WRIGHT STATE UNIVERSITY

Drinking Water Consumer Confidence Report

WRIGHT STATE UNIVERSITY

2018

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For more information please contact:	
Environmental Health and Safety	937-775-2215
Facilities Management and Campus Operations	937-775-4444
US EPA Safe Drinking Water Hotline	1-800-426-4791

Wright State University Drinking Water Consumer Confidence Report for 2018

Introduction

The Wright State University Public Water System 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.

Source Water Information

Wright State University receives its drinking water from two wells drilled below the earth's surface. The first well was installed in 1968 and is still in operation today. These wells are located over the Mad River Buried Valley Aquifer, which are located at the northwest end of Lot #20 and adjacent to Kauffman Road.

Wright State University is a community public water system serving approximately 17,000 people. Its public water system (PWS) number is OH2902012 and name is Wright State University. It is classified as a type C – Community public water system and its source is from groundwater (GW). A community public water system is a system that has at least 15 service connections used by year-round residents of the area or regularly serves 25 or more year-round residents. The system is designed to produce 1,008,000 gallons per day (GPD) and Wright State's average use is 200,000 GPD. The treatment process includes iron and manganese removal, ion exchange softening to remove minerals, and chlorine disinfection to eliminate bacteria. One elevated storage tank holds 125,000 gallons. An auxiliary supply is available by two connections to Fairborn's water system.

The 1996 Amendments to the Safe Drinking Water Act require the Ohio Environmental Protection Agency (OEPA) to conduct source water assessments for all Public Water Systems (PWS's). In 2002, the Ohio EPA completed an assessment and provided information to assist Wright State to understand the potential threats to their water supply and help them protect their water supply.

According to the study, the aquifer that supplies the drinking water to the Wright State University has a high susceptibility to contamination. This determination was made because of the following reasons:

- The sand and gravel aquifer is shallow with a depth to water that ranges from 15-30 feet below the surface; and
- there is no confining layer which could act as a barrier between the ground surface and the aquifer; and
- there are potential contaminant sources that exist within and just outside the Drinking Water Source Protection Area that could potentially impact Wright State University's drinking water.

Consequently, the likelihood that the Wright State University's source of drinking water could become contaminated is high and it is critical that potential contaminant sources are handled carefully with the implementation of the appropriate protective strategies.

Copies of the Source Water Assessment Report prepared for Wright State University's Public Water Supply are available at Ohio EPA's website at http://wwwapp.epa.ohio.gov/gis/swpa/OH2902012.pdf or by contacting Marjorie Markopoulos, PhD, Director of Environmental Health and Safety at marjorie.markopoulos@wright.edu or 937-775-2797.

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides - they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Wright State's Public Water System also has an emergency connection with the City of Fairborn. Wright State may blend or use water with water from the City of Fairborn to ensure chloride levels remain consistently below the chloride secondary MCL level of 250 mg/L or for other operational needs. In 2018, Wright State used 3,187,300 gallons from the City of Fairborn over 13 days between August 9 and August 22, 2018 due to a lack of chlorine inventory during a supplier change. Inventory procedures and controls were reviewed to ensure a constant supply of chlorine for plant operations. This report does not include information for the water supplied from the City of Fairborn. A copy of Fairborn's 2018 Consumer Confidence Report can be obtained by visiting the City of Fairborn Water Department website at https://www.fairbornoh.gov/EPA approved 2018 CCR1.pdf or by making a written request to: Fairborn Division of Water and Sewer, 44 W. Hebble Ave, Fairborn, OH 45324.

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:

- ***Microbial contaminants***, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife;
- ***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;
- ***Pesticides and herbicides***, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses;
- ***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
- ***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).

About your drinking water

The EPA requires regular sampling to ensure drinking water safety. Wright State University conducted sampling for ***bacteria; inorganic; synthetic organic; volatile organics*** during **2018**. Samples were collected for a total of 21 different contaminants most of which were not detected in the Wright State University 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.

