

## Cleveland Utilities WATER QUALITY REPORT - 2016

### Water Sources and Protection

Sources of Cleveland's drinking water include surface water from the Hiwassee and Tennessee Rivers, and ground water from limestone aquifers in the area (Waterville Spring). Cleveland Utilities also purchases water from other area utilities to ensure an adequate water supply to the service areas of Cleveland and Bradley County. These utilities include the Hiwassee Utilities Commission, Eastside Utility District and Savannah Valley Utility District.

Our goal is to protect our water from contaminants and we are working with the State to determine the vulnerability of our water sources to potential contamination. The Tennessee Department of Environment and Conservation (TDEC) and Cleveland Utilities have prepared a Source Water Assessment Program (SWAP) Report including a Wellhead Protection Plan for susceptibility of untreated water sources to potential contamination. To insure safe drinking water, all public water systems treat and routinely test their water. CU sources have been rated as reasonably susceptible based on geologic factors and human activities in the vicinity of the water source. An explanation of Tennessee's source Water Assessment Program, the Source Water Assessment summaries, susceptibility scorings and overall TDEC report to EPA can be viewed online at <http://tn.gov/environment/article/wr-wq-source-water-assessment> or contact Cleveland Utilities at 423-559-5277 or 423-478-0698, Monday – Friday between 8:00 a.m. and 4:00 p.m.

### Water Operations and Testing

Cleveland Utilities operates 3 water treatment plants which are staffed with state licensed operators. The operations staff is responsible for overseeing the treatment operation and performing quality control checks over all of the water produced by these plants. Cleveland Utilities Environmental and Regulatory Compliance Department is responsible for daily regulatory sampling, analytical testing, cross connection control, and end-of-line flushing to ensure that the quality and protection of the drinking water meets stringent State and Federal regulations.

### Contaminant 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 can pick up substances resulting from the presence of animals or from human activity. 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 EPA's Safe Drinking Water Hotline at (800-426-4791). In order to ensure that tap water is safe to drink, EPA and TDEC prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water. Contaminants that might be expected in source water include microbiological contaminants, pesticides and herbicides, inorganic contaminants,

organic chemical contaminants, and radioactive contaminants. Conventional surface water treatment processes produce safe, high quality drinking water for our customers.

### Special Health Information

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 healthcare providers. The Environmental Protection Agency and Centers for Disease Control 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).

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. Cleveland Utilities 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>.

### Cryptosporidium

*Cryptosporidium* is a microscopic parasite which is found in surface water throughout the U.S. and comes from animal waste and run-off. When ingested, it can result in diarrhea, fever and other gastrointestinal symptoms. *Cryptosporidium* is eliminated by an effective treatment combination including coagulation, sedimentation, filtration, and disinfection. As part of the Long Term 2 Enhanced Surface Water Treatment Rule, Cleveland Utilities analyzed the source water from the Hiwassee River for *Cryptosporidium* in 2015-16. There were seven detections in the fifteen samples collected. For more information on *Cryptosporidium*, contact the Safe Drinking Water Hotline (800-426-4791).

The Environmental Protection Agency (EPA) requires water systems to give consumers an annual report on the quality of their drinking water. CU provides consumers current water quality information by calling 423-559-5277 or 423-478-0698 between the hours of 8:00 a.m. and 4:00 p.m. Monday – Friday or on our web site at [www.clevelandutilities.com](http://www.clevelandutilities.com). *Este informe contiene información muy importante. Tradúscalo o hable con alguien que lo entienda bien.*

**The Board of Public Utilities of the City of Cleveland generally meets on the fourth Thursday of each month at 3:00 p.m. at Cleveland Utilities in the Tom Wheeler Training Center, 2455 Guthrie Avenue, NW, Cleveland, Tennessee.**

