

2016 ANNUAL DRINKING WATER QUALITY REPORT

PWSID #: 7360058 -- NAME: CITY OF LANCASTER, PA

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. We want you to be informed about your water supply. If you have any questions about this report or concerning your water utility, please contact the water quality lab at (717) 291-4818.

SOURCES OF WATER:

Our sources of water are the Conestoga River and the Susquehanna River located in Lancaster County. A Source Water Assessment was completed in 2012 by the PA Department of Environmental Protection (PA DEP). The Assessment found our sources are potentially susceptible to agricultural activity, accidental spills along roads and urban runoff. Overall, our sources have a low risk of significant contamination. The assessment is available at: <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-59455/RS7360058001%20City%20of%20Lancaster%20BofW.pdf>. Complete reports were distributed to municipalities, water supplier, local planning agencies and PA DEP offices. Copies of the complete report are available at the DEP Regional Office, Records Management Unit at 484-250-5910.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as individuals 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, 2016. 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.

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

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

ppb = parts per billion, or micrograms per liter

pCi/L = picocuries per liter, measure of radiation

ppq = parts per quadrillion or picograms per liter

mrem/year = millirems per year

ppm = parts per million or milligrams per liter

ppt = parts per trillion or nanograms per liter

DETECTED SAMPLE RESULTS: SUSQUEHANNA PLANT; ENTRY POINT 101

Chemical Contaminants								
Contaminant	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Fluoride	2*	2	0.7	---	ppm	2016	N	Water additive that promotes strong teeth.
Nitrate	10	10	1.35	---	ppm	2016	N	Runoff from fertilizer use.
Combined Uranium	30	0	1.06	---	pCi/L	2011	N	Erosion of natural deposits.

* EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.

Turbidity						
Contaminant	MCL	MCLG	Level Detected	Sample Date	Violation Y/N	Source of Contamination
Turbidity	TT=1 NTU for a single measurement	0	0.13 NTU	09/23/16	N	Soil runoff.
	TT= at least 95% of monthly samples ≤0.3 NTU		≤0.3 NTU 100% of the time	Jan - Dec 2016	N	

Total Organic Carbon (TOC)					
Contaminant	Range of percent Removal Required	Range of percent removal achieved	Number of quarters out of compliance	Violation Y/N	Sources of Contamination
TOC	0% - 35%	27%-56%	0	N	Naturally present in environment.

Entry Point Disinfectant Residual: Susquehanna and Conestoga Treatment Plants							
Contaminant	MinRDL	Lowest Level Detected	Range of Detections	Units	Date of Lowest Sample	Violation Y/N	Sources of Contamination
Susquehanna Plant Chlorine	0.2	0.4	0.4 – 2.46	ppm	03/16/16	N	Water additive used to control microbes.
Conestoga Plant Chlorine	0.2	0.37	0.37 - 1.28	ppm	06/02/16	N	Water additive used to control microbes.

DETECTED SAMPLE RESULTS: CONESTOGA WATER PLANT; ENTRY POINT 102

Chemical Contaminants								
Contaminant	MCL in CCR Units	MCLG	Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Fluoride	2*	2	0.8	- - -	ppm	2016	N	Water additive to promote strong teeth.
Nitrate	10	10	5.48	Four samples 3.91 – 5.48	ppm	2016	N	Runoff from fertilizer use.
Combined Uranium	30	0	1.48	- - -	pCi/L	2011	N	Erosion of natural deposits.
Gross Beta Particle Activity	50**	0	3.8	- - -	pCi/L	2014	N	Decay of natural and man-made deposits

*EPA's MCL for fluoride is 4 ppm. However, Pennsylvania has set a lower MCL to better protect human health.

**The MCL for Gross Beta Particle Activity is 4 mrem/year. Since there is no simple conversion between mrem/year and pCi/L, EPA considers 50 pCi/L to be the level of concern for Gross Beta Particle Activity.

Turbidity						
Contaminant	MCL	MCLG	Level Detected	Sample Date	Violation Y/N	Source of Contamination
Turbidity	TT=1 NTU for a single measurement	0	0.06 NTU	01/04/16	N	Soil runoff.
	TT= at least 95% of monthly samples ≤0.3 NTU		≤0.3 NTU 100% of the time	Jan - Dec 2016	N	

Total Organic Carbon (TOC)					
Contaminant	Range of % Removal Required	Range of percent removal achieved	Number of quarters out of compliance	Violation Y/N	Sources of Contamination
TOC	0 – 25%	8% - 44%*	0	N	Naturally present in environment.

