CITY OF LOVELAND
2018 DRINKING WATER CONSUMER CONFIDENCE REPORT

ORIGIN OF OUR WATER – Water for the City of Loveland is pumped from the ground at the wellfield at BettyRay. The City of Loveland has a current unconditioned license to operate our water system, License number OH1300812. It is a Class II facility with four licensed operators on staff. There are three wells at that location, each of which is capable of producing 1,300 GPM (gallons per minute). Each well is approximately 85 feet deep and taps into a natural aquifer (an aquifer is an underground formation of sand, gravel and rock where water fills empty spaces). These wells are capable of producing 5,000,000 gallons of groundwater a day. The water is treated on site with chlorine and fluoride before it is pumped to consumers. The City of Loveland has emergency interconnections with the City of Cincinnati and Clermont County.

WATER QUALITY CHARACTERISTICS – The City of Loveland drinking water met all Ohio EPA standards. Although our water is tested daily, weekly, and monthly for many contaminants, some testing is required infrequently. For example, the testing frequency for many inorganic contaminants is every three years. If a contaminant was not tested for in 2018 but was detected within the past five years, the testing date would be listed in the table under the "Year Sampled" column. All testing data represents the most recent testing in accordance with regulations. Enclosed is a table of contaminants of treated water from the Water Treatment Plant. Abbreviations included in the table are defined as follows. **MCL** (maximum contaminant level) – 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. **MCLG** (maximum contaminant level goal) – 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. **AL** (action level) – The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement which a water system must follow. **ppm** – parts per million or milligrams per liter. **ppb** – parts per billion or micrograms per liter. **pCi/L** – Picocuries per liter. **MRDLG** (maximum residual disinfectant level goal) – the level of residual disinfectant below which there is no known or expected risk to health. **MRDL** (maximum residual disinfectant level) – the highest disinfectant level allowed.

SOURCES OF CONTAMINATION TO DRINKING WATER - According to the Ohio EPA, "The sources of drinking water, both tap 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: (A) microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; (B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture urban storm water runoff, and residential uses; (D) 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 storm water runoff, and septic systems; (E) 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. FDA 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 (1-800-426-4791)."

HEALTH CONCERNS - According to the Ohio 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 infection. 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)."

LEAD EDUCATIONAL INFORMATION - 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 Loveland 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 at 800-426-4791 or at http://www.epa.gov/safewater/lead. The City of Loveland's potable water did NOT exceed required action levels in 2016.

COMMUNITY INPUT – Loveland City Council would like to hear your comments and concerns about the City's drinking water system. Council meetings are held at 7:00 PM on the second and fourth Tuesdays of each month. The meetings are held Loveland City Hall, 120 W. Loveland Avenue. Those who wish to address Council may sign up prior to the start of each meeting and will be given the opportunity to comment.

You are also invited to contact Scott Wisby, Public Works Director at (513) 707-6115 for water quality or pressure information. For after-hours emergencies, please call the dispatcher at (513) 677-7000. To request water and sewer service or for billing inquiries, please call (513) 683-0150, Ext. 1012.

SUSCEPTIBILITY ANALYSIS - The Ohio EPA has completed a study on Loveland's drinking water source to identify potential contaminants and provide guidance on protecting the drinking water source. According to this study, the aquifer that supplies water to the City of Loveland has a high susceptibility to contamination. This determination is based on the following: 1) lack of a protective layer of clay/shale/or other low permeability material overlying the aquifer; 2) shallow depth (less than 20-30 feet below ground surface) of the aquifer; 3) and the presence of manmade contaminants in treated water. Nitrates have been detected in the treated water, an impact from land use activities, but the concentrations are well below the federal and state drinking water standard of 10 ppm. The risk of future contamination can be minimized by implementing appropriate protective measures. More information about the source water assessment or what consumers can do to help protect the aquifer is available by calling Scott Wisby, Public Works Director, at (513) 707-6115.

UCMR SAMPLING – We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Regulation (UCMR3) program by performing additional tests on our drinking water. UCMR benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Any UCMR detections are shown in the data tables in this report. UCMR4 will take place in August, 2019. Contact us for more information on this program.

CONSTRUCTION PROJECTS – In 2018, the City of Loveland utilized a grant to install 5 insertion gate valves within the existing water distribution system in the Heights subdivision. The City also had maintenance and repainting performed on two elevated water storage tanks in 2018: the 0.5 MG tower on Commerce Drive, and the 1.0 MG tower in the White Pillars subdivision. The City of Loveland purchased bulk potable water from Clermont County while the White Pillars tank was out of service. Two water main replacement projects are planned for 2019: Cedar Drive from approximately 400' south of Oak St. to Tall Timber Dr., and along SR 48 and Loveland-Miamiville Rd. from the 90 degree bend near St. Columban Church to Sugar Tree Ln.

