Town of Chesapeake City

108 Bohemia Avenue
Chesapeake City, MD 21915

2015 WATER QUALITY REPORT

PWSID: MD0070006

Report Created: June 2016

The Town of Chesapeake City is pleased to provide this Water Quality Report for the year 2015. Please notice that substances such as iron, chloride, and sodium are commonly found in drinking water. They occur naturally at trace levels, and the United States Environmental Protection Agency (EPA) has deemed that these substances pose no health hazard from consumption in drinking water. This report indicates the concentrations of these and many other substances obtained during analyses performed from January 1, 2015 – December 31, 2015 unless otherwise specified. 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.

A Safe Water Source

The Artesian Water Company public water system is supplied with water from 50 wells located throughout northern New Castle County. These wells are in the Columbia, Potomac, Cockeysville Marble and Mount Laurel formations. The ground water wells use the natural filtering capability of the aquifer to remove harmful bacteria and other substances from the water. These wells are located in confined aquifers that provide additional protection from surface-borne contaminants. The treatment stations use the best available technology to ensure that we are providing water that meets or exceeds all Environmental Protection Agency (EPA) and State Division of Public Health water quality parameters. Regular testing also helps us ensure high quality.

In 2015, Artesian Water Company purchased an average of 3.0 million gallons per day of surface water from the Chester Water Authority and an additional 0.04 million gallons per day from the City of Wilmington. The Chester Water Authority's supply comes from the Susquehanna River basin, while the City of Wilmington's supply comes from the Brandywine River basin. You can view the water quality report for Chester Water Authority at www.chesterwater.com/waterquality/CCR2015.pdf or the City of Wilmington's water quality report at www.wilmingtonde.gov/government/waterreports. This purchased water meets all State and Federal regulations, and is used to augment our supply.

The Source Water Assessment report can be found on the Delaware SWAPP website www.delawaresourcewater.org/assessments or contact Artesian's Water Quality Department at (302) 453-6900 to obtain a copy.

A portion of Artesian's Water Quality Report for 2015 follows, but the entire Report is available at www.artesianwater.com/WQR/AWC2015.pdf.

Artesian Water Company
Water Quality Report for 2015

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 2015. 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]	0.931	0.009 – 0.931	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chlorobenzene	ppb	100	100[7]	1.65	nd – 1.65	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	ppm	2	2[7]	1.60	nd – 1.60	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nickel	ppb	100	100[7]	8.4	2.6 – 8.4	No	Erosion of natural deposits.
Nitrate[1]	ppm	10	10[7]	6.79	nd – 6.79	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Selenium	ppb	50	50[7]	5.5	nd – 5.5	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Synthetic Organic Contaminants including pesticides and herbicides							
Atrazine	ppb	3	3[7]	0.129	nd – 0.129	No	Runoff from herbicide used on row crops.
Methyl-t-butyl Ether (MTBE)	ppb	10	0	1.70	nd –1.70	No	Gasoline additive.
Tetrachloroethylene	ppb	1	0	0.77	nd – 0.77	No	Leaching from PVC pipes. Discharge from factories and dry cleaners.
Xylenes	ppb	10000	10000[7]	0.51	nd – 0.51	No	Discharge from petroleum factories; discharge from chemical factories.
Radiological Contaminants							
Radium, combined[4]	pCi/l	5	0	4.7	0.6 – 12.6[5]	No	Erosion of natural deposits.
Disinfection/Disinfection By-Products							
Chlorine (free and total)	ppm	4(MRDL)	4(MRDLG)[6]	2.68	nd – 2.68	No	Disinfectant used in drinking water industry.
Haloacetic Acids, total[4]	ppb	60		46.99	nd – 66.90[5]	No	By-product of drinking water chlorination.
Monochloroacetic Acid	ppb	n/r		2.78	nd – 2.78	n/a	
Dibromoacetic Acid	ppb	n/r		1.97	nd – 1.97	n/a	
Dichloroacetic Acid	ppb	n/r		35.80	nd – 35.80	n/a	
Trichloroacetic Acid	ppb	n/r		32.20	nd – 32.20	n/a	
Trihalomethanes, total[4]	ppb	80		45.16	21.50 – 61.13[5]	No	By-product of drinking water chlorination.
Bromodichloromethane	ppb	n/r		15.40	3.91 – 15.40	n/a	
Chloroform	ppb	n/r		15.40	3.91 – 15.40	n/a	
Dibromochloromethane	ppb	n/r		3.90	nd – 3.90	n/a	

	Unit of Measure	Action Level (AL)	Ideal Goal (MCLG)	90th Percentile	No. of Sites Over AL	Violation?	Likely Source of Contamination
Lead & Copper[3]							
90th Percentile Lead	ppb	15	0	<2[8]	0	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
90th Percentile Copper	ppm	1.3	1.3[7]	0.245[8]	0	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.

