JEFFERSON COUNTY WATER AND SEWER DISTRICT

2017 Drinking Water Consumer Confidence Report
For Service Area J

Introduction

The Jefferson County Water and Sewer District (JCWSD) 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.

License to Operate (LTO) Status

We have a current, unconditional license to operate our water system.

Source Water Information

The JCWSD does not own a water treatment plant. Therefore, it must purchase all the water it delivers to its customers from various suppliers. The vast network of pipelines, storage tanks, and booster pump stations used to distribute water by the JCWSD are divided into different service areas. The Table below lists the different service areas and corresponding supplier.

SERVICE AREA	SUPPLIER
B-1, M, PHKE	City of Toronto Water Department
O, Overlook Hills Subdivision	City of Toronto Water Department
J, Sunshine Park, Jefferson Heights Area	***City of Steubenville and Village of Mingo Junction Water Departments***
A, New Alexandria, CR 19, SR 151 Piney Fork, State Route 152, Smithfield	Brilliant Water and Sewer District
G1 & G2, Rayland Area, SR 150	Village of Tiltonsville Water and Sewer Department

This PWS used water from both Steubenville and Mingo Junction in 2017.

The **City of Steubenville's** public water system uses surface water drawn from the Ohio River. The raw water pumping station and intakes are located at mile marker 65.3 of the Ohio River. This is in the northern part of the City near Alikanna.

Surface waters are by their nature susceptible to contamination and numerous contaminant sources along their banks make them more so. The protection areas around the Ohio River include numerous potential contaminant sources including municipal and industrial wate discharges, combined sewer overflows, runoff from urban, residential, mining and agricultural areas, transportation spills related to rail and highway crossings, commercial shipping and recreational boating. As a result, the drinking water supplied to the **City of Steubenville's public water supply system is considered to have a high susceptibility to contamination**.

Historically, the Steubenville public water system has effectively treated this water source to meet drinking water quality standards. The potential for adverse water quality impacts can be further decreased by implementing measures to protect the Ohio River. More detailed information is provide in the City of Steubenville Drinking Water Source Assessment Report, which can be obtained by calling the Steubenville Water Department at (740) 283-6041.

The Ohio EPA has conducted a source water assessment for this source. For information on how to obtain a copy of this report, please visit Ohio EPA's Source Water Assessment and Protection Program Web page at http://www.epa.state.oh.us/ddagw/pdu/swap.html or contact the Jefferson County Water and Sewer District.

The **Village of Mingo Junction** receives its drinking water from wells which are drilled to a depth of seventy feet. The North Well is located inside the Acero Junction steel mill complex and the South well is located just west of the Marina .The EPA had classified the water plant as a surface plant because of the close proximity to the Ohio River, but in 2004, we were re-classified as a groundwater facility. There's now a permanent connection (on Wilson Avenue near the village corporation limits) to the Jefferson County water system, through which we supply water to them. Flow from the county to Mingo did not occur in 2017.

High Susceptibility PWS Based on High Sensitivity: Ohio EPA had previously completed a study of Mingo Junction's source of drinking water to identify potential contaminant sources and provide guidance on protecting the drinking water source. According to this study, **the aquifer (water-rich zone) which supplies water to the Village of Mingo Junction has a high susceptibility to contamination.** This determination is based on the following:

- Lack of a protective layer of clay/shale/other overlaying the aquifer
- Presence of significant potential contaminants in the protection area.

This susceptibility means that under currently existing conditions, the likelihood of the aquifer becoming contaminated is relatively high. This likelihood can be minimized by implementing appropriate protective measures. In order to prevent contamination the Village of Mingo Junction has joined the Southern Jefferson County Source water protection team in a joint effort with the surrounding communities to protect water supplies and be able to react to any contamination. More information about the source water assessment or what consumers can do to help protect the aquifer is available by calling the water plant at 740-535-9162.

What are the sources of contamination to drinking water

The sources of 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 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.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 the 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 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 for 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. The JCWSD, Mingo Junction and the City of Steubenville conducted sampling for; bacteria; inorganic; volatile organic contaminants during 2017. Samples were collected for more than 50 different contaminants most of which were not detected in the 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, is more than one year old.

Listed below is information on those contaminants that were found in the JCWSD Water System as the result of monitoring by the City of Steubenville Water Department and the JCWSD. (Contaminants sampled by the JCWSD are marked with an *.)

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detection's	Violation	Sample Year	Typical Source of Contaminants
Residual Disinfectant							
Chlorine (ppm)*	MRDLG =4	MRDL =4	1.33	0.47 – 2.0	No	2017	Water additive used to control microbes
Volatile Organic							
Total Trihalomethanes (ppb)*	NA	80	81	28.9 – 63.3	Yes	2017	By-Product of drinking water chlorination.
Five Haloacetic Acids (ppb)*	NA	60	33.4	8.1 – 29.1	No	2017	By-Product of drinking water chlorination
Inorganic							
Contaminants (Units)	**MCLG**	**MCL**	**Level Found**	**Range of Detection's**	**Violation**	**Sample Year**	**Typical Source of Contaminants**
Lead (ppb)*	0	Action level =15	0	NA	No	2017	Corrosion of household plumbing systems; erosion of natural deposits.
Zero (0) out of twenty samples were found to have lead levels in excess of the Action Level of 15 ppb							
Copper (ppb)*	1,300	Action level =1,300	0	NA	No	2017	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Zero (0) out of twenty samples were found to have copper levels in excess of the Action Level of 1.3 ppm							
Fluoride (ppm)	4	4	1.03	0.85 -1.17	No	2016	Erosion of natural deposits; water additive that promotes strong teeth
Nitrate (ppm)	10	10	1.11	0.57 - 1.11	No	2017	Runoff from fertilizer use; erosion of natural deposits
Barium (ppm)	2	2	.0315	NA	No	2017	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Treatment Technique							
Turbidity (NTU)	N/A	TT	1.05	0.027-1.05	No	2017	Soil runoff
Turbidity (% of samples meeting standards)	N/A	TT	99.8%	99.8 – 100%	No	2017	Soil runoff
Total Organic Carbon	N/A	TT	1.38	0.98 – 1.61	No	2017	Naturally present in the environment

