

Avon Water Department

Public Water System Identification Number 1305001

Drinking Water Quality Report

For the Year 2018

We are pleased to present to you the 2018 Annual Drinking Water Quality Report for the Borough of Avon. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the steps we take to continually improve and monitor the water treatment process and protect our water resources.

Avon's water source is from 3 wells located west of Main St., two on Woodland Ave. and one on Stanton Place. Two of the wells, #1 & #2, draw water from the Mount Laurel Winonah aquifer. The third, #4, draws water from the Old Bridge aquifer. Well # 3 was sealed several years ago. The # 4 well was constructed to replace the # 3 well. These wells are used approximately 6 months of the year, from May through Oct. The remaining months of the year Avon purchases water from N.J. American Water Co. The water that Avon purchases, from N.J. American, comes from ground water from the Potomac-Raritan-Magothy Aquifer and surface water from the Glendora Reservoir, Jumping Brook, the Manasquan River, the Shark River, and the Swimming River Reservoir.

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for Avon's water system, which is available at www.state.nj.us/dep/swap/ or by contacting the NJDEP, Bureau of Safe Drinking Water at 609-292-5550. The following is a summary of what the source water assessment determined for Avon's system.

Avon By The Sea Water Department- PWSID # 1305001

Avon By The Sea Water Department is a public community water system consisting of 3 wells, 0 wells under the influence of surface water, 0 surface water intakes, 0 purchased ground water sources, and 1 purchased surface water source. This system's source water comes from the following aquifers: Mount Laurel-Wenonah aquifer, upper Potomac-Raritan-Magothy aquifer. This system purchases water from the following water system: NJAWC-MON SYS

Susceptibility Ratings for Avon By The Sea Water Department Sources

The table below illustrates the susceptibility ratings for the seven contaminant categories (and radon) for each source in the system. The table provides the number of wells and intakes that rated high (H), medium (M), or low (L) for each contaminant category. For susceptibility ratings of purchased water, refer to the specific water system's source water assessment report; New Jersey American Water Co.- Mon. Sys. PWSID # 1345001, which is available at www.state.nj.us/dep/swap/ or by contacting the NJDEP, Bureau of Safe Drinking Water at 609-292-5550. The seven contaminant categories are defined at the bottom of this page. DEP considered all surface water highly susceptible to pathogens, therefore all intakes received a high rating for the pathogen category. For the purpose of Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. As a result, surface water intakes' susceptibility to radionuclides was not determined and they all received a low rating.

If a system is rated highly susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, DEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radio-nuclides			Radon			Disinfection Byproduct Precursors			
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	
Wells -3			3			3			3			3		1	2		1	2		2	1			3	
GUDI -0																									
Surface water intakes - 0																									

Pathogens: Disease-causing organisms such as bacteria and viruses. Common sources are animal and human fecal wastes.

Nutrients: Compounds, minerals and elements that aid growth, that are both naturally occurring and man-made. Examples include nitrogen and phosphorus.

Volatile Organic Compounds: Man-made chemicals used as solvents, degreasers, and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE), and vinyl chloride.

Pesticides: Man-made chemicals used to control pests, weeds and fungus. Common sources include land application and manufacturing centers of pesticides. Examples include herbicides such as atrazine, and insecticides such as chlordane.

Inorganics: Mineral-based compounds that are both naturally occurring and man-made. Examples include arsenic, asbestos, copper, lead, and nitrate.

Radionuclides: Radioactive substances that are both naturally occurring and man-made. Examples include radium and uranium.

Radon: Colorless, odorless, cancer-causing gas that occurs naturally in the environment. For more information go to <http://www.nj.gov/dep/rpp/radon/index.htm> or call (800) 648-0394.

Disinfection Byproduct Precursors: A common source is naturally occurring organic matter in surface water. Disinfection byproducts are formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

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 Karl Klug, Water/Sewer Superintendent, at 732-502-4506. We want our valued customers to be informed about their water utility. Avon's Borough meetings are held at Borough Hall 301 Main Street. Meetings are on the second and fourth Mondays of each month at 7:00 p.m.

The Avon Water Department routinely tests for contaminants in your drinking water according to Federal and State laws. The following tables show the results of Avon's and N.J. American Water Co.'s monitoring for the period of January 1st to December 31st, 2018. 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, though representative, are more than one year old. There is a separate table that lists the results of N.J. American Water Co. All of the water samples collected are tested by state certified laboratories.

As you will see by the tables our system had no violations. We're proud that your drinking water meets all Federal and State safe drinking water requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

DEFINITIONS

In the following table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Action Level - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is 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 -The "Goal"(MCLG) is 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.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ND = Not detected

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 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 contamination.

Recommended upper limit (rul)

As you will notice in the following tables, there are some differences, between Avon's and N.J. American's.

Lead and copper samples are collected, according to federal and state regulations, from individual homes, because the likely source of these contaminants is corrosion of household plumbing systems, and erosion of natural deposits. Both tables list results from lead and copper sampling. Because of regulations, lead and copper sampling must be conducted during the summer months. Since Avon uses its own water supply during the summer, the results in NJ American's table for lead and copper are not representative of homes in Avon. The results for lead and copper in Avon's table are from samples collected in Avon. Other water tests, required monthly, quarterly are sampled from homes, businesses in Avon, year-round. N.J. American's tables list some additional substances that Avon's does not. This is because there is no need for the Avon Water Dept. to test for these substances, according to federal and state regulations.

