Borough of Chambersburg
2014 Water Quality Report

Per the United States Environmental Protection Agency (EPA) and the Pennsylvania Department of Environmental Protection (DEP) regulations, the Borough of Chambersburg Water Department, PWSID 7280005, presents its 2014 Consumer Confidence Report. This report is designed to provide consumers with valuable information concerning Chambersburg's drinking water quality including source location, compliance with federal and state regulations, contaminants detected, and most important: Is it safe to drink?

IS OUR WATER SAFE TO DRINK?

The EPA sets the standards for safe drinking water under the authority of the 1974 Safe Drinking Water Act. DEP adopts these standards and is the agency which regulates all public water systems in Pennsylvania.

The water that Chambersburg produces meets all EPA and DEP standards. Chambersburg also participates in the Partnership for Safe Water program. This is a voluntary self improvement program sponsored by the American WaterWorks Association and DEP. Members commit to improving plant operation and are held to stricter standards than those of EPA and DEP. Chambersburg meets those standards as well. Judging the water by these criteria, Chambersburg's water is indeed safe to drink. However, there are some people who are more at risk than the general population. Quoting from EPA:

> *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 (1-800-426-4791).*

SOURCE OF YOUR WATER

The source of Chambersburg's water is the East Branch of the Conococheague Creek. Water is collected from an 18 sq. mi. watershed northeast of Caledonia State Park. Most of our watershed lies within Adams County with a small percentage lying in Franklin and Cumberland Counties.

Long Pine Reservoir within our watershed can store up to 1.8 billion gallons of water, approximately a year and a half supply for the Borough of Chambersburg.

Protection of our watershed is the single most important factor in ensuring a safe water supply. We are fortunate that 95% of our watershed lies within Michaux State Forest. There is no industry, no agricultural activity, and only a small residential population in the 5% remaining watershed outside of Michaux State Forest.

In 2004, DEP completed a Source Water Assessment identifying potential sources of contamination within our watershed. Few potential contamination sites exist; however, the few that do exist pose a moderately high risk, mainly the Route 233 transportation corridor and residential activities along Route 233. This report is available for review at Chambersburg's Water Treatment Plant:

Julio Lecouna Water Treatment Plant
7659 Lincoln Way East
Fayetteville, PA 17222
Phone number: (717) 352-7450.

Figure 1: Long Pine Run Reservoir Spillway

EPA requires that the following information about drinking water contaminants be included in this report.

SOURCES OF CONTAMINATION

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 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:

- *Microbial contaminants, such as viruses, bacteria and protozoa, which may come from sewage treatment plants, septic systems, agriculture livestock operations, and wildlife.*
- *Inorganic contaminants, such as salts and metals, which can be naturally-occurring or 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
- *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 public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

As a surface water source, our water is naturally susceptible to surface runoff and any contaminants carried by the runoff which include microbial contaminants from wildlife and the small residential population in our watershed. Removal of the clay and silt particles and organic debris that harbor these microbial contaminants is the main function of our water filtration plant.

The absence of industry and agriculture in our watershed minimizes the threat of organic chemical pollution. Until recently, we were exempt from monitoring for pesticides and herbicides. The aquifer feeding the springs and streams which flow into Long Pine Reservoir and the Conococheague Creek is practically inert, adding almost no minerals to the water. There is only a small amount of naturally occurring radioactivity present in our water.

What we do have is lots of trees. And trees produce leaves. As fallen leaves and other vegetation decompose, decomposition products enter the soil. These decomposition products, collectively called natural organic matter (NOM), mainly tannic, humic, and fulvic acids, enter the soil and are subsequently washed into the streams whenever a substantial rainfall event occurs. As the NOM concentration gets higher, treatment of the water becomes tougher until at some point treatment becomes almost impossible. At that point, we shut down the plant and rely on storage within our system. These shut-downs generally last 12-20 hours; but have lasted as long as 30 hours. Fortunately we possess 2+ days of storage within our distribution system.

