

**2018 ANNUAL DRINKING WATER QUALITY REPORT****PWSID #: 7360007 NAME: Christiana Borough Water Authority**

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, ó hable con alguien que lo entienda. (This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it.)

WATER SYSTEM INFORMATION:

This report shows our water quality and what it means. If you have any questions about this report or concerning your water utility, please contact Carol Pringle at 610-593-5199 or e-mail christianaboro@comcast.net. We want you to be informed about your water supply. If you want to learn more, please attend any of our regularly scheduled meetings. They are held the first Tuesday of each month at 7 pm at the Christiana Borough Hall.

SOURCE(S) OF WATER:

Our water sources are two wells located near the intersection of Simmontown Road and Spring Road in Sadsbury Township and a third well located within Lion's Park.

A Source Water Assessment of our sources was completed by the PA Department of Environmental Protection (Pa. DEP). The Assessment has found that the two Sadsbury Township wells have a higher risk and are potentially most susceptible to Agricultural contaminants through the application of manure, fertilizer, herbicides and pesticides. These may contribute nitrates, microbiological contaminants or synthetic organic compounds (SOCs). The Assessment also found that the third well located within Lion's Park had a low risk of contamination from nearby industrial properties. A summary report of the Assessment is available on the Source Water Assessment Summary Reports eLibrary web page: www.elibrary.dep.state.pa.us/dsweb/View/Collection-10045. Complete reports were distributed to municipalities, water supplier, local planning agencies and PADEP offices. Copies of the complete report are available for review at the Pa. DEP South-Central Regional Office Records Management Unit at (717) 705-4700.

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).

MONITORING YOUR WATER:

We 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, 2018. The State 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.

DEFINITIONS:

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

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 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 entry point to the distribution system.

Level 1 Assessment – A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment – A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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

Mrem/year = millirems per year
(a measure of radiation absorbed by the body)

ppm = parts per million, or milligrams per liter (mg/L)

pCi/L = picocuries per liter (a measure of radioactivity)

ppq = parts per quadrillion, or picograms per liter

ppb = parts per billion, or micrograms per liter (µg/L)

ppt = parts per trillion, or nanograms per liter

DETECTED SAMPLE RESULTS:

Chemical Contaminants								
Contaminant	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Antimony (IOC)	6	6	0.7	0.0 – 0.7	ppb	2018	N	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Barium (IOC)	2	2	0.075	0.042 -0.075	ppm	2018	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium (IOC)	100	100	1	0.0 - 1	ppb	2018	N	Discharge from steel and pulp mills; Erosion of natural deposits
Atrazine	3	3	< 0.25	N/A	ppb	2017	N	Run-off from herbicides used on crops
Nitrate	10	10	7.10	5.63 – 9.19	ppm	2018	N	Run-off from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Copper	AL=1.3	1.3	0.023	0.0 – 0.023	ppm	2018	N	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
HAA5 (Haloacetic Acids)	60	N/A	13.2	0.0 – 13.2	ppb	2018	N	By-product of drinking water disinfection
TTHMs (Total Trihalomethanes)	80	N/A	9.3	7.3 – 9.3	ppb	2018	N	By-product of drinking water chlorination
Gross Alpha	15	0	7.51	N/A	pCi/l	2018	N	Erosion of natural deposits
Turbidity	TT	N/A	0.94	0.027 – 0.94	NTU	2014	N	Naturally present in the environment
Distribution Chlorine	MRDL=4	MRDLG=4	0.82	0.52 – 0.82	ppm	Two monthly	N	Water additive used to control microbes

Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

We had no detections of Synthetic Organic Contaminants or Volatile Organic Contaminants.

Entry Point Disinfectant Residual							
Contaminant	Minimum Disinfectant Residual	Lowest Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Chlorine Residual (Entry Point 101)	0.20	0.84	0.84 – 1.82	ppm	4/28/2018	N	Water additive used to control microbes.
Chlorine Residual (Entry Point 102)	0.40	0.42	0.42 – 1.25	ppm	4/15/2018	N	Water additive used to control microbes.

Lead and Copper (20 samples collected 2/22/2018)							
Contaminant	Action Level (AL)	MCLG	90th Percentile Value	Units	# of Sites Above AL of Total Sites	Violation Y/N	Sources of Contamination
Lead	15	0	20	ppb	3 of 20	Y	Corrosion of household plumbing.
Copper	1.3	1.3	0.54	ppm	0 of 20	N	Corrosion of household plumbing.

Lead and Copper (20 samples collected 10/17/18)							
Contaminant	Action Level (AL)	MCLG	90th Percentile Value	Units	# of Sites Above AL of Total Sites	Violation Y/N	Sources of Contamination
Lead	15	0	3	ppb	0 of 20	N	Corrosion of household plumbing.
Copper	1.3	1.3	0.34	ppm	0 of 20	N	Corrosion of household plumbing.

DETECTED CONTAMINANTS HEALTH EFFECTS LANGUAGE: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

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. Christiana Borough Water Authority 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 <http://www.epa.gov/safewater/lead>.

Microbial (related to Assessments/Corrective Actions regarding TC positive results)					
Contaminants	TT	MCLG	Assessments/ Corrective Actions	Violation Y/N	Sources of Contamination
Total Coliform Bacteria	Any system that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement	N/A	See detailed description under "Detected Contaminants Health Effects Language and Corrective Actions" section	N	Naturally present in the environment.

DETECTED CONTAMINANTS HEALTH EFFECTS LANGUAGE AND CORRECTIVE ACTIONS; *Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially-harmful, bacteria may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.*

During the past year we were required to conduct one Level 1 Assessment which was completed. No corrective actions were required because of the Level 1 Assessment.

OTHER VIOLATIONS:

Christiana Borough received a "Late Reporting" violation for submitting the Level 1 Assessment on September 10 instead of the due date, September 8, 2018.

EDUCATIONAL INFORMATION:

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 and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater run-off, 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 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 and DEP prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA and DEP 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 contaminants does not necessarily indicate that 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).**