Monitoring & Reporting Violations & Enforcement Actions

During the month of November 2018, Wright State University received a reporting violation for the annual Consumer Confidence Report (CCR) report and for failing to report the November 2018 Monthly Operating Report (MOR) by the 10th of December. Steps have been taken to ensure all reporting will be completed as required by employing a more comprehensive review plan. The CCR review will include using reference materials provided by Ohio EPA and the reporting plan assigns responsibility for reporting and contains contingency measures if the assigned personnel are absent. An amended 2017 Consumer Confidence Report to incorporate the required elements is available at http://www.wright.edu/file/268351.

Table of Detected Contaminants

The Table of Detected Contaminants contains the information on those contaminants that were found in the Wright State University drinking water.

Unregulated Contaminant Monitoring Rule (UCMR4) Sampling

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. In 2018 Wright State University participated in the fourth round of the Unregulated Contaminant Monitoring Rule (UCMR 4).

The UCMR4 results are a primary source of information on occurrence and levels of contaminant exposure that the EPA uses to develop regulatory decisions for contaminants in the public drinking water supply. As part of the rule, Wright State has to sample for the contaminants under List 1. List 1 includes (2) metals, (9) pesticides, (3) alcohols, (3) semi-volatiles, and (3) brominated haloacetic acid groups. The sampling period for Wright State started in December 2018 and will run through 2019. Different samples are collected at different times. As with the previous rules of this nature, once the all the sampling is complete (after 2019), the data will be available on Wright State's website and provided in that year's annual water quality report. For more information on the rule go to epa.gov and search for UCMR4

For a copy of the results please call the Department of Environmental Health and Safety at 937-775-2215 or email at ehs@wright.edu.

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit **www.epa.gov/watersense** for more information.

Table of Detected Contaminants

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Inorganic Contaminants							
Arsenic (ppb)	0	10	4.99	NA	NO	2014	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2	2	0.126	NA	NO	2017	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	4	4	0.61	NA	NO	2017	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (ppm)	10	10	0.154	NA	NO	2018	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
Residual Disinfectants							
Total Chlorine (mg/L)	MRDLG 4	MRDL 4	0.95	0.60-1.31	NO	2018	Water additive used to control microbes.
Disinfection Byproducts							
Haloacetic Acids (ppb)	0	60	<1	<1	NO	2018	Byproduct of drinking water chlorination
TTHMs [Total Trihalomethanes] (ppb)	0	80	23.56	3.07 - 23.56	NO	2018	Byproduct of drinking water chlorination
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	2 *(1) Nutter Center 15.2* *(2) Hamilton Hall 19.1*	8.67	NO	2018	Corrosion of household plumbing systems, erosion of natural deposits	
	2 out of 30 samples were found to have lead levels in excess of the lead action level of 15 ppb.						
Copper (ppm)	1.3	NA	0.282	NO	2018		
	0 out of 30 samples were found to have copper levels in excess of the copper action level of 1.3 ppm.						

While your drinking water meets the EPA's standard for arsenic, it does contain low levels of arsenic. The EPA's standard balances the current understanding of possible health effects of arsenic against the cost of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Unregulated Contaminants

Unregulated Contaminants (Units)	Average Level Found	Range of Detections	Sample Year	Typical Source of Contaminants
Hardness (ppm)	252	73-516	2018	Erosion of natural deposits
Iron (ppm)	0.06	<0.05-0.68	2018	Naturally occurring
Manganese (ppm)	<0.005	<0.005-0.007	2018	Naturally occurring; Indicative of landfill contamination
Chloride (ppm)	226	160-280	2018	Naturally occurring or road salt
Chloroform (ppb)	3.21	0-6.42	2018	Byproduct of drinking water chlorination.
Bromoform (ppb)	2.2	0.95-3.45	2018	
Bromodichloromethane (ppb)	3.6	0.68-6.52	2018	By-product of drinking water chlorination
Dibromochloromethane (ppb)	4.35	3.07-23.65	2018	
Bromide (ppb)	78.8	NA	2018	Naturally occurring
Haloacetic Acid (HAA5) (ppb)	2.73	1.81-3.18	2018	By-product of drinking water chlorination
Haloacetic Acid (HAA9) (ppb)	7.89	6.88-9.25	2018	
Haloacetic Acid (HAABr) (ppb)	6.45	3.98-8.40	2018	
Molybdenum (ppb)	8.6	8.6-8.6	2015	Naturally occurring; Used in production of steel and alloys; Used for electronic components
Strontium (ppb)	602	460-743	2015	Naturally occurring
Vanadium (ppb)	0.12	NA	2015	Naturally occurring; Coal and petroleum crude oils; Used in milling processes, coal burning and phosphate fertilizers
Chromium, Hexavalent (ppb)	0.336	0.176-0.496	2015	Discharge from steel and pulp mills; Erosion of natural deposits
Chromium (ppb)	0.23	NA	2015	

