ANNUAL

WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2015

Presented By
Ambridge Water Authority

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Meeting the Challenge

Once again we are proud to present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to your homes and businesses. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

Please remember that we are always available to assist you, should you ever have any questions or concerns about your water.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet the third Tuesday of each month beginning at 6 p.m. in Council Chambers, 600 11th Street, Ambridge, PA.

Important 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.
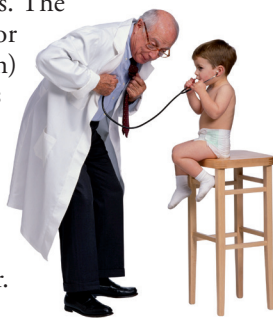
Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Lead in Home Plumbing

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. We are 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/lead.

Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from Service Creek Reservoir, pretreated with a disinfectant, and sent to the water purification plant. The water goes into a mixing tank where a coagulant is added, which causes small particles in the water to adhere to one another (called floc), making them heavy enough to settle to the bottom of sedimentation basins for removal. Caustic soda is added to adjust pH, and chlorine is added for disinfection. The water is filtered through layers of fine coal and filter-grade sand. As this process is completed, turbidity is reduced and clear water emerges. A corrosion inhibitor (used to protect distribution system pipes) is added. Finally, chlorine is added again as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, using the smallest amount necessary to protect the safety of your water without compromising taste.) The water is then pumped to sanitized underground reservoirs, water towers, and into your home or business.

Where Does My Water Come From?

Ambridge Water Authority (AWA) customers are fortunate because they enjoy an abundant water supply from an outstanding source. The water treatment plant draws water from Service Creek Reservoir, a spring-fed, surface water-influenced, upland reservoir containing 3.5 billion gallons of water, which may well be the highest quality source water in western Pennsylvania. This lake was created by AWA and built in the early 1950s, and it is dedicated exclusively to providing water for the residents within our service area and our other customers. The water is piped more than seven miles to the treatment plant. Here, the water propels a turbine that produces about 25 percent of the electricity needed to operate the plant in an efficient manner. During 2015, our treatment facility provided an average of 4.5 million gallons per day of clean drinking water. Water is pumped to service Ambridge, Harmony Township, Economy, Bell Acres, Baden, and parts of New Sewickley Township as well as to Edgeworth Municipal Authority (which also serves Leet Township and Leetsdale), with our service population being almost 30,000 individuals. Interconnects with West View Water Authority and Conway Borough provide a backup supply of water for emergencies. To learn more about our watershed on the Internet, go to the U.S. EPA Surf Your Watershed at www.epa.gov/surf.

Failure in Flint

The national news coverage of water conditions in Flint, Michigan, has created a great deal of confusion and consternation over the past year. The water there has been described as being corrosive; images of corroded batteries and warning labels on bottles of acids come to mind. But is corrosive water bad?

Corrosive water can be defined as a condition of water quality that will dissolve metals (iron, lead, copper, etc.) from metallic plumbing at an excessive rate. There are a few contributing factors but, generally speaking, corrosive water has a pH of less than 7; the lower the pH, the more acidic, or corrosive, the water becomes. (By this definition, many natural waterways throughout the country can be described as corrosive.) While all plumbing will be somewhat affected over time by the water it carries, corrosive water will damage plumbing much more rapidly than water with low corrosivity.

By itself, corrosive water is not a health concern; your morning glass of orange juice is considerably more corrosive than the typical lake or river. What is of concern is that exposure in drinking water to elevated levels of the dissolved metals increases adverse health risks. And there lies the problem.

Public water systems are required to maintain their water at optimal conditions to prevent it from reaching corrosive levels. Rest assured that we routinely monitor our water to make sure that what happened in Flint never happens here. For more information on how corrosivity impacts water quality, download this informative pamphlet: http://goo.gl/KpTmXv.
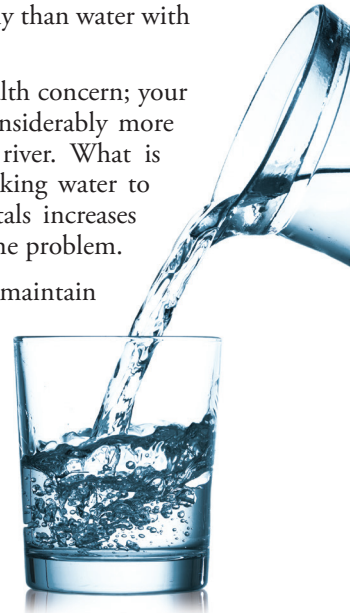
QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Mary Hrotic, General Manager, at (724) 266-4847.

