City of Lancaster
2023 ANNUAL DRINKING WATER QUALITY REPORT

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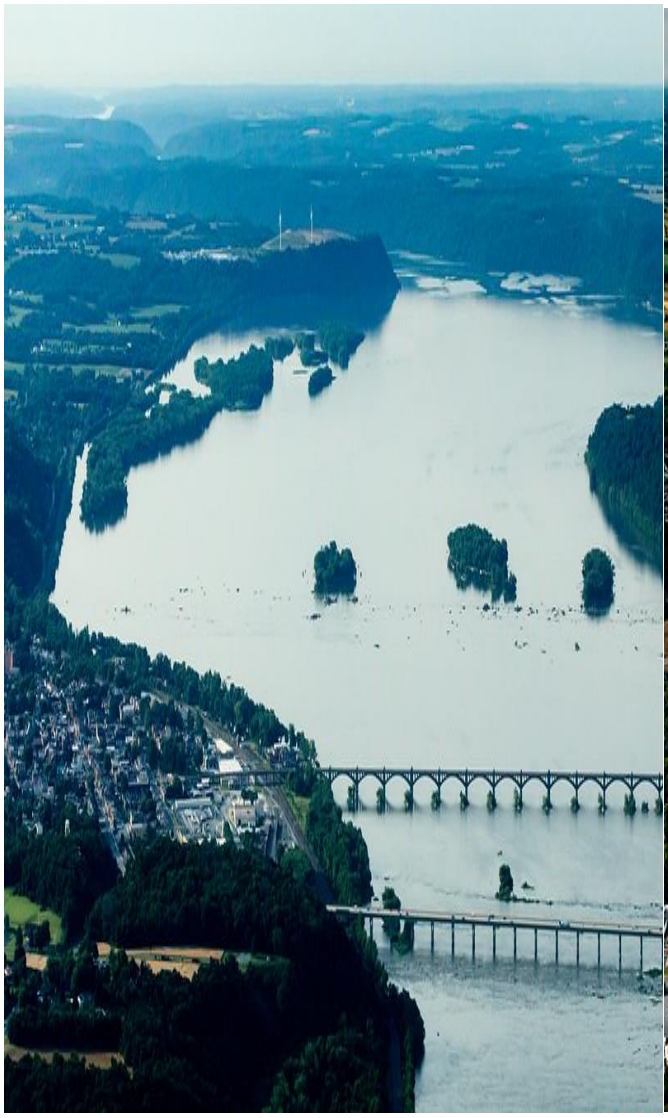

Susquehanna River

Conestoga River

(Photos by Will Parson/Chesapeake Bay Program)

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 describes the City of Lancaster's water quality and what it means. We want you, our customer, 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 suppliers, local planning agencies and PA DEP offices. Copies of the complete report are available at the PA 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* (800-426-47

MONITORING YOUR WATER:

City staff 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, 2023. 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

EPA – United States Environmental Protection Agency

FDA – United States Food and Drug Administration

PA DEP - Pennsylvania Department of Environmental Protection

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	0.57	- - -	ppm	2023	N	Water additive that promotes strong teeth.
Barium	2	2	0.022	- - -	ppm	2023	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrate	10	10	1.02	- - -	ppm	2023	N	Runoff from fertilizer use; Leaching from septic tanks, Sewage; 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	0.12 NTU	08/07/23	N	Soil runoff.
	TT= at least 95% of monthly samples≤0.15 NTU		≤0.15 NTU 100% of the time	Jan - Dec 2023	N	

DETECTED SAMPLE RESULTS: SUSQUEHANNA PLANT; ENTRY POINT 101 CONTINUED

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%	8% - 39%	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	0.20	0.72	0.72 - 2.42	ppm	01/20/23	N	Water additive used to control microbes.
Conestoga Plant Chlorine	0.20	0.43	0.43 - 1.37	ppm	07/24/23	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	0.62	- - -	ppm	2023	N	Water additive to promote strong teeth.
Nitrate	10	10	4.78	Four samples 3.73 – 4.78	ppm	2023	N	Runoff from fertilizer use.
Barium	2	2	0.053	- - -	ppm	2023	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposit
Atrazine	3	3	0.55	- - -	ppb	2023	N	Runoff form Herbicides used on row crops
Perfluorooctanesulfonic Acid	18	14	5.37	2.98-5.37	ppt	2023	N	Industrial discharge and firefighting foam. Man-made and used in various products to make items resistant to water, grease, and stains.
Perfluorooctanoic Acid	14	8	16.6	9.15-16.6	ppt	2023	N+	Industrial discharge and firefighting foam. Man-made and used in various products to make items resistant to water, grease, and stains.
Perfluorobutanesulfonic Acid	NA^	NA	4.42	- - -	ppt	2023	N	Industrial discharge and firefighting foam. Man-made and used in various products to make items resistant to water, grease, and stains.

