# *Annual* WATER QUALITY REPORT

*Reporting Year 2013*

***Presented By***
**Ambridge Water Authority**

**PWS ID#: 5040008**

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

## There When You Need Us

We are once again proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2013. 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 you. 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 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 pm in Council Chambers, 600 11th Street, Ambridge.

## 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/safewater/lead.

## Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. Also, the Pennsylvania DEP has a Web site (www.portal.state.pa.us/portal/server.pt/community/drinking_water_management/10543) that provides complete and current information on water issues in Pennsylvania, including valuable information about our watershed.

## Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, is unquestionably the most important step in drinking water treatment. By far, the most common method of disinfection in North America is chlorination.

Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination. In fact, the filtration of drinking water plus the use of chlorine is probably the most significant public health advancement in human history.

How chlorination works:

**Potent Germicide Reduction** in the level of many disease-causing microorganisms in drinking water to almost immeasurable levels.

**Taste and Odor Reduction** of many disagreeable tastes and odors like foul-smelling algae secretions, sulfides, and odors from decaying vegetation.

**Biological Growth Elimination** of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.

**Chemical Removal** of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.

## 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 2013, our treatment facility provided an average of 4.6 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.

## 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.

## How Long Can I Store Drinking Water?

The disinfectant in drinking water will eventually dissipate even in a closed container. If that container housed bacteria prior to filling up with the tap water the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

## What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of freshwater that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses over 180 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet; twice the global per capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish.

To check out your own water footprint, go to www.h2oconserve.org or visit www.waterfootprint.org to see how the water footprints of other nations compare.

## Additional Monitoring

In 2013 AWA sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by the EPA. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard. As our customers, you have the right to know these data are available. If you are interested in examining the results, please contact Mary Hrotic at the AWA Business Office at (724) 266-4847.

## 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.

## Sampling Results

During the past year we have taken hundreds of water samples in order 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.

### REGULATED SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | MCL [MRDL] | MCLG [MRDLG] | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE |
|---|---|---|---|---|---|---|---|
| **Barium** (ppm) | 2013 | 2 | 2 | 0.03 | NA | No | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| **Chlorine [Distribution]** (ppm) | 2013 | [4] | [4] | 0.64 | 0.44–0.79 | No | Water additive used to control microbes |
| **Chlorine [Entry Point]**[1] (ppm) | 2013 | MinRDL=0.2 | NA | 0.8 | 0.8–1.3 | No | Water additive used to control microbes |
| **Fluoride** (ppm) | 2013 | 2 | 2 | 0.11 | 0.11–0.11 | No | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| **Haloacetic Acids [HAA]–Stage 1** (ppb) | 2013 | 60 | NA | 29.7 | 23.1–41.8 | No | By-product of drinking water disinfection |
| **TTHMs [Total Trihalomethanes]–Stage 1** (ppb) | 2013 | 80 | NA | 37.5 | 21.7–62.0 | No | By-product of drinking water disinfection |
| **Total Coliform Bacteria** (# positive samples) | 2013 | More than 1 positive monthly sample | 0 | 0 | NA | No | Naturally present in the environment |
| **Total Organic Carbon** (ppm) | 2013 | TT | NA | 2.8 | 2.1–4.8 | No | Naturally present in the environment |
| **Turbidity**[2] (NTU) | 2013 | TT | NA | 0.17 | 0.04–0.17 | No | Soil runoff |
| **Turbidity** (Lowest monthly percent of samples meeting limit) | 2013 | 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 SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AMOUNT DETECTED | RANGE LOW-HIGH | TYPICAL SOURCE |
|---|---|---|---|---|
| **Bromodichloromethane** (ppm) | 2013 | 0.0071 | 0.00423–0.00987 | By-product of drinking water disinfection |
| **Chloroform** (ppm) | 2013 | 0.047 | 0.0173–0.0757 | By-product of drinking water disinfection |

### OTHER UNREGULATED SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AMOUNT DETECTED | RANGE LOW-HIGH |
|---|---|---|---|
| **DOC**[3] (ppm) | 2013 | 2.7 | 1.73–3.86 |
| **SUVA**[4] (ppm) | 2013 | 1.36 | 0.833–2.37 |
| **UV254**[5] (ppm) | 2013 | 3.58 | 2.18–5.64 |

[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.

**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

**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.