



Town of Chesapeake City
108 Bohemia Avenue
Chesapeake City, MD 21915
2017 WATER QUALITY REPORT
PWSID: MD0070006
Report Created: June 2018



The Town of Chesapeake City is pleased to provide this Annual Water Quality Report for the period of January 1 to December 31, 2017. This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water. The source of drinking water used by the Town of Chesapeake City is purchased ground water from the Artesian Water Company. A portion of Artesian's Water Quality Report for 2017 is included, but the entire Report is available at www.artesianwater.com. If you have any questions about this report or the quality of your tap water, please call Chesapeake City Town Hall at (410) 885-5298. To find more information about our Town Meetings or a digital copy of the Water Quality Report please visit, www.chesapeakecity-md.gov.

Source of Drinking Water

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 storm water runoff, 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 storm water 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 storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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 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.

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).

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. We 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>.

Water Quality Test Results Definitions:

The following tables contain scientific terms and measures, some of which may require explanation.

Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

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.

Maximum Contaminant

Level or 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 or 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 or 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 or

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.

mrem:.....millirems per year (a measure of radiation absorbed by the body)

na: not applicable.

ppb: micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water.

ppm: milligrams per liter or parts per million - or one ounce in 7,350 gallons of water.

Treatment Technique

or TT: A required process intended to reduce the level of a contaminant in drinking water.

Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Chlorine		0.9	0.8 - 0.9	MRDLG = 4	MRDL = 4	ppm	N	Water additive used to control microbes.
Haloacetic Acids (HAA5)		1	0 - 1.06	No goal for the total	60	ppb	N	By-product of drinking water disinfection

Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future

Haloacetic Acids (HAA5)		1	0 - 1.06	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
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Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future

Haloacetic Acids (HAA5)*		1	0 - 1.06	No goal for the total	60	ppb	N	By-product of drinking water disinfection.
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Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future

Total Trihalomethanes (TTHM)		4	3.62 - 4.27	No goal for the total	80	ppb	N	By-product of drinking water disinfection
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Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Nitrate [measured as Nitrogen]	08/10/2012	0.065	0.065 - 0.065	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Artesian Water Company Water Quality Report for 2017

PUBLIC WATER SYSTEM I.D. DE0000552

In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency (EPA) prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during 2017. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and, in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

	Unit of Measure	Highest Level Allowed (MCL)	Ideal Goal (MCLG)	Highest Level Detected	Range of Level Detected	Violation?	Likely Source of Contamination
Inorganic Contaminants							
Barium	ppm	2	2 ⁷	0.233	nd – 0.233	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chromium	ppb	100	100	11.6	nd – 11.6	No	Discharge from steel and pulp mills; Erosion of natural deposits.
Fluoride	ppm	2	2 ⁷	1.90	nd – 1.90	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nickel	ppb	100	100 ⁷	7.10	nd – 7.10	No	Erosion of natural deposits.
Nitrate ¹	ppm	10	10 ⁷	7.24	nd – 7.24	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Selenium	ppb	50	50 ⁷	3.3	nd – 3.3	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

	Unit of Measure	(MCL)	MCLG	Highest Level Detected	Range of Level Detected	Violation?	Likely Source of Contamination
Synthetic Organic Contaminants including pesticides and herbicides							
Atrazine	ppb	3	3 ⁷	0.10	nd – 0.10	No	Runoff from herbicide used on row crops.
Chlorodane	ppb	2	0	0.20	nd – 0.20	No	Residue of banned termiticide.
Heptachlor Epoxide	ppb	0.2	0	0.02	nd – 0.02	No	Breakdown of heptachlor
Methyl-t-butyl Ether (MTBE)	ppb	10	0	3.20	nd – 3.20	No	Gasoline additive.

Volatile Organic Contaminants							
cis-1,2-Dichloroethylene	ppb	70	70	1.6	nd – 1.6	No	Discharge from industrial chemical factories.
Tetrachloroethylene ⁴	ppb	1	0	0.7	nd – 0.7 ⁵	No	Leaching from PVC pipes. Discharge from factories and dry cleaners. Compliance based on an annual rolling average. Station was shut down as levels increased.
Trichloroethylene ⁴	ppb	1	0	0.8	nd - 0.8 ⁵	No	Discharge from metal degreasing sites and other factories.

Radiological Contaminants							
Gross Alpha	pCi/l	15	15	7.4	nd – 7.4 ⁸	No	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation.
Radium, combined ⁴	pCi/l	5	0	4.05	nd – 6.50 ⁵	No	Erosion of natural deposits.