*The sample from January had 14% removal, below the required 15% removal. The water plant was still in compliance because alternate compliance criteria was met for SUVA, TOC, and performance ratio.

DETECTED SAMPLE RESULTS: DISTRIBUTION SYSTEM

Distribution Disinfectant Residual							
Contaminant	MRDL	Highest Average Result	Range of Monthly Avg Results	Units	Month w/ Highest Avg. Result	Violation Y/N	Sources of Contamination
Chlorine	4.0	0.9	0.7 - 0.9	ppm	August 2016	N	Water additive used to control microbes.

Disinfection Byproducts								
Contaminant	MCL in CCR Units	MCLG	Highest LRAA	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Haloacetic Acids	60	n/a	64**	14-88	ppb	2016	Y *	By-product of disinfection
Trihalomethanes	80	n/a	79	12.6-150.9	ppb	2016	N *	By-product of disinfection

*Violation of MCL is based on a Locational Running Annual Average.

**The fourth quarter result of one of the distribution system locations, was 88ppb, which caused the LRAA to be 64ppb for that quarter.

Lead and Copper								
Contaminant	Action Level (AL)	MCLG	90 th Percentile Value	Units	# of Sites Above AL of Total Sites	Sample Date	Violation Y/N	Sources of Contamination
Lead	15	0	6.0	ppb	1 of 50	2016	N	Corrosion of home plumbing.
Copper	1.3	1.3	0.153	ppm	0 of 50	2016	N	Corrosion of home plumbing

<i>Microbial (related to Assessments/Corrective Actions regarding TC positive results)</i>					
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	0	N	Naturally present in the environment.

Microbial (related to <i>E. coli</i>)					
Contaminants	MCL	MCLG	Positive Sample(s)	Violation Y/N	Sources of Contamination
<i>E. coli</i>	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> .	0	0	N	Human and animal fecal waste.
Contaminants	TT	MCLG	Assessments/ Corrective Actions	Violation Y/N	Sources of Contamination
<i>E. coli</i>	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	0	N	Human and animal fecal waste.

VIOLATIONS:

There was an MCL violation for Haloacetic Acids for the fourth quarter of 2016. Testing results we received on 01/05/17, for the fourth quarter of 2016, show that a portion of our system exceeded the maximum contaminant level (MCL), for Haloacetic Acids (HAA). The EPA standard for HAAs is 60ppb. The 88ppb result from the fourth quarter of 2016 caused the average level of HAA, over the past four quarters, to be 64ppb. We issued a public notice on 01/20/2017 for this violation.

HEALTH EFFECTS:

About our Haloacetic Acid MCL violation: Some people who consume large volumes of drinking water containing HAAs in excess of the MCL (60ppb) over many years, may have an increased risk of getting cancer.

When chlorine is used to kill harmful bacteria and viruses, in the treatment of drinking water, the chlorine combines with naturally occurring organic substances such as decaying leaves and plants present in the source water, to form chemicals called disinfection byproducts (DBPs). The EPA sets standards for controlling the levels of disinfection byproducts (DBPs), including Trihalomethanes (THMs) and Haloacetic acids (HAAs). We monitor our drinking water for these contaminants, on a quarterly basis.

Within 24 hours of receiving the official laboratory result and being notified of the exceedance, we had reduced the chlorine dosage at our water treatment plant and chlorine boosting facilities and increased flushing within the

distribution system. In addition to this, we have started to increase the frequency at which we test for DBPs, above the frequency required by regulation.

If you would like more information about this violation and the steps we are taking to return to compliance, please visit our website: <http://www.cityoflanasterpa.com> or contact the City of Lancaster Water Quality Lab at 717-291-4818.

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).

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 City of Lancaster, Bureau of Water is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Lead was not detected in City drinking water when it leaves our treatment plants and underground pipes. 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>. For information about lead, go to the city web site: <http://www.cityoflanasterpa.com/information-about-lead-drinking-water>. If you have questions about City drinking water, contact the water quality lab at 717-291-4818.