Figure 2: Long Pine Run Reservoir

NOMs are not regulated contaminants; but, they can combine with chlorine to form regulated disinfection byproducts which are suspected carcinogens. Two regulated disinfection byproducts are total trihalomethanes and haloacetic acids. Levels of these compounds are usually low; but, occasionally can become elevated dependent on creek conditions.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The source of lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Borough of Chambersburg 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 in the plumbing 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 EPA Safe Drinking Water Hotline, (800) 426-4791, or at http://water.epa.gov/drink/info/lead. The Borough of Chambersburg has successfully implemented a Corrosion Control Plan designed to minimize the leaching out of lead and copper from household plumbing. This is accomplished by treating the water with Soda Ash (Sodium Carbonate) to raise the pH to a slightly alkaline level plus the addition of a polyphosphate corrosion control chemical. To check on the effectiveness of this program, Chambersburg conducts triannual lead monitoring at homes most susceptible to lead contamination. Samples are collected after a 6-8 hours stagnant period. The EPA action level for lead concentration has never been exceeded.

TREATMENT

When the Borough of Chambersburg first began drawing water out of the Conococheague Creek in 1912 near Caledonia, treatment consisted of a screen on the end of a pipe to remove large debris such as leaves and branches before water entered the transmission system. It was not unusual in those past days to turn on one's spigot

and have a salamander or other small visible organism flow out with the water. Fortunately, we have made significant progress since those days. We still remove leaves, branches, salamanders, etc. plus much more. Potable water standards are much more stringent than they were 100 years ago and will continue to be much more so.

Figure 3: Conococheague Creek Intake Facility

The Borough's Julio Lecuona Water Treatment Plant's purpose is to:

- Remove suspended and colloidal matter from the water
- Reduce color.
- Remove iron and manganese which can cause laundry staining problems.
- Control taste and odor.
- Reduce corrosivity to pipes and household plumbing.
- Inactivate pathenogenic viruses, bacteria, and protozoans.

All this is done to produce water that meets current EPA and DEP standards.

As prescreened water enters the treatment plant, hydrated lime slurry is injected into the water to add alkalinity. Then aluminum sulfate (alum) and activated silica are added to act as a coagulant. The treated water enters large circular tanks where it is gently mixed and the coagulating chemicals cause the small suspended particles to stick together eventually forming larger, heavier particles that will settle out.

After the settling phase, water flows to the filters where the finer particles are removed. Our filters are classified as multimedia rapid sand filters. As water flows through three layers of specially graded sand, the remaining particles in the water are removed by a process called adsorption. During this process, the sand grains act as tiny "magnets" which attract suspended material as the water flows through the filter.

Following filtration, the water is disinfected with chlorine to kill any microorganisms present. Soda ash, (sodium carbonate) is added to raise the pH of the water into a slightly alkaline range. Fluoride is added to help prevent dental decay as recommended by the American Dental Association. A blended polyphosphate solution is added for corrosion control, this helps protect the distribution mains as well as household plumbing.

Following treatment, water flows to a 2 million gallon underground clearwell. From there, the finished water flows by gravity to Chambersburg. An outstanding feature of our system is that it is completely gravity delivered, a tremendous energy savings since there are no pumping costs. Water is available to almost every customer in the 40 – 80 PSI pressure range.

CONTAMINANTS

A contaminant is anything in the water that is not a water molecule. Water in its purest form is practically unknown in nature; even distilled water contains some contaminants. Public water suppliers monitor for over 80 contaminants that are potentially hazardous to human health if present in the water above certain levels. Chambersburg's water contains very few regulated contaminants, all at levels significantly below limits set by EPA and DEP. The table on the next page lists all the **detected regulated contaminants** one might expect to find in a typical sample of Chambersburg water based on analyses performed in the year 2013 or most recent prior to 2013. DEP allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

A complete list of all analytical results and other pertinent information can be viewed on the PA Department of Environmental Protection's Drinking Water Reporting System webpage www.drinkingwater.state.pa.us/dwrs/HTM/SelectionCriteria.html; select "Public Water System ID"; then enter "7280005"; select a category from "Information Request" and Submit. All analytical results are accessible on ensuing page.

COMPLIANCE WITH THE SAFE DRINKING WATER ACT

There were no violations of the Safe Drinking Water Act in 2013.

