

Marion Township Water System

Annual Drinking Water Quality Report

We're pleased to present to you this Annual Drinking Water Quality Report for the period of January 1st to December 31st 2022. This report is designed to inform you about the quality of the water we deliver to you every day. Our goal is to provide you with a dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. We purchased all of our water in 2022 from North Sewickley Municipal Authority. North Sewickley Municipal Authority in turn purchases their water from Beaver Falls Municipal Authority.

The water source for the Beaver Falls Municipal Water Authority is the Beaver River, which is formed by the confluence of the Mahoning and Shenango Rivers near New Castle. There are also several smaller tributaries that feed into the watershed that supply their water treatment plant. Among these are the Connoquenessing, Pymatuning, and Brush Creeks. The Beaver River provides surface water to the Eastvale water treatment plant.

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).

In order to ensure that tap water is drinkable, the EPA has set limits through regulations for certain contaminants in drinking water provided by public water systems. These MCL's (maximum contaminant levels) are set at very low levels because of potential adverse health effects to the general public. The Beaver Falls Water Municipal Authority and Marion Township routinely monitor for contaminants in your drinking water according to Federal and State laws. The following tables show the results of our monitoring for the period of January 1 to December 31, 2022. The State also allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data is from prior years in accordance with the Safe Drinking Water Act.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years, or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (µg/l) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (ng/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Running Annual Average (RAA) - mathematical average of analytical data in which four quarterly or twelve-monthly results are continuously averaged.

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

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 Contaminant Level (MCL) - 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.

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 Residual Disinfectant Level (MRDL) - the highest level of a disinfectant that is 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 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.

Minimum Residual Disinfectant Level (MinRDL) - The minimum level of residual disinfectant required at the treatment plant entry point and in the distribution system.

Disinfectant - the chemical additive or process that is used to kill or inactivate pathogens that may be present in the water.

TABLES

Turbidity Data

<i>Contaminant (Units)</i>	<i>Sample Date</i>	<i>Violation (Y/N)</i>	<i>Level Detected</i>	<i>MCLG</i>	<i>MCL</i>	<i>Likely Source of Contamination</i>
Turbidity (NTU)	Continuous Monitoring	N	100% (a)	0	TT = At least 95% of samples below 0.3	Soil Runoff
		Highest single measurement and date	0.184 (1/29/22)	N/A	TT = 1 NTU for a single measurement	

(a) *The lowest monthly percentage of samples meeting the turbidity limits specified by DEP regulations*

<i>Inorganic, Synthetic, and Volatile Organic Contaminants</i>							
<i>Contaminant (Units)</i>	<i>Sample Date</i>	<i>Violation (Y/N)</i>	<i>Level Detected</i>	<i>Range</i>	<i>MCLG</i>	<i>MCL</i>	<i>Likely Source of Contamination</i>
Copper (ppm)	June 2022	N	0.297 (b)	0.0105 – 1.3	1.3	AL = 1.3	Corrosion of household plumbing, erosion of natural deposits
Lead (ppb)	June 2022	N	2.36 (b)	0.00-9.8	0.0	AL = 15.0	Corrosion of household plumbing, erosion of natural deposits
Nickel (ppm)	Aug 2022	N	0.00251	0.00251	0.1	0.1	Leaching from metals in contact with drinking water pipe such as pipes and fittings, erosion of natural deposits
Fluoride (ppm)	Aug 2022	N	0.58	0.58	2.0	2.0	Erosion of natural deposits; water additive, discharge from fertilizer/aluminum factories
Nitrate (ppm)	Aug 2022	N	1.25	1.25	10.0	10.0	Runoff from fertilizer use, Leaching from septic tanks and sewage, erosion of natural deposits
Barium (ppm)	Aug 2022	N	.0337	.0337	2.0	2.0	Discharge of drilling wastes; metal refineries; erosion of natural deposits
<i>Distribution Disinfectant & Disinfection By-Products</i>							
<i>Contaminant (Units)</i>	<i>Sample Date</i>	<i>Violation (Y/N)</i>	<i>Level Detected</i>	<i>Range</i>	<i>MCLG</i>	<i>MCL</i>	<i>Likely Source of Contamination</i>
Chlorine (ppm)	Sampled Monthly	N	3.97 (c)	0.34-3.97	4.0 = MRDLG	4.0 = MRDL	Water additive to control microbes
Chloramines (ppm)	Sampled Monthly	N	3.07 (c)	0.58-3.07	4.0 = MRDLG	4.0 = MRDL	Water additive to control microbes
Haloacetic Acids (ppb)	Sampled Quarterly	N	27.8 (d)	14.4 -35.7	N/A	60	By-product of disinfection
Total Trihalomethanes (ppb)	Sampled Quarterly	N	58.15 (d)	14.4 -94.0	N/A	80	By-product of disinfection

- (b) These are 90th percentile results. None of the thirty-four samples for lead or copper exceeded the action level
- (c) As of April 29, 2019 DEP regulations require a minimum disinfectant level of 0.2 mg/L be maintained in the distribution system at all times.
- (d) Highest calculated locational RAA.