Disinfection/Disinfection By-Products							
Chlorine (free and total)	ppm	4(MRDL)	4(MRDLG) ⁶	2.61	nd – 2.61	No	Disinfectant used in drinking water industry.
Haloacetic Acids, total ⁴	ppb	60		39.70	nd – 76.0 ⁵	No	By-product of drinking water chlorination.
Dichloroacetic Acid	ppb	n/r		42.0	nd – 42.0	n/a	
Trichloroacetic Acid	ppb	n/r		34.0	nd – 34.0	n/a	
Trihalomethanes, total ⁴	ppb	80		50.3	18.7 – 87.6 ⁵	No	By-product of drinking water chlorination.
Bromodichloromethane	ppb	n/r		12.0	4.0 – 12.0	n/a	
Chloroform	ppb	n/r		78.0	13.0 – 78.0	n/a	
Dibromochloromethane	ppb	n/r		1.6	nd – 1.6	n/a	

	Unit of Measure	Action Level (AL)	MCLG	90th Percentile	No. of Sites Over AL	Violation?	Likely Source of Contamination
Lead & Copper³							
90th Percentile Lead	ppb	15	0	1.4	2	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
90th Percentile Copper	ppm	1.3	1.3 ⁷	0.259	0	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

Artesian Water Company Water Quality Report for 2017

PUBLIC WATER SYSTEM I.D. DE0000552

	Unit of Measure	MCL	MCLG	Average Level Detected	Range of Level Detected	Violation?	Likely Source of Contamination
Unregulated Contaminants							
Alkalinity, total	ppm	n/r		63	23 – 198	n/a	
Acetone	ppb	n/r		1.00	nd – 9.00	n/a	
Carbon dioxide, free	ppm	n/r		6.40	0.50 – 27.86	n/a	
Conductivity	umhos	n/r		391	79 – 782	n/a	
Dicamba	ppb	n/r		0.1	nd – 0.1	n/a	
1, 4 Dioxane	ppb	n/r	3.5	0.55	nd – 1.30	n/a	
Hardness, Calcium	ppm	n/r		66	18 – 227	n/a	
Hardness, Total	ppm	n/r		109	22 – 364	n/a	
Phosphate, total	ppm	n/r		1.08	0.07 – 3.07	n/a	
Turbidity ²	NTU	52	1	0.74	0.09 – 3.11	n/a	

	Unit of Measure	SMCL	Average Level Detected	Range of Level Detected	Violation?	Likely Source of Contamination
Secondary Contaminants						
Aluminum	ppm	0.05 – 0.2	0.034	nd – 0.054	n/a	
Chloride	ppm	250	52	4 – 117	n/a	
Color, Apparent	Pt-Co Std	15	1	nd – 10	n/a	
Iron	ppm	0.3	0.04	nd – 0.70	n/a	Short-term fluctuations related to iron removal treatment.
Manganese	ppm	0.05	0.013	nd – 0.032	n/a	
pH, Field	0 - 14 scale	6.5 – 8.5	7.37	5.32 – 10.05	n/a	Short-term fluctuations related to pH adjustments in the system.
Sodium	ppm	n/r	31.57	4.33 – 91.40	n/a	
Solids, total dissolved	ppm	500	203	46 – 428	n/a	
Sulfate	ppm	250	17.85	3.34 – 41.70	n/a	
Zinc	ppm	5	0.127	nd – 0.294	n/a	

NOTES FOR ALL CONTAMINANTS

- Nitrate [measured as Nitrogen] - 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 advice from your health care provider.
- This MCL applies only to surface water systems.
- Under the Lead and Copper Rule, we sample for these contaminants once every 3 years.
- Highest 4-quarter average of samples collected and used by the State Division of Public Health for compliance.
- Range includes all samples tested for, whereas highest level detected is based upon the highest 4-quarter average.
- The U.S. Environmental Protection Agency sets the MRDLG for chlorine residual at 4 parts per million (ppm). Artesian Water strives to meet a range between 0.5 ppm and 3 ppm.
- Although EPA sets the "goal" at the same level as the maximum contaminant level for these contaminants, Artesian Water strives to maintain levels lower than the MCL.
- Samples last collected in 2016 for compliance.

Definitions of Terms

90TH PERCENTILE — the 90th highest reading (out of a total of 100 samples), which is used to determine compliance with the Lead and Copper Rule.

ACTION LEVEL — 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 in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the 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.

NEPHELOMETRIC TURBIDITY UNIT (NTU) — a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

SECONDARY MAXIMUM CONTAMINANT LEVEL (SMCL) — non-enforceable guideline which is not directly related to public health, commonly associated with cosmetic or aesthetics within the water.

NON-DETECTS (ND) — laboratory analysis indicates that the constituent is not present.

NOT REGULATED (N/R) — no MCL identified because these substances are unregulated.

PARTS PER MILLION (PPM) — 1 part per million corresponds to 1 minute in 2 years or a single penny in \$10,000.

PARTS PER BILLION (PPB) — 1 part per billion corresponds to 1 minute in 2,000 years, or a single penny in \$10,000,000.

PARTS PER TRILLION (PPT) — 1 part per trillion corresponds to 1 minute in 2,000,000 years, or a single penny in \$10,000,000,000.

PICOCURIES PER LITER (PCI/L) — a measure of the radioactivity in water.