEY TO TABLE

AL = Action Level
MCLG = Maximum Contaminant Level Goal
MCL = Maximum Contaminant Level
NTU = Nephelometric Turbidity Units
ppm = Parts per Million or milligrams per liter (mg/L)
ppb = Parts per Billion or micrograms per liter (ug/L)
TT = Treatment Technique
NA = not applicable
nd = none detected
< = less than
pCi/L = picocuries per liter

LEAD IN DRINKING WATER

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. The Mansfield Water Treatment Plant 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

HOW WILL I KNOW IF THERE IS A PROBLEM WITH MY WATER?

If the amount of a contaminant exceeds a predetermined safe level in your drinking water, (MCL, action level, etc.), the Mansfield Water Treatment Plant will notify you by newspaper, radio, TV or other means within 24 hours. With the notification you will be instructed on what appropriate actions you can take to protect your family's health.

SCHEDULE OF CITY COUNCIL MEETING

You are invited to participate in our public forum and voice your concerns about your drinking water. The City of Mansfield Council meetings are held on the first and third Tuesday of the month at 7:00 pm on the third floor of the City Municipal Building located at 30 North Diamond Street.

QUESTIONS?

Should you have any questions regarding this report or your drinking water, please call Angelo Klousiadis, Plant Manager, with the Mansfield Water Treatment Plant at (419) 884-3310. We will be pleased to answer your questions.