What is This Paper?

The City of Defiance Water Division has prepared the following report to provide information to you, the consumer, on the quality of our drinking water. Included within this report is general health information, water quality test results, how to participate in decisions concerning your drinking water and water system contacts. Please share this information with other water consumers, such as renters and customers, who may not have received a copy of this report by mail.

The City of Defiance operates under an unconditional license from the Ohio EPA. Our Public Water System Identification (PWSID) is OH2000111 and is valid until January 30, 2018.

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

Tài liệu này có tin tức quan trọng về nước uống của quý vị. Hãy nhờ người dịch cho quý vị, hoặc hỏi người nào hiểu tài liệu này.

此报告包含有关您的饮用水的重要信息。请人帮您翻译出来，或请看懂此报告的人将内容说给您听。

How Do I Get Involved?

You are invited to attend the City Council meetings to voice your concerns about your drinking water. City Council Meetings are open to the public and are held at 631 Perry Street on the first second and fourth Tuesdays of each month at 7:00 pm.

You can also help by keeping the streams and rivers clean and reporting any potential spills or pollution sources. Accidental or unauthorized releases of contaminants to the air, land or water such as spills, releases, intentional dumping or emissions can be reported to Ohio EPA 24-hour EMERGENCY RESPONSE hotline at 800-282-9378. You can also call the Water Treatment Plant at 419-782-1886.

Need More Information?

If you would like more information on water in Defiance or if you would like to get a small group together (friends, family, church, school, 4-H, or whatever) and take a tour of the Water Treatment Plant, then call us for information. Administrative office hours are Monday- Friday 8am-4pm.

Adam J McDowell, Water Superintendent

1356 Baltimore Street, Defiance, Ohio 43512

Phone: 419-782-1886 Fax: 419-782-6510

Email: amcdowell@cityofdefiance.com

For more information about water related issues, please visit the following sites online:

Ohio EPA Public Interest Center at:

www.epa.state.oh.us/pic/

American Water Works Association at:

www.drinktap.org/consumerdnn/

1-800-362-2764
OHIO Utilities Protection SERVICE
Call Before You Dig

AWWA MEMBER

City of Defiance Water Treatment Division

2016 Annual Water Quality Report

In 2016, the Water Plant treated just over one billion gallons of water, with an average daily flow of 2.943 million gallons per day (mgd). This was a 4% increase from 2015. Our peak daily flow was 4.26 mgd which was slightly higher than 2015's high of 4.23 mgd. The distribution system delivers the treated water to City of Defiance customers and the surrounding area through more than 111 miles of waterlines. Defiance also supplies water to Christi Meadows, Brunersburg, and Ayersville. Customers in these satellite systems should receive a report similar to this from their system managers.

Monitoring & Reporting Violations & Enforcement Actions

The Defiance Water Division is pleased to report that no monitoring violations, reporting violations or enforcement actions were received from the Ohio EPA during the 2016 calendar year.

Where Does My Water Come From?

Defiance uses surface water from the Maumee River and the Upper Maumee Watershed. An estimated 57% of Ohio's population gets its drinking water from surface water sources. Water from the Maumee River is pumped through a 30" pipe to the reservoir located on Precision Way. Here the water has a chance to settle, providing the water plant with a more consistent water quality. The water then flows by gravity through a 42" pipe to the Water Plant for treatment. This allows the reservoir to act as a pretreatment basin and as an isolated source of supply during times when large amounts of silt and other contaminants such as nitrates and ammonia can be washed into the river making the water hard to treat.

Source Water Assessment and Watershed Protection

The City of Defiance public water system uses surface water drawn from an intake on the Maumee River. For the purposes of source water assessments in Ohio, all surface waters are considered to be susceptible to contamination. By their nature, surface waters are readily accessible and can be contaminated by chemicals and pathogens which may rapidly arrive at the public drinking water intake with little warning or time to prepare. The City of Defiance's drinking water source protection area contains potential contaminant sources such as agriculture, home construction, industrial and commercial businesses, septic systems, wastewater treatment plants, roadways and railways.

The City of Defiance's public water system treats the water to meet drinking water quality standards, but no single treatment technique can address all potential contaminants. The potential for water quality impacts can be further decreased by implementing measures to protect the Maumee River. More detailed information is provided in the City of Defiance's Drinking Water Source Assessment Report. Requests for a copy of the 21 page report must be made in writing to the City of Defiance Water Superintendent. The City of Defiance is currently working with the Upper-Maumee Watershed Partnership, which is a group of local agencies, businesses and citizens concerned about protecting the environment and our source of drinking water. If you are interested in participating or just learning more, contact the Defiance Water Plant at 419-782-1886, or Jason Roehrig at the Defiance County Soil and Water Conservation District Office at 419-782-8751.

What are Some 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: (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 Strom 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 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 Federal 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).

Specific Contaminant Information

Fluoride and Infants

The following information is from the American Dental Association

Since fluoride levels in both tap and bottled water can vary, parents and caregivers should first consult with their pediatrician, family physician, or dentist on the most appropriate water to use in their area to mix infant formula. Some children may have special medical needs, so be sure to ask your family physician or pediatrician whether water used for infant formula should be sterilized.

Atrazine

Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties. For more information on atrazine go to:

www.epa.gov/pesticides/factsheets/atrazine.htm

Turbidity

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 NTU at any time. As reported above, the Defiance WTP highest recorded turbidity result for 2016 was 0.22 NTU and lowest monthly percentage of samples meeting the turbidity limits was 100%.