<i>Entry Point Disinfection Residual</i>						
<i>Contaminant (Units)</i>	<i>Sample Date</i>	<i>Violation (Y/N)</i>	<i>Lowest Level Detected</i>	<i>Range of Detections</i>	<i>MinRDL</i>	<i>Likely Source of Contamination</i>
Chlorine (ppm)	Continuous Monitoring	N	2.08 (on 11/24/22)	2.08-3.00	0.2	Water additive to control microbes
<i>Total Organic Carbon</i>						
<i>Contaminant</i>	<i>Sample Date</i>	<i>Violation (Y/N)</i>	<i>Range of % Removal Required</i>	<i>Range of % Removal Achieved</i>	<i>No. of Quarters out of Compliance</i>	<i>Likely Source of Contamination</i>
Total Organic Carbon	Sampled Monthly	N	25-45	33.3 - 49.3	0	Naturally decaying organic matter

UNREGULATED CONTAMINANT MONITORING

Availability of Monitoring Data for Unregulated Contaminants for the Beaver Falls Municipal Authority. Our water system has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. As our customers, you have a right to know that this data is available. If you any further questions, please contact us at the phone number listed at the bottom of the last page.

UNREGULATED CONTAMINANT MONITORING				
<i>Finished water (sampled in March, June, September, December 2018)</i>				
<i>Contaminant</i>	<i>Reporting Limit (ug/L)</i>	<i>Range Detected (ug/L)</i>	<i>Health Advisory Level (ug/L)</i>	<i>Likely Source of Contamination</i>
Germanium	0.300	<0.300	N/A	
Alpha – hexachlorocyclohexane	0.010	<0.010	N/A	Pesticide
Chlorpyrifos	0.029	<0.029	N/A	Organophosphate insecticide
Dimethipin	0.192	<0.192	7.3	Runoff from herbicide use
Ethoprop	0.029	<0.029	N/A	Pesticide
Oxyfluorfen	0.048	<0.048	N/A	Runoff from herbicide use
Profenofos	0.288	<0.288	N/A	Pesticide for cotton crops
Tebuconazole	0.192	<0.192	N/A	Agricultural Fungicide
Permethrin	0.038	<0.038	N/A	Residential/Industrial pesticide
Tribufos	0.067	<0.067	N/A	Pesticide for cotton crops
1-Butanol	2.00	<2.00	N/A	Solvent, fuel additive, plasticizer
2 - Methoxyethanol	0.400	<0.400	N/A	Jet fuel anti-icing additive; solvent for resins, coatings, dyes
2-Propen-1-ol	0.500	<0.500	N/A	Herbicide
BHA	0.0297	<0.0297	N/A	Antioxidant and preservative in food, animal feed, cosmetics, rubber, petroleum products; also used in medicines
o-Toluidine	0.00693	<0.00693	N/A	Manufacture of dyes
Quinoline	0.0198	<0.0198	N/A	Discharges from petroleum, coal

Finished water (sampled in November 2022)				
Contaminant	Reporting Limit (ng/L)	Range Detected (ng/L)	Health Advisory Level (ng/L)	Likely Source of Contamination
PFBS (perfluorobutane sulfonic acid)	3.7	4.0	N/A	Leachate from landfills, waste streams from a number of industrial processes, runoff from areas using certain firefighting foams. They have been used to make cookware, carpets, clothing, fabrics for furniture, paper packaging for food, and other materials that are resistant to water, grease, or stains. They are also used in firefighting foams and in a number of industrial processes.
PFHxA (perfluorohexanoic acid)	3.7	2.8	N/A	
PFOS (perfluorooctane sulfonic acid)	3.7	2.1	* HA is for combined PFOS & PFOA	
PFOA (perfluorooctanoic acid)	2.0	2.2	* HA is for combined PFOA & PFOS	
Total Combined PFOA & PFOS	N/A	* 4.3	70	
Untreated water (sampled in March, June, September, December 2018)				
Contaminant	Reporting Limit	Range Detected (ug/L)	Health Advisory Level	Likely Source of Contamination
Bromide	20.0 (ug/L)	<20.0 - 265	N/A	Naturally occurring
Total Organic Carbon	0.500 (mg/L)	4.12 – 6.38	N/A	Naturally decaying organic matter
Untreated water (sampled bi-weekly, June thru Sept 2018)				
Contaminant	Reporting Limit (ug/L)	Range Detected (ug/L)	Health Advisory Level (10-day)(ug/L)	Likely Source of Contamination
Total Microcystin	0.300	<0.300	0.3 children, 1.6 adults	Produced by certain species cyanobacteria
Anatoxin-a	0.0300	<0.0300	N/A	Produced by certain species cyanobacteria
Cylindrosperopsin	0.0900	<0.0900	0.7 children, 3 adults	Produced by certain species cyanobacteria
Distribution System (sampled in March, June, September, December 2018)				
Contaminant	Reporting Limit (ug/L)	Range Detected (ug/L)	MCL (ug/L)	Likely Source of Contamination
Bromochloroacetic Acid	0.300	1.94 – 4.95	N/A	By-product of disinfection
Bromodichloroacetic Acid	0.500	2.53 – 7.41	N/A	By-product of disinfection
Chlorodibromoacetic Acid	0.300	<0.300 – 2.35	N/A	By-product of disinfection
Tribromoacetic Acid	2.00	<2.00	N/A	By-product of disinfection

