

2021 WATER QUALITY REPORT

BEAVER FALLS MUNICIPAL AUTHORITY

PWSID NO. 5040012

Este informe contiene informacion muy importante sobre su agua beber. Traduzcalo o hable con alguien que lo entienda bien.

The Beaver Falls Municipal Authority (BFMA) is pleased to present to you the WATER QUALITY REPORT for 2021. This report is designed to inform you about the quality water and services we deliver to you every day.

All our water comes from the Beaver River, which is formed by the confluence of the Mahoning and Shenango Rivers near New Castle. There are also several smaller tributaries, including the Connoquenessing Creek, Pymatuning Creek, and Brush Creek, that feed into the watershed that supplies our water treatment plant.

A 'Source Water Assessment' of our source water was completed in May 2002. The assessment has found that the Beaver River is potentially susceptible to accidental spills along roads and railways that border the river for almost its entire length. Overall, our source water has a high risk of significant contamination. Summary reports of the assessment can be viewed over the internet by going to this address: <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-59389/RS5040012001%20Beaver%20Falls.pdf> or by contacting the Beaver Falls Municipal Authority. Copies of the complete report are available for review at the PA DEP Pittsburgh Regional Office, Records Management Unit which can be contacted at 412-442-4000.

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 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 microbial contaminants are available from the Safe Drinking Water Hotline (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 Municipal Authority routinely monitors 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, 2021. 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 our data is from prior years in accordance with the *Safe Drinking Water Act*. The date has been noted on the sampling results table. In the following tables, you will find many terms and abbreviations you may not be familiar with. To help you better understand these terms we have 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

Contaminant (Units)	Sample Date	Violation (Y/N)	Level Detected	MCLG	MCL	Likely Source of Contamination
Turbidity (NTU)	Continuous Monitoring	N	100% (a)	0	TT = At least 95% of samples below 0.3	Soil Runoff
		Highest single measurement and date	0.099 (11/2/21)	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)	August 2019	N	0.296 (b)	0.0174 – 0.938	1.3	AL = 1.3	Corrosion of household plumbing, erosion of natural deposits
Lead (ppb)	August 2019	N	0.0031 (b)	0.00-0.0054	0.0	AL = 15.0	Corrosion of household plumbing, erosion of natural deposits
Nitrate (ppm)	Aug 2021	N	0.70	0.70	10.0	10.0	Runoff from fertilizer use, Leaching from septic tanks and sewage, erosion of natural deposits
Barium (ppm)	Aug 2021	N	.0196	.0196	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	2.56 (c)	0.16- 2.56	4.0 = MRDLG	4.0 = MRDL	Water additive to control microbes
Haloacetic Acids (ppb)	Sampled Quarterly	N	32.0 (d)	13.5 -43.1	N/A	60	By-product of disinfection
Total Trihalomethanes (ppb)	Sampled Quarterly	N	59.0 (d)	13.7-93.4	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	1.13 (on 7/21/21)	1.13-2.97	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	36.9—52.0	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>				
Contaminant	Reporting Limit (ug/L)	Range Detected (ug/L)	Health Advisory Level (ug/L)	Likely Source of Contamination
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 February 2021)				
Contaminant	Reporting Limit (ng/L)	Range Detected (ng/L)	Health Advisory Level (ng/L)	Likely Source of Contamination
PFBS (perfluorobutane sulfonic acid)	3.7	19	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	2.1-2.2	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)				
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.

EXPLANATION OF VIOLATIONS:

Beaver Falls Municipal Authority had one reporting violation due to a data entry error, which did not require public notification. Our contracted lab incorrectly entered a monitoring sampling date in Sept 2021, this date was corrected in Nov 2021.

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.

BOARD MEETINGS:

We at the Beaver Falls Municipal Authority work around the clock to provide top quality water to every tap. In addition to the contaminants listed in this report, many others were tested for and not detected. If you would like further information about the testing or sampling of our tap water, please contact our Production Manager at 724-847-7387 during regular business hours: Monday through Friday, 8:00 A.M. to 4:00 P.M. If you want to learn more about the Authority, please attend any of our regularly scheduled meetings. They are held on the fourth Thursday of each month at 5:30 P.M. unless otherwise advertised in the Beaver County Times. You can also visit us online at www.bfwater.net.