Lead Educational Information

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. Defiance WTP 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 at 800-426-4791 or at

http://www.epa.gov/safewater/lead.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (1-800-426-4791).

Revised Total Coliform Rule (RTCR) Information

This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2016. All water systems were required to comply with the Total Coliform Rule from 1989 to March 31, 2016, and begin compliance with a new rule, the Revised Total Coliform Rule, on April 1, 2016. The new rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of total coliform bacteria, which includes E. coli bacteria. The U.S. EPA anticipates greater public health protection under the new rule, as it requires water systems that are vulnerable to microbial contamination to identify and fix problems. As a result, under the new rule there is no longer a maximum contaminant level violation for multiple total coliform detections. Instead, the new rule requires water systems that exceed a specified frequency of total coliform occurrences to conduct an assessment to determine if any significant deficiencies exist. If found, these must be corrected by the PWS.

About your drinking water

The EPA requires regular sampling to ensure drinking water safety. The Defiance WTP conducted sampling for bacterial; inorganic; radiological; synthetic organic; and volatile organic contaminants during 2016. Samples were collected for a total of 43 different contaminants most of which were not detected in the Defiance City water supply. 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.

From time to time, rust from the inside old iron water mains or from your plumbing may be dislodged by high flow. During certain times of year, taste and odor problems may occur due mainly to algae in the raw water supply. Defiance Water is working hard to control and eliminate these problems from our water. If you have questions or concerns about your water, contact the Water Treatment Plant office at 419-782-1886.

Definitions of some terms contained within this report.

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.

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 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.

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

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

Contact Time (CT) means the mathematical product of a "residual disinfectant concentration" (C), which is determined before or at the first customer, and the corresponding "disinfectant contact time" (T).

Microcystins: Liver toxins produced by a number of cyanobacteria. Total microcystins are the sum of all the variants/congeners (forms) of the cyanotoxin microcystin.

Cyanobacteria: Photosynthesizing bacteria, also called blue-green algae, which naturally occur in marine and freshwater ecosystems, and may produce cyanotoxins, which at sufficiently high concentrations can pose a risk to public health.

Cyanotoxin: Toxin produced by cyanobacteria. These toxins include liver toxins, nerve toxins, and skin toxins. Also sometimes referred to as "algal toxin".

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.

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.

Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. This sampling was performed in 2014 and a table of those results follows.

	Plant Tap	Distribution	Advisory Limits
Chlorate (ppb)	190.5	193.5	N/A
Chromium, Hexavalent (ppb)	0.57	0.51	N/A
1,4-Dioxane (ppb)	0.092	N/A	N/A
Chromium (ppb)	0.545	0.525	100
Molybdenum (ppb)	10.2	10.4	200
Strontium (ppb)	545	530	20000

TABLE OF DETECTED CONTAMINANTS

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Bacteriological							
Turbidity (NTU)	N/A	TT	0.22	0.01-0.22	No	2016	Soil Water Runoff
Turbidity (Samples meeting Standards	N/A	TT=95%	100%	100%	No	2016	
Total Coliform Bacteria (TC)	0	1	0	0%	No	2016	Naturally present in environment
Microcystins (ppb)	*	N/A	0	0	No	2016	Produced by some naturally occurring cyanobacteria, also known as blue-green algae, which under certain conditions (i.e., high nutrient concentration and light intensity) may produce microcystins.
* 0.3 AL for children under 6 and sensitive populations 1.6 for children 6 and older and adults							
Total Organic Carbon (TOC)	TT	N/A	2.25	1.9-2.9	No	2016	Naturally present in environment
The value reported under "Level Found" for TOC is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of the TOC removal requirements.							
Radioactive Contaminants							
Combined Radium 226/228 (pCi/L)	0	5	2.50	2.50	No	2014	By-product of drinking water chlorination
Inorganic Contaminants							
Fluoride (ppm)	4	4	1.10	0.80-1.24	No	2016	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (ppm)	10	10	3.05	0.69-3.05	No	2016	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium (ppm)	2	2	0.048	0.0480	No	2016	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Synthetic Organic Contaminants including Pesticides and Herbicides							
Atrazine (ppb)	3	3	0.15	0.11-0.22	No	2016	Runoff from herbicide used on row crops.
Simazine (ppb)	4	4	<0.05	<0.05	No	2016	Runoff from herbicide used on row crops.
Volatile Organic Contaminants							
Total Trihalomethanes (TTHM) (ppb)	N/A	80	70.4	36.8-88.3	No	2016	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	N/A	60	30.4	15.1-41.2	No	2016	By-product of drinking water chlorination
Residual Disinfectants							
Total Chlorine (ppm)	MRDLG=4.0	MRDL=4.0	1.53	0.6-2.2	No	2016	Water additive used to control microbes.
Lead and Copper							
Contaminants (units)	**Action Level (AL)**	**Individual Results over the AL**	**90% of test levels were less than**	**Violation**	**Year Sampled**	**Typical source of Contaminants**	
Lead (ppb)	15 ppb	1 sample (23ppb)	<2	No	2016	Corrosion of household plumbing systems; Erosion of natural deposits.	
	1 out of 31 samples was found to have lead levels in excess of the lead action level of 15 ppb.						
Copper (ppm)	1.3 ppm	0	0.0473	No	2016	Corrosion of household plumbing systems; Erosion of natural deposits.	
	0 out of 31 samples were found to have copper levels in excess of the copper action level of 1.3 ppm.						

Table of Detected Contaminants

Listed below is information on those contaminants that were found in Defiance drinking water.