2018 WATER QUALITY CONTAMINANTS – CITY OF LOVELAND								
Contaminant	Units	Range Detected	Level Found	MCL	MCLG	Violation	Year Sampled	Typical Sources of Contamination
Disinfection Byproducts								
Total Trihalomethanes	Ppb	36.9-50.3	43.6	80	0	No	2018	By-product of drinking water chlorination
Bromoform	Ppb	1.72-2.36	2.04	Unregulated	Unregulated	No	2018	By-product of drinking water chlorination
Chloroform	Ppb	12.7-34.2	23.45	Unregulated	Unregulated	No	2018	By-product of drinking water chlorination
Dibromochloro-Methane	Ppb	5.69-8.53	7.11	Unregulated	Unregulated	No	2018	By-product of drinking water chlorination
Bromodichloro-methane	Ppb	8.72-13.3	11.01	Unregulated	Unregulated	No	2018	By-product of drinking water chlorination
Haloacetic acids (HAA)	Ppb	11.5-14.5	13	60	Unregulated	No	2018	By-product of drinking water disinfection
Synthetic Organic Contaminants								
Alachlor	Ppb	N/A	<0.1	2	0	No	2017	Runoff from herbicide used on row crops
Atrazine	Ppb	N/A	<0.07	3	3	No	2017	Runoff from herbicide used on row crops
Simazine	Ppb	N/A	<0.05	4	4	No	2017	Herbicide Runoff
Residual Disinfectants								
Total Chlorine	Ppm	.24 – 1.79	.81	MRDL = 4	MRDLG = 4	No	2018	Water additives used to control microbes
Inorganic Contaminants								
Copper*	Ppm	N/A	.51	AL=1.3	1.3	No	2018	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
	Zero samples out of thirty were found to have a copper level in excess of the Action Level of 1.3 ppm							
Lead*	Ppm	.024	0.007	AL=0.015	0	No	2018	Corrosion of household plumbing systems; erosion of natural deposits
	One sample out of thirty was found to have a lead level in excess of the Action Level of 0.015 ppm							
Fluoride	Ppm	.85 – 1.29	1.08	4	4	No	2018	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate	Ppm	N/A	.32	10	10	No	2018	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Barium	Ppm	N/A	0.06	2	2	No	2017	Discharge of drilling waste, discharge of metal refineries, erosion of natural deposits
Radioactive Contaminants								
Alpha Emitters	pCi/l	N/A	3	15	0	No	2014	Erosion of natural deposits
Combined Radium	PCi/l	N/A	0.90	5	0	No	2014	Erosion of natural deposits

2018 WATER QUALITY CONTAMINANTS – CITY OF LOVELAND								
Contaminant	Units	Range Detected	Level Found	MCL	MCLG	Violation	Year Sampled	Typical Sources of Contamination
Unregulated Contaminants								
Vanadium - Plant Tap	Ppb	<0.2 – 0.23	0.2	N/A	N/A	No	2014	N/A
Vanadium - Distribution	Ppb	<0.2 – 0.21	0.2	N/A	N/A	No	2014	N/A
Molybdenum – Plant Tap	Ppb	1.4 – 1.8	1.6	N/A	N/A	No	2014	N/A
Molybdenum – Distribution	Ppb	1.3 – 1.7	1.5	N/A	N/A	No	2014	N/A
Strontium – Plant Tap	Ppb	360 - 390	375	N/A	N/A	No	2014	N/A
Strontium – Distribution	Ppb	350 - 370	360	N/A	N/A	No	2014	N/A
Chromium – Plant Tap	Ppb	0.033 – 0.038	0.036	N/A	N/A	No	2014	N/A
Chromium – Distribution	Ppb	0.05 – 0.06	0.05	N/A	N/A	No	2014	N/A

Unregulated contaminants monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants. The results in this table are from sampling done for the Unregulated Contaminant Monitoring Rule. 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.

EXCERPT FROM CLERMONT COUNTY WATER 2018 CONSUMER CONFIDENCE REPORT – Clermont County has a current unconditioned license to operate a public water system.

The Clermont County Water System operates three water treatment plants that pump into a common distribution system of pipes serving our customers.