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. Wright State University 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 800-426-4791or at http://www.epa.gov/safewater/lead.

Ground Water Rule

On December 20, 2013, Wright State University received a Notice of Violation (NOV) relating to the road salt storage impacts to ground water in Wright State's wellfield. It was observed that the chloride levels in tested from the drinking water source wells had been increasing since the mid-1980s. In 2013, the chloride levels were measured at 390 ppm, which exceeds the Secondary Maximum Contaminant Level (SMCL) of 250 ppm. SMCL's are non-mandatory guidelines and are established to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color and odor.

From that time, Wright State has been working closely with the Ohio EPA to remediate and reduce the contaminant. Throughout 2013 to 2016, Wright State purchased approximately 40,000 to 60,000 gallons of water daily from the City of Fairborn to blend with the raw water from the Wright State wells to dilute the chloride concentrations below the SMCL. Additional corrective measures implemented included moving the salt storage barn, reviewing and improving well field protective measures, and developing long-term remediation solutions reduced the chloride levels below the SMCL in 2016. Wright State continues to work with the Ohio EPA on additional measures to remediate, protect, and improve the water in the aquifer, specifically for the Notice of Violation for the Water Treatment Plant/Perched Water Bearing Zone (PWBZ).

Additional information on SMCL's can be found at https://www.epa.gov/dwregdev/drinking-water-regulations-and-contaminants#Secondary.

Revised Total Coliform Rule (RTCR) Information

All water systems were required to 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 Public Water System (PWS).

License to Operate (LTO) Status Information

In 2018 Wright State had an unconditioned license to operate our water system.

Public Participation and Contact Information

How do I participate in decisions concerning my drinking water?

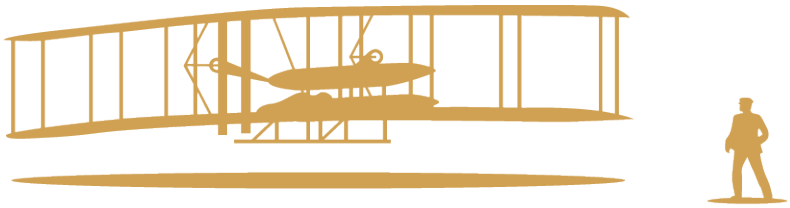
While we do not hold regular meetings, customers are encouraged to participate by contacting:

Marjorie Markopoulos, PhD
Director of Environmental Health and Safety
937-775-2797
marjorie.markopoulos@wright.edu

Definitions of some terms contained within this report.

Unit Descriptions	
Term	Definition
ppm	parts per million, or milligrams per liter (mg/L). A part per million corresponds to one second in a little over 11.5 days.
ppb	parts per billion, or micrograms per liter (µg/L). A part per billion corresponds to one second in 31.7 years.
NA	Not applicable
ND	Not detected
NR	Monitoring not required, but recommended.
"<" 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.

Important Drinking Water Definitions	
Term	Definition
MCLG	Maximum Contaminant Level Goal: 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.
MCL	Maximum Contaminant Level: 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.
TT	Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	Maximum residual disinfection level goal. The level of a 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.
MRDL	Maximum residual disinfectant level. 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.
MNR	Monitored Not Regulated
MPL	State Assigned Maximum Permissible Level
SMCL	Secondary Maximum Contaminant Level are non-mandatory water quality standards that are used as guidelines to assist public water systems in managing their drinking water for aesthetic considerations such as taste, color, and odor.
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".



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