

2019 ANNUAL DRINKING WATER QUALITY REPORT
PWSID# 7360140 UPPER LEACOCK TOWNSHIP MUNICIPAL 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 Michael A. Ewing, Senior Water Operator at Upper Leacock Township Municipal Authority Office @ 717-656-9755. 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 on the second Thursday of each month @ 6:30 pm at the Upper Leacock Township Office.

SOURCE(S) OF WATER:

Our water sources are five groundwater wells; Wells #6 and #16 at the Quarry Road Water Treatment Plant, Wells #9, #12, and #13 at the Newport Road Water Treatment Plant. We also use an interconnection with the City of Lancaster Water System at the New Holland Pike Water Treatment Plant. Each of these plants adjust pH and chlorinate the water, Quarry Road and Newport Road Treatment Plants both also soften the water. Newport Road Water Treatment Plant currently also removes Nitrate from the water.

A Source Water Assessment of our sources was completed by the PA Department of Environmental Protection (Pa. DEP). The Assessment has found that our sources are potentially most susceptible to residential, commercial, and industrial activities ranging from low for residential activities to high for some commercial and industrial activities. Most activities received a moderate to high relative risk of significant contamination. 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 suppliers, 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) 705-4732.

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:

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 of 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)

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

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

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

ppq = parts per quadrillion, or pictograms per liter

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	6	6	0.0011	0.0005-0.0011	ppm	1/18/18	N	Discharge from petroleum refineries, fire retardants, ceramics, electronics solder
Barium	2	2	0.022	-----	ppm	1/18/18	N	Discharge of drilling wastes, discharge from metal refineries, erosion of natural deposits
Chromium	100	100	0.003	-----	ppm	1/18/18	N	Discharge from steel and pulp mills, erosion of natural deposits
Haloacetic Acids	60	n/a	0.0351	0.00 – 0.0351	ppm	8/8/19	N	Byproduct of drinking water disinfection
Nitrate	10	10	5.84	5.12 – 5.84	ppm	10/10/19	N	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
Trihalomethanes	80	n/a	0.142	0.0083 – 0.142	ppm	8/8/19	Y	Byproduct of drinking water chlorination
Radium	5	0	0.31	0 – 0.31	pCi/L	10/30/14	N	Erosion of natural deposits
*EPA's MCL for fluoride is 4ppm. However, Pennsylvania has set a lower MCL to better protect human health.								

Entry Point Disinfectant Residual							
Contaminant	Minimum Disinfectant Residual	Lowest Level Detected	Range of Detections	Units	Sample Date	Violation Y/N	Sources of Contamination
Chlorine	0.40	0.48	0.48 – 1.58	ppm	12/28/19	N	Water additive used to control microbes

Lead and Copper

Contaminant	Action Level (AL)	MCLG	90 th Percentile Value	Units	# of Sites Above AL of Total Sites	Violation Y/N	Sources of Contamination
Lead	15	0	0.230	ppb	0 of 20	N	Corrosion of household plumbing
Copper	1.3	1.3	0.001	ppm	0 of 20	N	Corrosion of household plumbing

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

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 requirements	N/A	See description under "Detected Contaminants Health Effects Language and Corrective Actions" section	N	Human and animal fecal waste

Raw Source Water Microbial

Contaminants	MCLG	Total # of Positive Samples	Dates	Violation Y/N	Sources of Contamination
E. coli	0	0	-----	N	Human and animal fecal waste

DETECTED CONTAMINANTS HEALTH EFFECTS LANGUAGE AND CORRECTIVE ACTIONS:

On August 8, 2019 we had one of three samples exceed the MCL for Trihalomethanes. Some people who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. We have increased our sampling from annually to quarterly and have not exceeded the MCL again to date.

OTHER VIOLATIONS:

We received a violation for Failure to Maintain Records during 2019's routine Lead and Copper testing. Our contracted testing lab failed to report one sample of twenty to DEP in the time allowed. After the lab was made aware of the mistake by both DEP and the water department, the missing result was sent to DEP. We've discussed this issue with our lab and feel confident that it was a onetime mistake. There were no potential health effects as all required samples were taken and tested below the MCL.

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 run-off, 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 run-off, 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. Upper Leacock Township Municipal 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> .

OTHER INFORMATION:

About Nitrate: Nitrate in drinking water at levels above 10ppm 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.

2019 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, 2019. 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	0.64	---	ppm	2019	N	Water additive that promotes strong teeth.
Barium	2	2	0.024	---	ppm	2019	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrate	10	10	1.10	---	ppm	2019	N	Runoff from fertilizer use.

* 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	0.04 NTU	01/04/19	N	Soil runoff.
	TT= at least 95% of monthly samples ≤0.15 NTU		≤0.15 NTU 100% of the time	Jan - Dec 2019	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%	21%-54%	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	0.24	0.24– 2.01	ppm	04/14/19	N	Water additive used to control microbes.
Conestoga Plant Chlorine	0.2	0.32	0.32 - 1.54	ppm	02/02/19	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	0.52	---	ppm	2019	N	Water additive to promote strong teeth.
Nitrate	10	10	6.30	Four samples 5.60 – 6.58	ppm	2019	N	Runoff from fertilizer use.
Barium	2	2	0.051	---	ppm	2019	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposit
Gross Beta Particle Activity	50**	0	3.8	---	pCi/L	2014	N	Decay of natural and man-made deposits
Atrazine	3	3	0.29	---	ppb	2019	N	Runoff form Herbicides used on row crops

*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	0.09 NTU	09/25/19	N	Soil runoff.
	TT= at least 95% of monthly samples ≤0.15 NTU		≤0.15 NTU 100% of the time	Jan - Dec 2019	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% - 35%	19% - 39%	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	0.92	0.71-0.92	ppm	September 2019	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	42	9.9-66.5	ppb	2019	N	By-product of disinfection
Trihalomethanes	80	n/a	54.1	5.9-101	ppb	2019	N	By-product of disinfection

*Violation of MCL is based on Running Annual Average

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	5.7	ppb	0 of 50	2019	N	Corrosion of home plumbing.
Copper	1.3	1.3	0.16	ppm	0 of 50	2019	N	Corrosion of home plumbing

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
<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:

No Violation

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).

CRYPTOSPORIDIUM MONITORING:

Our system preformed Cryptosporidium monitoring for both sources of our 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 and not our finished water. Our water plants do everything to try to ensure NO Cryptosporidium is in our finished water. Our filtration for both plants is Ultrafiltration Membrane technology. This type of filtration can filter out particles and microorganisms much smaller than conventional filtration. We also use Log Inactivation monitoring to ensure proper disinfection. Even though we cannot guarantee 100 percent removal and disinfection of Cryptosporidium, we believe there is no reason to be alarmed about the results of the Cryptosporidium monitoring of our 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 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.cityoflancafterpa.com/information-about-lead-drinking-water>. 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.