Perfluoroheptanoic Acid	NA^	NA	5.64	3.23-5.64	ppt	2023	N	Industrial discharge and firefighting foam. Man-made and used in various products to make items resistant to water, grease, and stains.
Perfluorohexanesulfonic Acid	NA^	NA	1.99	1.85-1.99	ppt	2023	N	Industrial discharge and firefighting foam. Man-made and used in various products to make items resistant to water, grease, and stains.
Perfluorohexanoic Acid	NA^	NA	15.1	5.77-15.1	ppt	2023	N	Industrial discharge and firefighting foam. Man-made and used in various products to make items resistant to water, grease, and stains.

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

+Violation is based on Running Annual Average.

^An MCL has not been established for these Contaminants, by either EPA or Pennsylvania.

DETECTED SAMPLE RESULTS: CONESTOGA WATER PLANT; ENTRY POINT 102 CONTINUED

Turbidity						
Contaminant	**MCL**	**MCLG**	**Level Detected**	**Sample Date**	**Violation Y/N**	**Source of Contamination**
Turbidity	TT=1 NTU for a single measurement	0	0.05 NTU	01/03/23	N	Soil runoff.
	TT= at least 95% of monthly samples≤0.15 NTU		≤0.15 NTU 100% of the time	Jan - Dec 2023	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%	12% - 33%	0	N	Naturally present in environment.

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	0.86	0.57 - 0.86	ppm	November 2023	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	54	4.63 – 136	ppb	2023	N*	By-product of disinfection
Trihalomethanes	80	n/a	76.9	16.6 - 166	ppb	2023	N*	By-product of disinfection

*Violation of MCL is based on **R**unning **A**nnual **A**verage

DETECTED SAMPLE RESULTS: DISTRIBUTION SYSTEM CONTINUED

Lead and Copper								
Contaminant	**Action Level (AL)**	**MCLG**	**90th Percentile Value**	**Units**	**# of Sites Above AL of Total Sites**	**Sample Date**	**Violation Y/N**	**Sources of Contamination**
Lead	15	0	9.9	ppb	2 of 50	2022	N*	Corrosion of home plumbing.
Copper	1.3	1.3	0.283	ppm	1 of 50	2022	N*	Corrosion of home plumbing

*Violation is based on 90th Percentile Value for Lead and Copper.

DETECTED SAMPLE RESULTS: DISTRIBUTION SYSTEM CONTINUED

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	0	N	Naturally present in the environment.

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

Contaminants	**TT**	**MCLG**	**Assessments/ Corrective Actions**	**Violation Y/N**	**Sources of Contamination**
E. coli	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.

Unregulated Contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. In 2023 the City of Lancaster participated in the first round of the Unregulated Contaminant Monitoring Rule (UCMR 5). There are 4 rounds of sampling once per quarter. Sampling was done at both Conestoga Treatment Plant and Susquehanna Treatment Plant, both of its finished water. All Susquehanna results were non-detected and only the detected results of Conestoga are in this report. For a copy of the full results please call the City of Lancaster Water Lab at (717) 291-4818.

Conestoga Treatment Plant UCMR5 Detected Results:

Contaminant	Units	Detection
PFBA	ppt	10
PFBS	ppt	5.5
PFHpA	ppt	5.1
PFHxA	ppt	18.1
PFPeA	ppt	12.8
PFOA	ppt	14.1

VIOLATIONS:

None

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, 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, the EPA and PA DEP prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. FDA and PA 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).

CRYPTOSPRODIUM MONITORING:

Cryptosporidium monitoring was performed for both sources of drinking water, Conestoga River and Susquehanna River. Cryptosporidium is a microbial pathogen found in source water throughout the US. The monitoring took place from April 2015 to March 2017. Results indicated that Cryptosporidium was present in both sources of water. This was only for our source water. Cryptosporidium was not detected in the finished water delivered to customers. Our water plants do everything to try to ensure no Cryptosporidium is in our finished water. Ultrafiltration Membrane technology is used by both plants to ensure the removal of this pathogen. This type of filtration can filter out particles and microorganisms much smaller than conventional filtration. Log Inactivation monitoring is also implemented to ensure proper disinfection. Even though 100 percent removal and disinfection of Cryptosporidium cannot be guaranteed, there is no reason to be concerned, based on the results of the Cryptosporidium monitoring of the source water.

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 the treatment plants and underground pipes. When your water has been sitting for several hours, you can minimize the potential for lead exposure from pipe materials by flushing your tap for 2 to 5 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: https://www.cityoflancasterpa.gov/services/water-sewer/. If you have questions about City drinking water, contact the water quality lab at 717-291-4818.

OTHER INFORMATION:

About 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.