

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 a license from the Ohio EPA. Our Public Water System Identification (PWSID) is OH2000111 and is valid until January 30, 2016.



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?

For more information on water in Defiance or if you would like to take a tour of the Water Treatment Plant, get a small group together (friends, family, church, school, 4-H, or whatever) then call to schedule a date and time.

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/



City of Defiance Water Treatment Division

2014 Annual Water Quality Report

What's New With Our Water Utility?

Since 1916 the Defiance Water Treatment Plant has been serving this city with the water that it needs every day to exist. Through this time many challenges have been faced by its operators. Of these problems, compliance with changing regulations can sometimes prove to be the hardest to solve. As was predicted in the last Consumer Confidence Report, Defiance was out of compliance in the first three quarters of 2014 for Total Trihalomethanes (TTHM's). Several strategies including Plant optimization and altered distribution system operation have been utilized thus far and compliance was again restored in the fourth quarter of 2014.

Additional steps are being taken to further ensure the maintained compliance for this contaminant. A new Clearwell Aeration System designed to remove TTHM's is complete and online. We have also budgeted to have equipment installed in Carpenter Road Tower to help reduce the TTHM's that have reformed in the system. The replacement of the water tower on Greenler Street is also scheduled to begin this year. This 1 million gallon tower will replace the 300,000 gallon tower located there currently. This tower will allow for even more improved optimization of the system and will also include TTHM removal equipment.

Last year (2014) also marked the completion of the three year project to replace the media in our filters. During 2015 we will conclude the four year Clarifier Sandblasting and Repainting project. In addition, other work that is planned this year includes a replacement of the sodium hypochlorite (chlorine) feed system to improve its reliability and functionality.

In 2014, the Water Plant treated just over one billion gallons of water, with an average daily flow of 2.98 million gallons (mgd). This was an 8% decrease from 2013. Our peak daily flow was 4.33 mgd which was considerably lower than 2013's high of 4.73 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. We welcome your comments and questions when they arise. Our contact information is provided on the front page of this report.

Defiance Reservoir Amenities

Whether it is a lazy day fishing, a game of disc golf, or maybe even a long run, the reservoir adds many recreational opportunities. A new walking path will be installed in 2015 and was funded by a grant from the ODOT. The City, in connection with several local citizens, has established a reservoir subcommittee to determine how best to utilize the reservoir and surrounding acreage. The Subcommittee is currently looking for funding to help with these improvements. If you would like to get involved or are interested in information on funding a future project, contact Rob Cereghin, Service Director at 419-784-2745.

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 and bottled) includes 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; and (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 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.

Fluoride

Some people who drink water containing fluoride well in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled or discolored teeth. For more information on water fluoridation, go to:

www.fluoridealert.org

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 in 95% of the daily samples and shall not exceed 1 NTU at any time. As reported on the contaminant table, the Defiance Water Plant's highest recorded turbidity result for 2014 was 0.20 NTU and lowest monthly percentage of samples meeting the turbidity limits was 100%

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. Defiance Water Division 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 thirty seconds to two 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. A list of laboratories certified in the State of Ohio to test for lead may be found at <http://www.epa.state.oh.us/ddagw> or by calling 614-644-2752. 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 800-426-4719 or at:

www.epa.gov/safewater/lead

Monitoring & Reporting Violations & Enforcement Actions

During 2014 the Defiance Water System violated the maximum contaminant level (MCL) for Total Trihalomethanes (TTHM's) during the first, second, and third quarters of the year. These samples are collected quarterly and the results are published at the end of each quarter. This was reported previously but is required to be included in this document as well. The levels detected do not pose an immediate risk to your health. However, some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. The Locational Running Annual Average LRAA standard for TTHMs is 0.080 mg/l. The average of the highest location during the first quarter was 0.097, second quarter was 0.094, and third was 0.090.