# 2016 WATER QUALITY DATA

## REGULATED AT THE DISTRIBUTION SYSTEM ENTRY POINT (WATER TREATMENT FACILITY)

Contaminant (unit)	Level Detected					Level Detected		Level Detected		M C L	MCLG	Source of Contaminant
	Analyzed	Violation Yes/No	C F P	W A T	H U C	Analyzed	E U D	Analyzed	S V U D			
Turbidity (ntu) ①	2016	No	0.27	0.27	0.40	2016	0.19	2016 Avg.	0.06	TT	NA	Soil runoff.
	Range		0.02 - 0.27	0.03 - 0.27	0.02 - 0.40	Range	0.03 - 0.19	Range	.02 - 0.76			
Nitrate (ppm)	2016	No	0.192	0.952	0.177	2016	0.30	Not Reported		10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Total Organic Carbon (TOC) (ppm)	2016 ②	No	0.84 ④	NR	0.90 ④	2016	1.15 ④	Not Reported		TT	TT	Naturally present in the environment.
	Range		0.76 - 0.99	NR	0.75 - 1.09		0.598 - 1.55					
Combined Radium (pCi/l)	2014	No	< 2.41	ND	< 1.08	Not Reported		Not Reported		5	0	Erosion of natural deposits.
Alpha Emitters (pCi/l)	2014	No	1.3	2.1	ND	Not Reported		Not Reported		15	0	Erosion of natural deposits.
Sodium (ppm)	2016	No	2.10	2.1 (2014)	2.08	2.16	7.65	2014	3.75	NA	NA	Erosion natural deposits; Used in water treatment.

## REGULATED IN THE DISTRIBUTION SYSTEM AND CUSTOMER TAP

Contaminant (unit)	Level Detected					Level Detected		Level Detected		M C L	MCLG	Source of Contaminant
	Analyzed	Violation Yes/No		CU	HUC	Analyzed	E U D	Analyzed	S V U D			
Total Trihalomethane (TTHM) (ppb)	2016 ②	No	Average	48	48	2016	39.9	2016	3	80	NA	By-product of drinking water chlorination.
			Range	2 - 61	30 - 48	Range	15.2 - 57.3	Range	1 - 8			
Haloacetic acids (HAA5) (ppb)	2016 ②	No	Average	43	35	2016	24.4	2016	3.1	60	NA	By-product of drinking water chlorination.
			Range	1 - 46	24 - 35	Range	1.0 - 47.1	Range	ND - 12.9			
Total Coliform (mpn/100ml)	2016	No	Daily	0	(Weekly) 0	Daily 2016	0	2016	0	TT	NA	Naturally present in the environment
E.Coli (mpn/100ml)		No		0	0		0		*See Definition			
Lead (ppb)	2014 ③	No	90 <sup>th</sup> percentile	< 1.0	NR	2014	90 <sup>th</sup> % = 3.3 ^	2015	90 <sup>th</sup> % 1.3 ^	AL = 15	0	Corrosion of household plumbing systems; Erosion of natural deposits.
			Range	< 1.0 - 2.7		Range	< 1.0 - 38.0	Range	BDL - 9.3			
Copper (ppm)	2014 ③	No	90 <sup>th</sup> percentile	0.087	NR	2014	90 <sup>th</sup> % = 0.27	2015	90 <sup>th</sup> % 0.51 ^	AL = 1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
			Range	.009 - 0.14		Range	0.016 - 0.29	Range	.045 - 1.5			
Chlorine (ppm)	2016	No	Maximum Level	2.4	2.1	2016 Avg.	1.54	2016 Avg.	1.55	MRDL 4.0	MRDLG 4.0	Water additive used to control microbes.
			Range	0.3 - 2.4	1.4 - 2.1	Range	0.7 - 2.10	Range	0.9 - 1.9			
Fluoride (ppm)	2016 ②	No	Average	0.66	0.70	2016	0.73	2016	0.68	4.0	4.0	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
			Range	0.53 - 0.75	0.61 - 0.75	Range	0.66 - 0.79	Range	0 - 1.4			

## REGULATED AT THE DISTRIBUTION SYSTEM ENTRY POINT (WATER TREATMENT FACILITY) AND CUSTOMER TAP

Contaminant (unit)	Level Detected					Level Detected		Level Detected		M C L	MCLG	Source of Contaminant
	Analyzed	Violation Yes/No		CU	WAT	Analyzed	E U D	Analyzed	S V U D			
Total Chromium (ppb)	2015	No	Maximum	0.247	0.218	2015	1.3	2015	0.148	100	100	Discharge from steel and pulp mills; Erosion of natural deposits.
			Range	0.08 - 0.25	0.05 - 0.26	Range	0.278 - 1.3	Range	0.115 - 0.148			