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Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Disinfectants							
Chlorine (ppm)*	MRDLG =4.0	MRDL =4.0	1.33	0.47 – 2.0	No	2017	Water additive used to control microbes
Radioactive Contaminants							
Alpha (pCi/L)	0/0	15	1.55 pCi/L	NA	NO	2015	Decay of natural and man-made deposits
Radium 228 (pCi/L)	0	5	0.78 pCi/L	NA	NO	2015	Decay of natural and man-made deposits
Inorganic Contaminants							
Copper (ppb) [Mingo's results]	1300 ug/l	AL = 1300 ug/l	<50 ug/l	<50ug/l - 284 ug/l	NO	2017	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead (ppb) [Mingo's results]	0	AL = 15 ug/l	<5.0 ug/l	NA	NO	2017	Corrosion of household plumbing systems; erosion of natural deposits.
Nitrates (ppm)	10.00	10.00	0.22	NA	NO	2017	Runoff from fertilizers use; erosion of natural deposits
Fluoride (ppm)	4.00	4.00	0.96	0.78-1.25	NO	2017	Erosion of natural deposits; Water additive which promotes strong teeth.
Barium (ppm)	2	2	<0.25	NA	NO	2015	Discharge of drilling waste; Discharge from metal refiners; Erosion of natural deposits.
Volatile Organic Contaminants							
Total trihalomethanes (ppb)*	80	80	81	28.9 – 63.3	Yes	2017	By-products of drinking water chlorination
Five Halo acetic Acids (ppb)*	60	60	33.4	8.1 – 29.1	No	2017	By-products of drinking water chlorination
Volatile Organic Contaminants							

Bromo-dichloromethane (ppb)	NA	NA	4.68 ug/l	3.60 - 5.7	NO	2017	By-products of drinking water chlorination

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detection's	Violation	Sample Year	Typical Source of Contaminants
Lead (ppb)*	0	Action level =15	0	NA	No	2017	Corrosion of household plumbing systems; erosion of natural deposits.
Zero (0) out of twenty samples were found to have lead levels in excess of the Action Level of 15 ppb							
Copper (ppb)*	1,300	Action level =1,300	0	NA	No	2017	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Zero (0) out of twenty samples were found to have copper levels in excess of the Action Level of 1.3 ppm							

Violations

Steubenville: From January 12 to March 2, 2018, the City of Steubenville PWS *did not adequately monitor for parameters necessary to determine contact time or CT values. CT testing is necessary to ensure the inactivation of microorganisms. Therefore we were not sure about the quality of our drinking water at that time.*
Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Mingo Junction: The Village of Mingo Junction had an MCL violation for TTHMs during the months of January, February, March, April, May and June of 2017. The public doesn't need to use an alternative (e.g. bottled) water supply. However, if you have specific health concerns, consult your doctor. What this means is that 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 Village of Mingo Junction PWS** took/is taking the following steps to correct this violation and prevent future violations from occurring:

> The levels of residual chlorine have been decreased; the aeration tank at the water plant has been reactivated.

Jefferson County: The Jefferson County Water District -J PWS had an MCL violation for TTHMs during the months of April, May and June of 2017. The public doesn't need to use an alternative (e.g. bottled) water supply. However, if you have specific health concerns, consult your doctor. What this means is that 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 Jefferson County Water District -J PWS** took/is taking the following steps to correct this violation and prevent future violations from occurring:

> Earlier this year Jefferson Co W&S District J switched to a new supplier. The former supplier was a surface water source that had issues providing optimal chlorine residuals. Surface water sources are known to have higher organic matter than ground water sources. The source water combined with the inconsistent chlorine levels may have attributed to increased TTHM levels. The new supplier, Mingo Junction, is a ground water source that is providing

water with lower and more consistent chlorine levels. Mingo Junction's recent TTHM violation was due to an elevated TTHM concentration in a sample taken in 2016. As mentioned above, they have taken steps to prevent any future issues. Furthermore, their most recent TTHM analysis near our connection with them is approximately half of the MCL value. With these changes and continued monitoring, the Jefferson Co W&S is confident this will reduce our TTHM levels.

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 City of Steubenville's highest recorded turbidity result for *2017* was *1.05* NTU and lowest monthly percentage of samples meeting the turbidity limits was *99.9%*.

Additional Information for 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. JCWSD 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.

How do I participate in decisions concerning my drinking water?

Public participation and comment are encouraged at regular meetings of the Jefferson County Board of Commissioners which meets every Thursday morning at 9:00 A.M. at 301 Market Street, Steubenville, Ohio 43952.

For help obtaining more information on your drinking water contact Wayne R. Ruckman of the JCWSD at (740)283-8577 or via email at wruckman@jcwatersewer.com.

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 levels (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 (ppms) 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 (ppbs) 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.

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.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of drinking water disinfectant below which there is no know 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.

Nephelometric Turbidity Unit (NTU): nephelometric turbidity unit is a measure of the clarity of the water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Non-Detects (ND): Laboratory analysis indicated that the contaminant is not present.

Picocuries per liter (pCi/L): A common measure of radioactivity.

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.

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