MISCELLANEOUS

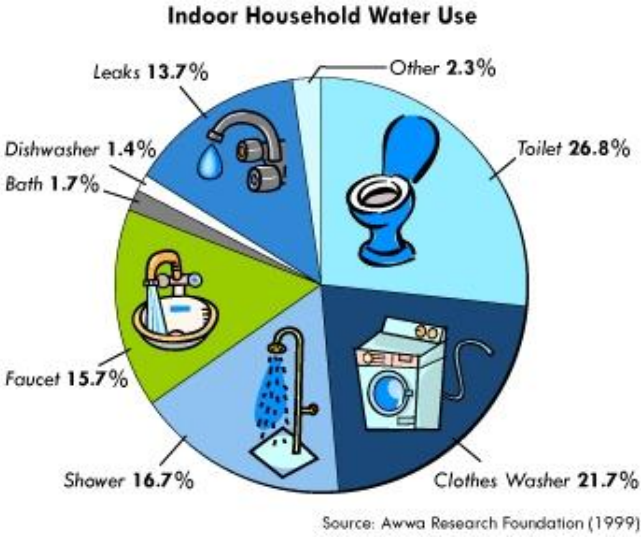
HARDNESS: Chambersburg water has very little hardness due to the lack of calcium carbonate and other minerals in the water. The hardness of Chambersburg water is approximately 10 parts per million or about ½ grain per gallon. Many people have found that they require less detergent in their dishwasher than what is recommended because soft water produces more suds than hard water.

PRECIPITATION: Our watershed in the Blue Ridge Mountains receives an average of 44 inches of rainfall equivalent per year. In 2013, we received 40".

WATER CONSERVATION: Chambersburg is fortunate to possess an abundant water supply. Realizing that this is a precious resource, the Borough has taken an aggressive posture on leak detection to reduce the amount of unaccounted water within our distribution system. As a result, water production is at a much lower level than it has been for several years.

Just as the Borough practices water conservation, so too can individual customers. Practicing conservation will lower your water bills and if you are a Borough resident, will lower your sewer bill as well since sewer bills are based on water usage, hence, a double savings. Here are some tips to reduce water usage:

- Repair leaking faucets and toilets.
  - 1 out of every 5 toilets in the U.S. is leaking at any point in time.
  - Leaking toilets are the No. 1 cause of high water bills.
  - The average leaking toilet wastes 100 gallons of water per day, or nearly 40,000 gallons of water per year, enough to fill an Olympic sized swimming pool.
  - The total U.S. water loss due to leaking toilets has been estimated to be as high as 5 billion gallons per day, or nearly 2 trillion gallons per year!
- Water lawn wisely, water in evening or early morning to minimize evaporation losses.
- Install water efficient appliances in your home. Look for EPA WaterSense labels.
- Take shorter showers.
- Turn off water while brushing teeth or shaving.
- Turn off hose while washing your car.
- Operate dishwashers and washing machines only with full loads.



DRINKING WATER FACTS

- Water is the only substance found on earth in three forms, solid, liquid, and gas.
- Of all water on earth, 97% is salt water found in oceans and seas.
- Only 1% of the earth's water is available for drinking water. 2% is frozen in polar ice caps.
- 10% of available fresh water is contained in Lake Superior.
- Bottled water is about 1000 times more expensive than tap water.
- The average American uses over 100 gallons of water per day.
- A person can live more than a month without food, but only about a week, depending on conditions, without water.

Figure 4: Nitterhouse Drive Elevated Tank

QUESTIONS OR CONCERNS?

Questions concerning this report or anything concerning water quality can addressed to Jim Kampstra, by phone at (717) 352-7450 between the hours of 7:00 A.M. and 3:00 P.M or by email at chambersburgwater@chambersburgpa.gov. Although there are no public meetings devoted solely to water issues, regular Borough Council meetings are open to the public throughout the year and there is an open forum period where one can voice concerns about anything pertaining to Borough business. Call (717) 264-5151 for dates and times of public meetings.

More information on contaminants and health effects can be obtained by calling the **EPA Safe Drinking Water Hotline** at **(800) 426-4791.**

Need additional copies of this report? Call (717) 352-7450 and more reports will be provided.

The Borough of Chambersburg is proud to be a member of the Partnership for Safe Water, since 2009.

The Partnership's mission is to improve the quality of drinking water delivered to customers of public water supplies by optimizing system operations.

