



City of Mansfield

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CITY OF MANSFIELD

WATER QUALITY REPORT 2018

The City of Mansfield is proud to present our 2018 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. In 2018, we had 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 50% surface water and 50% 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. In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits of contaminants in bottled water which must provide the same protection for public health. 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. A full copy of the City of Mansfield's Source Water Assessment can be found at Ohio EPA website: <http://wwwapp.epa.ohio.gov/gis/swpa/OH7002914.pdf>

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

NTU = Nephelometric Turbidity Units
picocuries per liter

NA = Not Applicable

< = Less Than

pCi/L =

PSWID # OH7002914

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>.

WHAT IS IN MY WATER?: WATER QUALITY TABLE

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Disinfectant and Disinfectant By-Products							
Total Chlorine (ppm)***	MRDLG = 4	MRDL = 4	1.49	1.31-1.73	No	2018	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	NA	60	51.9	<6 - 60.1	No	2018	By-product of drinking water disinfection
Total Trihalomethanes (TTHM) (ppb)	NA	80	72.7	22.7 - 92.5	No	2018	By-product of drinking water disinfection
Turbidity							
Turbidity (NTU)	NA	TT	0.08	0.05 - 0.15	No	2018	Soil Run-Off
Turbidity (% of samples meeting standard)*	NA	TT	100%	100%	No	2018	Soil Run-Off
TOC** (mg/L)	NA	TT	1.81	1.50 - 2.11	No	2018	Naturally Present in the Environment
Inorganic Contaminants							
Fluoride (ppm)	4	4	0.15	NA	No	2018	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Barium (ppm)	2	2	0.083	NA	No	2018	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrate (ppm)	10	10	0.79	0.21 - 0.79	No	2018	Run off from fertilizer use, Leaching from septic tanks, sewage; Erosion of natural deposits
Radioactive Contaminants							
Gross Alpha	0	15	5.3	NA	No	2018	Erosion of natural deposits
Lead and Copper							
Contaminants (units)	Action Level (AL)	Individual Results over the AL	90% of test levels were less than	Violation	Sample Year	Typical source of Contaminants	
Lead (ppb)	15 ppb	16ppb	2.1	No	2018	Corrosion of household plumbing systems; erosion of natural deposits	
	1 sample was found to have lead levels in excess of the lead action level of 15 ppb.						
Copper (ppm)	1.3 ppm	NA	0.447	No	2018	Erosions of natural deposits; leaching from wood preservatives; Corrosions of household plumbing systems	
	0 samples were found to have copper levels in excess of the copper action level of 1.3 ppm.						

*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 0.30 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 2017 was 0.29 NTU and the lowest monthly percentage of samples meeting the turbidity limits was 100%.

**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.

***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.

VIOLATIONS

TT VIOLATION	EXPLANATION	LENGTH	STEPS TAKEN TO CORECT THE VIOLATION	HEALTH EFFECT LANGUAGE
FAILED TO MAINTAIN A MINIMUM RESIDUAL OF 7.0 MG/L FOR SILICA	BETWEEN APRIL 23 RD , 2018 AND MAY 23 RD , 2018, HEAVY RAINS CAUSED THE NATURAL SILICA LEVELS IN THE SOURCE WATER TO DROP. THIS RESULTED IN A PERIOD IN WHICH THE SILICA LEVEL IN THE TAP WATER REACHED 6.6 MG/L	32 DAYS	AS DIRECTED BY THE OHIO EPA, WE IMMEDIATELY BEGAN TO INCREASE THE NUMBER OF SAMPLES TAKEN TO MONITOR LEAD AND COPPER LEVELS IN THE DISTRIBUTION SYSTEM. WE ALSO BEGAN TO BLEND MORE GROUND WATER AS THIS HAS A HIGHER SILICA CONTENT.	INADEQUATELY PROTECTED WATER MAY BE SUSEPTABLE TO LEACHING LEAD AND/OR COPPER INTO THE SYSTEM FROM PIPING OR SOLDER CONTAINING THESE MATERIALS.

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 William Wallace, Plant Manager, with the Mansfield Water Treatment Plant at (419) 884-3310. We will be pleased to answer your questions.