The MGS plant, located near Miamiville, draws from wells in the Little Miami River Aquifer. In 2004, the Ohio EPA performed a source water assessment for the MGS wellfield and designated it as highly susceptible to contamination. This is based in part on the geology of the aquifer, which is shallow and has little or no impermeable materials atop it. Another factor is the presence of potential sources of pollution in the area. The EPA also notes the presence of nitrates in the water, which suggests manmade influence in the aquifer. However, the water continues to meet drinking water standards. These wellfields are monitored for contamination and cared for under an Ohio EPA endorsed Wellhead Protection Plan. Persons who wish to learn more may call Rick Fueston at 513-553-4113.

The PUB plant is near New Palestine, where its wells draw from the Ohio River Valley Aquifer. A susceptibility analysis from the Ohio EPA has determined that this aquifer has high susceptibility for contamination, based on a relatively thin layer of low permeability material overlying the aquifer, and the relatively shallow depth of the aquifer. Potential pollution sources in the area and a possible hydraulic connection to the Ohio River also contribute to this assessment. However, the EPA agrees that there is no evidence of existing chemical contaminants. These wellfields are monitored for contamination and cared for under an Ohio EPA endorsed Wellhead Protection Plan. Persons who wish to learn more may call Rick Fueston at 513-553-4113.

The Bob McEwen Water Treatment Plan (BMW) is located near Batavia and draws surface water from Harsha Lake, which was created by constructing a dam across the East Fork Little Miami River. Surface water is more susceptible to contamination than groundwater, so extensive testing of the raw water is conducted frequently. Chemical and bacteriological testing, as well as evaluation of the biological organisms living upstream of the lake is used to determine raw water quality and identify areas of concern. The Ohio EPA completed a source water assessment for BMW in 2004. The protection area around Harsha Lake and the upstream portions of the East Fork Little Miami River includes a number of commercial and industrial facilities, but the greater concern is runoff from the agricultural fields, the potential for spills at road and rail crossings, and residential septic systems in the watershed. Persons who wish to learn more may contact Brent Smith at 513-732-5386. Additional information on the watershed collected by Clermont County is available from the Office of Environmental Quality (OEQ) at 513-732-7894 or the website: http://www.oeq.net. After treatment, which includes Granular Activated Carbon filtration, water from the lake meets all required drinking water standards.

Clermont County Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water.

The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES - CLERMONT COUNTY WATER

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Barium (ppm)	2018	2	2	.036	.027-.036	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2018	[4]	[4]	1.1	0.2-2.7	No	Water additives used to control microbes
Fluoride (ppm)	2018	4	4	1.0	0.56-1.57	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic acids [HAA] (ppb)	2018	60	NA	48.0	25.6-71.9	No	By-product of drinking water disinfection
Nitrate (ppm)	2018	10	10	0.92	0.42-1.52	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	2018	1	1	0.1	0.1-0.1	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	81.0	10.3-104.0	Yes	By-product of drinking water disinfection
Total Organic Carbon [TOC] (removal ratio)	2018	TT	NA	1.29	1.08-1.64	No	Naturally present in the environment
Turbidity (NTU)	2018	TT	NA	0.264	0.021-0.264	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2018	TT=95% of samples meet the limit	NA	100	NA	No	Soil runoff

Turbidity Footnote for Clermont County Water: Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

CLERMONT COUNTY WATER

Substance (Unit of Measure)	Year Sampled	AL	MCLG	Amount Detected (90^{th} Percentile)	Range Low-High	Sites Above AL/Total Sites	Violation	Typical Source
Copper (ppm)	2017	1.3	1.3	.39	0.05-0.647	0/52	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2017	15	0	<5.0	<5-12	0/52	No	Corrosion of household plumbing systems; Erosion of natural deposits

Table Definitions
ppm (parts per million): One part substance per million parts water (or milligrams per liter).
ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of drinking water disinfectant below which there is no known or expected health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ND (Not Detected): Indicates that the substance was not found by laboratory analysis.

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

CLERMONT COUNTY WATER VIOLATION

In the fourth quarter of 2018, at one sample location in Newtonsville, Clermont County Water exceeded the MCL for TTHMs. Because TTTHM formation is a function of organics reacting with chlorine over time, we have been able to address this problem by reducing water age in our system as well as decreasing the amount of organics leaving our surface water treatment plant by modifying the use of our granular-activated carbon (GAC). This approach has worked, and levels in the first quarter of 2019 are back below the MCL.

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their livers, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

SECONDARY SUBSTANCES - CLERMONT COUNTY WATER

Substance (Unit of Measure)	Year Sampled	SMCL	MCLG	Amount Detected	Range Low-High	Violation	Typical Source
Zinc (ppm)	2018	5	NA	0.010	0.010-0.010	No	Runoff/leaching from natural deposits; Industrial wastes