Source Water Assessment

Spotts, Stevens and McCoy, Inc., an environmental company under contract with the Pennsylvania Department of Environmental Protection (PA DEP), performed a source water assessment in accordance with the Source Water Assessment Plan in 2002. This was done in accordance with requirements under the Safe Drinking Water Act. Land use is an important consideration in identifying potential point and nonpoint sources of contamination. Point sources are those that emanate from known discharge locations such as an industrial outfall. Nonpoint sources are the runoff that occurs naturally through rainfall and snowmelt, picking up potential contaminants such as herbicides or farming by-products, such as manure. In addition to point and nonpoint sources, accidental spills and known or unknown sources of contamination may occur, such as a spill during delivery of home heating oil or leaking from pipelines or gas/oil wells. These contamination sources are unlikely to occur because of the relatively undeveloped nature of the watershed. Watershed criteria that result in a high risk of contamination are transportation corridors, residential development, agriculture, and pipelines. For more information, access the PA DEP Web site at www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/SrceProt/SourceAssessment/default.htm for a summary of this report or for information regarding the Source Water Protection Program. You may also contact the DEP regional office at (412) 442-4000.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen, disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use and avoid using hot water, to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

Field Order Issued

On June 17, 2015, PA DEP issued a field order for failure to respond to potential contamination of the potable water and failure to notify the Department when finished water in tank #3 was found unprotected from contamination because of a missing roof hatch. The roof hatch had been stolen by trespassers. AWA had a replacement roof hatch fabricated and installed.

What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems) or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand) causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

For more information on backflow prevention, call the Safe Drinking Water Hotline at (800) 426-4791.

Sampling Results

During the past year, we have taken hundreds of water samples to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Any UCMR3 detections are shown in the data tables in this report. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2015	2	2	0.029	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine [Distribution]	2015	[4]	[4]	0.68	0.47–0.68	No	Water additive used to control microbes
Chlorine [Entry Point][1]	2015	MinRDL = 0.2	NA	0.7	0.7–1.9	No	Water additive used to control microbes
Haloacetic Acids [HAA] (ppb)	2015	60	NA	54.9	27.6–84	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]	2015	80	NA	49	34.8–66.5	No	By-product of drinking water disinfection
Total Coliform Bacteria (# positive samples)	2015	More than 1 positive monthly sample	0	0	NA	No	Naturally presentin the environment
Total Organic Carbon (% removal)	2015	TT	35-45%	NA	50–60	No	Naturally present in the environment
Turbidity[2] (NTU)	2015	TT	NA	0.26	0.03–0.26	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2015	TT = 95% of samples < 0.3 NTU	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2013	1.3	1.3	0.234	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2013	15	0	9	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED CONTAMINANT MONITORING RULE PART 3 (UCMR3)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Chlorate [Distribution]	2013	14.93	ND–31
Chlorate [Entry Point]	2013	16.25	ND–22.5
Chromium, Total [Distribution]	2013	0.12	ND–0.24
Chromium, Total [Entry Point]	2013	0.05	ND–0.2
Hexavalent Chromium [Distribution]	2013	0.05	ND–0.09
Hexavalent Chromium [Entry Point]	2013	0.04	ND–0.07
Strontium [Distribution]	2013	84.63	83.3–86.3
Strontium [Entry Point]	2013	84.25	80.9–90.8

OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
DOC[3] (ppm)	2015	NA	1.4–3.68
SUVA[4] (ppm)	2015	NA	0.926–2.24
UV254[5] (ppm)	2015	NA	2.02–8.26

[1] The amount-detected value for chlorine [entry point] represents the lowest level that was detected.

[2] Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

[3] Dissolved organic carbon (DOC) is the accumulation of broken-down organic matter. We test this for the purpose of using it in the SUVA calculation.

[4] Specific Ultra-Violet Absorbance at 254 nm wavelengths (DOC/UV254 x 100 = ppm). This parameter is an alternate method for determining total organic carbon (TOC).

[5] Ultra-Violet Absorbance at 254 nm wavelengths. We test this for the purpose of using it in the SUVA calculation.

Definitions

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

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.

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.

MinRDL (Minimum Residual Disinfectant Level): The minimum level of residual disinfectant required at the entry point to the distribution system.

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.

MRDLG (Maximum Residual Disinfectant 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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.