To combat this problem, the city's water professionals have undertaken an aggressive plan to lower these levels in our system. Some of the steps to this plan include changing our pumping cycles to facilitate larger turnover in the water towers to decrease the age of the water held in

the distribution system. This reduction of "water age" has allowed us to reduce the level of chlorine dosage which among other things led us to compliance in the fourth quarter of 2014.

An aeration system which went online in January of 2015, was another of the components of the plan for compliance. This equipment is installed in one of the underground storage tanks located at the water plant. This followed a pilot study illustrating the effectiveness of this technology in removal of the compounds that are formed prior to the water exiting the plant.

Changes in our water towers are planned as well. The tower located at Greenler Street which was constructed in 1936, is scheduled for replacement this year. A TTHM removal system is planned for installation in the Carpenter Road Tower as well. These changes will allow for even more turnover of the towers and should ensure compliance for the future.

About Your Drinking Water

The EPA requires regular sampling to ensure drinking water safety. The City of Defiance Water Division conducted sampling for bacteria, inorganic, radiological, and synthetic organic and volatile organic contaminants during 2014. Samples were collected for more than 100 different contaminants, most of which were not detected in the Defiance water supply. Listed on the chart in this brochure is information on those contaminants that were found in the City of Defiance water during 2014. The Ohio EPA requires systems 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, is more than one year old. However, the Defiance Water Division is just as concerned about these aspects of its drinking water. 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.

2014 TEST RESULTS FOR CITY OF DEFIANCE WATER DIVISION

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.

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.

Maximum Residual Disinfectant Level (MRDL): The highest residual disinfectant level 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 residual 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.

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.

IDSE: Initial Distribution System Evaluation. This EPA required study will be conducted over the next several year to evaluate these disinfection byproducts throughout the water distribution system.

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detection	Violation Yes/No	Year Sampled	Typical Sources of Contaminants
Microbiological Contaminants							
Turbidity (NTU)	N/A	TT	0.12	0.05-0.12	No	2014	Soil Water Runoff
Turbidity (% Samples meeting standard)	N/A	TT=95 %	100%	100%	No	2014	
Total Coliform Bacteria (TC)	0	1	0	0%	No	2014	Naturally present in the environment
Total Organic Carbon (TOC)	TT	N/A	2.19	1.9-2.6	No	2014	Naturally present in the 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.							
Residual Disinfectants							
Total Chlorine (ppm)	MRDLG =4.0	MRDL =4.0	1.71	0.4-2.5	No	2014	Water additive used to control microbes.
Inorganic Contaminants							
Copper (ppb)	1350	AL = 1350	89	N/A	No	2013	Corrosion of household plumbing systems; Erosion of natural deposits.
	No samples were found to have copper levels in excess of the Action Level of 1350 ppb.						
Lead (ppb)	0	AL = 15	< 2.0	N/A	No	2013	Corrosion of household plumbing systems; Erosion of natural deposits.
	No samples were found to have lead levels in excess of the Action Level of 15 ppb.						
Fluoride (ppm)	4	4	1.1	0.82-1.22	No	2014	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (ppm)	10	10	3.13	0.37-3.13	No	2014	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium (ppm)	2	2	0.0160	0.0160	No	2014	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Synthetic Organic Contaminants including Pesticides & Herbicides							
Atrazine (ppb)	3	3	0.078	0.07-0.094	No	2014	Runoff from herbicide used on row crops.
Simazine (ppb)	4	4	0.1	0.0 - 0.1	No	2014	Runoff from herbicide used on row crops.
Volatile Organic Contaminants							
Total Trihalomethanes (TTHM) (ppb)	N/A	80	81.5/96.7	33.1-116.0	Yes	2014	By-product of drinking water chlorination
Haloacetic Acid (HAA5) (ppb)	N/A	60	24.9	11.6-33.2	No	2014	By-product of drinking water chlorination
RadioActive Contaminants							
Combined Radium 226/228 (pCi/L)	0	5	2.50	2.50	No	2014	By-product of drinking water chlorination