



This report is a requirement of the Safe Drinking Water Act Amendments of 1996. The purpose of this report is to provide the public with information concerning the quality of drinking water during the previous calendar year.

The Northern Area Water Authority (NAWA) obtains its public drinking water supply from buried sand and gravel aquifers associated with the Great Miami River. NAWA currently utilizes six production wells to draw water from the aquifer. Well water is pumped to the treatment plant where it is run through sand filters for Iron and Manganese removal. Nanofiltration membranes are used for the reduction or removal of hardness, viruses, and other contaminants. Chlorine is added for disinfection, Fluoride is added for dental health, and Orthophosphate is added to minimize corrosion or scaling in the distribution system. NAWA has a current, unconditioned license to operate its Public Water System issued by the Ohio EPA on January 1, 2018. For information regarding this report or additional information regarding water quality, contact Lisa Hendricks, Plant Supervisor, 937-506-3200. "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."

### Water Quality Results

#### Regulated Contaminants

Substance	Highest Level Detected	Highest Level Allowed (MCL)	Ideal Goals (MCLG)	Range of Detects	Date of Sample	Violation	Sources of Substances
Nitrate	0.665	10 ppm	10	0.665	8/14/2017	NO	Runoff from fertilizer use
Total Chlorine	1.39 ppm	4.0 ppm	4.0	.31 - 1.39	2017	NO	Water disinfectant
Fluoride	1.24 ppm	4.0 ppm	4.0	0.80-1.06	2017	NO	Erosion of natural deposits
Total Coliform	1* ppm	1 positive/month	0	0 - 1	April - 2017	NO	Naturally present in environment
Barium	0.087 ppm	2.0	2	0.087	2015	NO	Discharge of drilling, erosion of natural deposits

Last required session was 2015

\* 3 repeat and a source water sample were collected in accordance with Ohio EPA regulations. All repeat samples were negative.

Possible contamination may have occurred at the time of sampling, sample handling, or laboratory testing.

\*\* NAWA received a violation of OAC Rule 3745-81-51 in September, 2017 for failure to comply with Total Choliform monitoring requirements.

During the month of September, NAWA collected 24 of the required 25 samples of which all 24 were negative for Total Choliform.

	Action level (AL)	Individual results over the AL	90% of test levels were less than	Date Sampled	Violation	
Copper* ppm	1.3 ppm	Zero	0.437 ppm	2016	NO	Corrosion of household plumbing

**\*Zero out of 30 samples were found to have copper levels in excess of the action level of 1.3 ppm**

	Action level (AL)	Individual results over the AL	90% of test levels were less than	Date Sampled	Violation	
Lead	15 ppb	Zero	0.00	2016	NO	Corrosion of household plumbing

\*\*Lead 90% percentile result was 3.44 and in the acceptable range of 15.0

**\*Zero out of 30 samples were found to have lead levels in excess of the action level of 15 ppb**

"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. NAWA 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. Onformation on lead in drinking water , testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>."

	9.17 ppb	60 ppb	NA	6.4 - 9.1	2017	NO	By product of disinfection***
Haloacetic Acids	9.17 ppb	60 ppb	NA	6.4 - 9.1	2017	NO	By product of disinfection***
Total Trihalomethanes	39.59 ppb	80 ppb	0	28.1 - 39.5	2017	NO	disinfection***

"Disinfection byproducts are grouped into two categories, Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). USEPA sets standards for controlling the levels of disinfectants byproducts in drinking water, including both TTHMs and HAA5s."

#### Unregulated Contaminants

	3.0 ppb	n.r.	n.r.	2.4 - 3.0	2017	NO	Components of Total
Dibromochloromethane	3.0 ppb	n.r.	n.r.	2.4 - 3.0	2017	NO	Components of Total
Chloroform	28.9 ppb	n.r.	n.r.	20.0 - 28.9	2017	NO	Trihalomethanes
Bromodichloromethane	7.22 ppb	n.r.	n.r.	6.3 - 7.2	2017	NO	(TTHMs) and
Trichloroacetic acid	4.56 ppb	n.r.	n.r.	4.14 - 4.56	2017	NO	Haloacetic Acids (HAA5)
Dichloroacetic	4.61 ppb	n.r.	n.r.	2.31 - 4.56	2017	NO	

#### Key to Abbreviations and Terminology Used in this Report

Action Level - the concentration of a contaminant that triggers the public water system to install other treatment technologies to reduce the concentration of the contaminant.

MCL - Maximum Contaminant Level. The highest level of contamination that is allowed in drinking water.

MCLG - Maximum Contaminant Level Goal. The level of a contaminant in drinking water below which there is no known or expected health risk.

TTHM - Total Trihalomethanes.

HAA5 - Haloacetic Acids.

N/A - not applicable

n.r. - not regulated. USEPA has not established a MCL or MCLG.

ppb - parts per billion. In some sources, ppb is referred to as "ug/l", or micrograms per liter.

ppm - parts per million. In some sources, ppm is referred to as "mg/l", or milligrams per liter.

#### EPA required health information

"Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791)."

"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 (800-426-4791)."

#### 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 waste-water discharges, oil and gas production, mining, or farming; (C) Pesticides and herbicides which may come from a variety of sources such as agricultural, 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 the result of oil and gas production and mining activities.

#### Susceptibility analysis

The aquifer that supplies drinking water to NAWA's wells has a high susceptibility to contamination due to the following:

1. Water quality results indicate impacts of nitrates.
2. The sand and gravel aquifer has a depth to water of 5-15 feet below the ground surface.
3. The sand and gravel aquifer material is continuous to the surface and the soil is sandy.
4. No confining layer exists which could act as a barrier between the ground surface and the aquifer.
5. Potential significant contamination sources exist within the protection area.

#### Ground water protection

The City of Tipp City developed and implemented a ground water monitoring protection program in 1996. Six monitoring wells are currently used to study ground water quality upgradient of the well field area. This serves as an "early warning" device should dangerous contaminants threaten our well field. In 1994, Tipp City developed a Well Head Protection Program. This program served to inventory potential sources of ground water contamination within a 5-year "time of travel" zone around our existing wells. Special zoning regulations have been adopted to further reduce the risk of ground water contamination within a 1-year "time of travel" zone around the wells. Public information will play a key role in providing additional risk reduction to protect this very important resource. For further information regarding our Well Head Protection Program or Source Water Assessment, please contact Lisa Hendricks at 937-560-3200.

#### Public participation

Public participation and comments are encouraged at the regular council meetings of the City of Tipp City and City of Vandalia Councils.

City of Tipp City Council meets the 1st and 3rd Monday of each month at 7:30 P.M. These meetings are held at the Tipp City Government Center, located at 260 S. Garber Drive.

City of Vandalia Council meets the 1st and 3rd Monday of each month at 7:00 P.M. These meetings are held at the Vandalia Municipal Building, located at 333 James E. Bohanan Memorial Drive.