## UNREGULATED AT THE DISTRIBUTION SYSTEM ENTRY POINT (WATER TREATMENT FACILITY) AND CUSTOMER TAP

Contaminant (unit)	Level Detected					Level Detected		Level Detected		Unregulated Contaminant Monitoring Rule 3 (UCMR3)		
	Analyzed		CU	WAT	Analyzed	E U D	Analyzed	S V U D				
Strontium (ppb)	2015	Average	29.7	26.2	2015	68.4	2015	33	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. UCMR 3 minimum reporting levels (MRLs) were established based on the capability of the analytical method, not based on a level established as "significant" or "harmful." In fact, the UCMR 3 MRLs are often below current "health reference levels" (to the extent that HRLs have been established). For additional information call the Safe Drinking Water Hotline at (800) 426-4791.			
		Range	23 - 42.3	22.4 - 35.1		Range		22 - 77.3				Range
Vanadium (ppb)	2015	Average	0.273	0.346	2015	0.221	2015	0.36				
		Range	<0.2 - 0.39	<0.2 - 0.42		Range		<0.2 - 0.31				Range
Hexavalent Chromium (ppb)	2015	Average	0.164	0.218	2015	0.076	2015	0.213				
		Range	0.08 - 0.25	0.05 - 0.26		Range		0.035 - 0.15				Range
Chlorate (ppb)	2015	Average	21.6	ND	2015	146.8	2015	114.5				
		Range	<20 - 32.9			Range		<20 - 190.4				Range
1,4 - Dioxane (ppb)	2015	Average	ND	ND	2015	0.089	2015	0.115				
		Range				Range		<0.07 - 0.103				Range

The table above indicates 'contaminants' that were detected (No Total Coliform/Ecoli Detections) in Cleveland's water supply and are required to be reported. Not indicated are additional 'contaminants' for which tests were conducted and not detected. "Contaminant" means any physical, chemical, biological, or radiological substance or matter in water including chemicals used during treatment.

① = 100% of CFP samples were  $\leq 0.3$  NTU. 100% of WAT samples were  $<0.3$  NTU. 99.86% of HUC samples were  $\leq 0.3$  NTU. 100% of EUD samples were  $\leq 0.3$  NTU. 100% of SVUD samples were below the turbidity limit. Turbidity is a measure of the cloudiness of the water. It is a good indicator of the effectiveness of the filtration system.

② = Average is the maximum quarterly value from locational running annual averages. Compliance with the MCL is based on the locational running annual average. Range is the minimum to maximum for individual samples from all locations and are not averages.

③ = Analysis must be performed again prior to the end of 2017 (3 yr cycle). 100% of the homes tested for Lead and Copper in the CU system were below the Action Level.

④ = Plants have met the TT requirements for TOC in 2016. This value is based on a running annual average.

^ = During the most recent round of Lead and Copper testing; **SVUD** = 1 of 30 households sampled contained concentrations exceeding the action level for copper. **EUD** = 1 of 30 households sampled contained concentrations exceeding the action level for lead. Please see the Special Information section of this Consumer Confidence Report for health information about lead in drinking water.

\*MCL Definition for 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.

**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 disinfectant is necessary for the control of microbial contaminants.

**MRDLG** (Maximum Residual Disinfectant Level Goal) = 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.

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

**AL** (Action Level) = The concentration of a contaminant which, when exceeded, triggers a treatment or other requirement which a water system must follow.

**ppm** = part per million, **ppb** = part per billion, **NTU** = Nephelometric Turbidity Units (Measure of Water Clarity), **MPN** = Most Probable Number, **pCi/l** = picocuries per liter, **ND** = Not Detected, **NR** = Not Required, **NA** = Not Applicable

<b>CU</b> = Cleveland Utilities (Distribution System)	<b>HUC</b> = Hiwassee Utilities Commission (Surface Water)	<b>CFP</b> = Cleveland Filtration Plant (Surface Water)
<b>WAT</b> = Waterville Springs (Ground Water)	<b>EUD</b> = Eastside Utility District (Surface Water)	<b>SVUD</b> = Savannah Valley Utility District (Ground Water)