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Unregulated Contaminants	Unit of Measure	Highest Level Allowed (MCL)	Average Level Detected	Range of Level Detected	Violation?
Alkalinity, total	ppm	n/r	58	0 – 226	n/a
Bis (2-chloroethyl) ether (BCEE)	ppb	n/r	0.004	nd – 0.032	n/a
Bis (2-ethylhexyl) adipate	ppb	n/r	0.035	nd – 0.59	n/a
Carbon dioxide, free	ppm	n/r	8.7	0.2 – 42.5	n/a
Conductivity	umhos	n/r	287	53 – 596	n/a
Dieldrin	ppb	n/r	0.09	nd – 0.11	n/a
Di-N-Butylphthalate	ppb	n/r	0.031	nd – 0.53	n/a
1, 4 Dioxane	ppb	n/r	0.015	nd – 0.14	n/a
Hardness, Calcium	ppm	n/r	64	15 – 228	n/a
Hardness, Total	ppm	n/r	103.1	23 – 370	n/a
Phosphate, total	ppm	n/r	0.94	0.18 – 2.76	n/a
Sodium	ppm	n/r	27.33	3.77 – 56.00	n/a
Turbidity[2]	NTU	5[2]	0.43	0.08 – 1.73	n/a

NOTES FOR ALL CONTAMINANTS

1. 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.
2. This MCL applies only to surface water systems.
3. Under the Lead and Copper Rule, we sample for these contaminants once every 3 years.
4. Highest 4-quarter average of samples collected and used by the State Division of Public Health for compliance.
5. Range includes all samples tested for, whereas highest level detected is based upon the highest 4-quarter average.
6. 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.
7. 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.
8. Samples last collected in 2014 for compliance.

E. coli - Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

Secondary Contaminants	Unit of Measure	SMCL	Average Level Detected	Range of Level Detected	Violation?	Likely Source of Contamination
Aluminum	ppm	0.05 – 0.2	0.035	nd – 0.044	n/a	
Chloride	ppm	250	53	4 – 107	n/a	
Color, Apparent	Pt-Co Std	15	10	nd - 10	n/a	
Iron	ppm	0.3	0.11	nd – 0.88	n/a	Short-term fluctuations related to iron removal treatment.
Manganese	ppm	0.05	0.017	nd – 0.041	n/a	
pH, Field	0 - 14 scale	6.5 – 8.5	7.33	5.53 – 9.34	n/a	Short-term fluctuations related to pH adjustments in the system.
Solids, total dissolved	ppm	500	191	38 – 447	n/a	
Sulfate	ppm	250	19.57	2.23 – 42.80	n/a	
Zinc	ppm	5	0.08	nd – 0.23	n/a	

	Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positive	Fecal Coliform or E. Coli Maximum Contaminant Level	Total No. of Positive E. Coli or Fecal Coliform Samples	Violation?	Likely Source of Contamination
Microbiological Contaminants Total Coliform	0	No more than 5% per month	3.5	A routine sample and a repeat sample were total coliform positive and one was also fecal coliform or E. coli positive	1	No	Naturally present in the environment.

Violation	Violation Begin	Violation End	Violation Explanation
CCR Report Submission	07/01/2015	07/02/2015	Last year, we incurred a violation because we failed to provide the Delaware Office of Drinking Water the annual CCR by the July 1st deadline. The report was submitted one day late on July 2nd. The violation was resolved on that day.

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.

Expected Substances In Drinking Water

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 (1-800-426-4791).

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 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 stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts 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 prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

If You Have A Special Health Concern

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 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 In Drinking Water

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. Artesian 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 *www.epa.gov/safewater/lead*.

Radon, Cryptosporidium & Giardia

Radon is a radioactive gas that is found in nearly all soils. It typically moves up through the ground to the air and into homes through the foundation. Drinking water from a ground water source can also add radon to the home air. The EPA indicates that, compared to radon entering the home through soil, radon entering the home through water will in most cases be a small source of risk. The EPA and the State of Delaware have not yet set standards for monitoring radon in drinking water, although we do expect sampling to become mandatory in the near future. Artesian Water Company is keeping a close eye on the situation and will be sure to comply with any new regulations as required.

Cryptosporidium and Giardia parasites have been known to contaminate drinking water reservoirs of surface water treatment plants. Water purchased by Artesian from the Chester Water Authority and the City of Wilmington are surface water supplies. Both have tested for these parasites and have found no problems in their treated water product.

Monitoring Waivers

The Artesian Water Company public water system currently has a waiver for asbestos monitoring due to non-detectable results from 1995 sampling. The State of Delaware's Office of Drinking Water will be conducting new sampling to determine whether this waiver will be continued.

Artesian Water Service Facts

Population Served	**approximately 301,000**
Metered Customers	**83,700**
Annual Production	**7.6 billion gallons**
Miles of Main	**1,218**
Public Fire Protection Hydrants	**5,942**
Active Wells	**191**
Storage Capacity	**174 million gallons**
Water Service Territory	**282 square miles**
Average cost per day for residential water service	**$1.72**

If you have any questions about the contents of this report, please call Artesian at ***(302) 453-6930****, toll free at* ***1 (800) 332-5114*** *or email at* ***custserv@artesianwater.com.*** *Our Customer Service Representatives and Water Quality Department are ready to assist you. More information about Artesian is available at our website:* ***www.artesianwater.com****.*

Landlords, apartment managers, businesses, schools, etc. should share this information with others who might not receive this information directly. Consider posting the information in a public place or advise others that the report is available by contacting Artesian by phone or online at ***www.artesianwater.com****.*

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