Water Quality Table

The tables on this page list all of the drinking water contaminants that we detected during the 2012 calendar year. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented is from testing done January 1 through December 31, 2013. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. ***During 2013 your water met or surpassed all standards for safety.***

CONTAMINANT	HIGHEST LEVEL ALLOWED (MCL)	MCLG (EPA GOAL)	HIGHEST DETECTED LEVEL	RANGE OF DETECTION	ANALYSES DATE	SOURCES OF CONTAMINANT
INORGANIC CONTAMINANTS						
BARIUM	2000 ppb	2000 ppb	27 ppb	n/a	2013	EROSION OF NATURAL DEPOSITS
FLUORIDE	4 ppm	4 ppm	0.78 ppm	0.57-0.78 ppm	2013	WATER ADDITIVE
SULFATE	-	-	19.4 ppm	n/a	1996	EROSION OF NATURAL DEPOSITS
RADIOACTIVE CONTAMINANTS						
ALPHA EMITTERS	15 pCi/L	0.00	1.6 pCi/L	n/a	2003	EROSION OF NATURAL DEPOSITS
RADIUM	5 pCi/L	0.00	0.1 pCi/L	n/a	2002	EROSION OF NATURAL DEPOSITS
DISINFECTANT						
CHLORINE	4 ppm (MRDL)	4ppm(MRLG)	1.27 ppm	0.71-1.27 ppm	2013	WATER ADDITIVE
DISINFECTION BYPRODUCTS						
TOTAL TRIHALOMETHANES	80 ppb	n/a	44.8 ppb	26.3-70.1 ppb	2013	DISINFECTION BYPRODUCT
TOTAL HALOACETIC ACIDS	60 ppb	n/a	39.9 ppb	17.0-46.6 ppb	2013	DISINFECTION BYPRODUCT
MCL compliance is based on a running annual average of 4 samples collected quarterly; therefore an individual sample may exceed MCL and not be a violation						
LEAD AND COPPER 90% of all analyses must be < AL						
LEAD	15 ppb (AL)	0.00	16 ppb	ND - 16 ppb	2013	CORROSION OF HOUSEHOLD PLUMBING
COPPER	1.3 ppm (AL)	1.3 ppm	0.47 ppm	.011-.047 ppm	2013	CORROSION OF HOUSEHOLD PLUMBING
43 homes with high potential for lead and copper contamination were monitored in 2013. 90th percentile copper concentration was 0.031ppm. 90th percentile lead concentration was < 3ppb.						
TURBIDITY (FILTERED WATER CLARITY)						
TURBIDITY	TT= 1 NTU for a single measurement	0	0.150 NTU	0.023-0.150 NTU	8/15/2013	SOIL RUNOFF
	TT=at least 95% of monthly samples ≤0.3 NTU	0	100.00%	n/a	n/a	SOIL RUNOFF
Average turbidity for 2013 was 0.028 NTU.						
ORGANIC CONTAMINANTS						
TOTAL ORGANIC CARBON	35% of source water	n/a	1.3 ppm	ND - 1.3 ppm	2013	DECAYING VEGETATION

OFFICE HOURS

The Water Department Office can be reached Monday through Friday between 8:00am and 5:00pm at (717) 709-2285.
Billing inquiries should be directed to (717) 264-5151.
The water treatment plant can be reached Monday through Friday between 7:00am and 3:00pm at (717) 352-7450.
For weekend and after hours water emergencies, please call (717) 263-4111.

Borough of Chambersburg
100 South Second Street
Chambersburg, PA 17201

POSTAGE

CONSUMER CONFIDENCE REPORT

This report contains important information about your drinking water.
Translate it or speak with someone who understands it.

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

Dear Customer:

This is an annual report on the quality of water delivered by the Borough of Chambersburg. It meets the federal Safe Drinking Water Act (SDWA) requirement for "Consumer Confidence Reports" and contains information on the source of our water, its contaminants, and how it compares to (EPA) and state standards. Safe water is vital to our community. Please read this report carefully, and if you have any questions, contact the Borough Water Department at (717) 352-7450.

In 2013, we routinely tested samples of you water to assure that it met established water quality standards set by the United States Environmental Protection Agency (EPA), and the Pennsylvania Department of Environmental Protection (DEP). We are proud to report that your water met all of the standards for safe drinking water. All test results are kept on file and available to the public.

Respectfully submitted,

Borough of Chambersburg

Jeffrey Stonehill
Borough Manager
Director of Utilities

Lance Anderson, P.E.
Water/Sewer Superintendent

James Kampstra
Water Plant Supervisor