LT2 – LONG TERM ENHANCED SURFACE WATER TREATMENT RULE

In 2019, the Beaver Falls Municipal Authority completed the raw water monthly monitoring of our source water (Beaver River) for Cryptosporidium. Twenty-four (24) monthly samples were taken and there were six detections with a 12-arithmetic mean of 0.074 Oocysts per liter which complies with a Bin 1 Classification.

Cryptosporidium is a microbial pathogen found in surface waters throughout the U.S. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. This monitoring will indicate the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of the infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immune-compromised people are at a greater risk of developing life-threatening illness. We encourage immune-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

First Quarter 2022, the Beaver Falls Municipal Authority experienced a source water contamination event. Orsanco (Ohio River Valley Water Sanitation Commission) reported detections of Benzene and Toluene on the Ohio River. At that same time, CWM lab contacted BFMA to report a detection on a set of in-house samples. The appropriate authorities were immediately notified of the detections. Orsanco graciously started sampling upstream of our intake eventually pinpointing the origin of the contamination to be on the Mahoning River across the state line in Ohio. During that event and continuing through the weekly monitoring our treatment process has been able to remove these contaminants to a level below the regulated MCL.

HEALTH INFORMATION:

All drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the 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). These contaminants can be microbes, organic or inorganic chemicals, or radioactive materials. Examples of these contaminants are viruses and bacteria from sewage or septic systems and salts and metals from industrial or domestic wastewater discharges. Pesticides and herbicides from agricultural and urban runoff can also be detected periodically in trace amounts. In addition to these, organic chemical contaminants that can come from gas station run-off or from industrial processes such as petroleum production may also be found at times in trace amounts.

INFORMATION ABOUT 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. The BFMA 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 or at www.epa.gov/safewater/lead.

**The following results are detects which
Marion Township monitors in our system**

Volatile Organic Contaminants						
Contaminant(Unit of Measurement)	Violation Y/N	Level Detected	Range	MCLG	MCL	Likely source of contamination
TTHM(ppb) Sampled quarterly	N	47.475	44.125- 47.475	80	80	By product of drinking water chlorination
HAA5(ppb) Sampled quarterly	N	23.3	20.425- 23.3	60	60	By product of drinking water chlorination

Disinfection by-products							
Contaminant(Unit of Measurement)	Violation	Level Detected	Range	MCLG	MCL	# of sites above AL	Likely source of contamination
Lead (test 2022)	N	6.57	0.400- 52.5	0.0	15.0	1	Corrosion of household plumbing
Copper (test 2022)	N	0.6	.0384- 1.03	1.3	1.3	0	Corrosion of household plumbing

DISINFECTION DATA						
TYPE OF DISINFECTANT	Violation Y/N	Highest RAA	Marion Range	MCLG	MRDL	
Chlorine Sampled weekly	N	1.2	.5 - 2.2(e)	4.0=MRDL	4.0=MRDL	Water additive to control microbes

VIOLATIONS

Contaminant	Contaminant ID	Violation type	Violation ID	PeriodBegin Date	Fiscal year
CHLORINE	0999	DRR Fail Dist Weekly ORVL-R3	25114	05/01/2022	2022
CHLORINE	0999	M/R Fail to Monitor or Plan -27	25112	05/01/2022	2022
CHLORINE	0999	SWTR PLR M/R- Filtered -P-3	25113	05/01/2022	2022

Violations: Marion Township had a violation for CCR Report for May/22 which did not require public notification. A monitoring violation for chlorine which was an omission of paperwork.

If you have any questions about this report or concerning you water utility, please contact the Township secretary at 724-452-1986. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the second Monday of each month at the Marion Township Municipal Building, at 4:00 p.m. We ask that all our customers help us protect our water resources and conserve water during drought conditions.

A paper copy of this report may be pick up at the Marion Township Municipal building, or call the office at 724-452-1986 to have one mailed to you.