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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

AVON WATER DEPT. TEST RESULTS

Contaminant	Units of Measure -ment	Level Detected	Highest level Detected	MCL	MCL G	Likely sources of Contamination
Radioactive Contaminants						
Alpha emitters (2015)	Pci/L	< 3	< 3	15	0	Erosion of natural deposits
Combined Radium 226 and 228 (2015)	Pci/L	1.5	1.5	5	0	Erosion of natural deposits
Radium 228 (2015)	Pci/L	< 1	< 1	5	0	Erosion of natural deposits
Inorganic Contaminants:						
Lead ¹ (2017)	Ppb	90 th percentile = ND	7	AL=15	0	Corrosion of household plumbing systems, erosion of natural deposits
Copper (2017)	Ppm	90 th percentile =0.2	0.2	AL=1.3	1.3	Corrosion of household plumbing systems, erosion of natural deposits
Treatment By-Products Stage-2						
Total Trihalomethanes (TTHMs)	Ppb	2.38 to 113 ³	AVG.= 62.6 ²	80	NA	By-Product of drinking water disinfection.
Total Haloacetic Acids (THAAs)	Ppb	2.39 to 41	AVG = 19.7 ²	60	NA	By-Product of drinking water disinfection.
Disinfectants						
Chlorine (Jan-Sept.) Chloramines(Oct-Dec)	ppm	0.1 to 0.9	AVG.= .38	MRDL= 4	MRDL G=4	Water additive used to control microbes

Footnotes

¹ 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 Avon Water Department 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 is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

² This number represents the highest locational running annual average (LRAA) calculated from the data collected during 2018.

³ In 2018, two TTHM samples exceeded the MCL of 80 PPb . This was not a violation, as compliance is based on the locational running annual average (LRAA) which was below the MCL. *Some people who drink 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.*

ADDITIONAL INFORMATION

The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals and synthetic organic chemicals. Avon's system received monitoring waivers for asbestos and synthetic organic chemical contaminants.

N.J. AMERICAN WATER CO. TEST RESULTS

Regulated Substances¹

Contaminant	Units	Range Detected	Highest Level Detected	MCL	MCL G	Likely Source of Contamination
Inorganic Chemicals						
Total Coliform	cfu	NA	0.05% ⁸	Coliform detected no more than 5% of monthly samples	0	Naturally present in environment
Fluoride ²	ppm	ND to 0.87	0.87	2	2	Erosion of natural deposits; water additive which promotes strong teeth
Chromium	ppb	ND to 0.1.4	1.4 ⁷	100	100	Discharge from steel and pulp mills; Erosion of natural deposits
Nitrate	ppm	0.09 to 0.36	0.36	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Lead	Ppb	90 th percentile = 5	Homes above action level=2	AL=15	0	Corrosion of household plumbing systems, erosion of natural deposits
Copper	Ppm	90 th percentile = 0.132	Homes above action level = none	AL=1.3	1.3	Corrosion of household plumbing systems, erosion of natural deposits
Treatment Byproducts Stage 2						
Total Trihalomethanes (TTHMs) Site DBP2-1	Ppb	44.5 to 77.5	62.65 ³	80	NA	By-Product of drinking water disinfection.
Total Trihalomethanes (TTHMs) Site DBP2-2	Ppb	43 to 73.1	59.20 ³	80	NA	By-Product of drinking water disinfection.
Total Trihalomethanes (TTHMs) Site DBP2-3	Ppb	35.4 to 110	77.78 ³	80	NA	By-Product of drinking water disinfection.
Total Trihalomethanes (TTHMs) Site DBP2-4	Ppb	38.0 to 100	73.58 ³	80	NA	By-Product of drinking water disinfection.
Total Trihalomethanes (TTHMs) Site DBP2-6	Ppb	35.4 to 86.5	57.03 ³	80	NA	By-Product of drinking water disinfection.
Total Trihalomethanes (TTHMs) SiteDBP2-7	Ppb	39.7 to 81.8	60.65 ³	80	NA	By-Product of drinking water disinfection.
Total Trihalomethanes (TTHMs) Site DBP2-9	Ppb	36.4 to 99.0	70.00 ³	80	NA	By-Product of drinking water disinfection.
Total Trihalomethanes (TTHMs)SiteDBP2-11	Ppb	41.9 to 71.0	59.18 ³	80	NA	By-Product of drinking water disinfection.
Total Trihalomethanes TTHMs)Site DBP2-12	Ppb	41.4 to 74.7	59.80 ³	80	NA	By-Product of drinking water disinfection.
Total Haloacetic Acids (THAA5)Site DBP2-1	Ppb	11.0 to 75.0	29.23 ³	60	NA	By-Product of drinking water disinfection.
Total Haloacetic Acids (THAA5) Site DBP2-2	Ppb	9.0 to 61.0	25.28 ³	60	NA	By-Product of drinking water disinfection.
Total Haloacetic Acids (THAA5) Site DBP2-3	Ppb	9.7 to 18.6	14.35 ³	60	NA	By-Product of drinking water disinfection.
Total Haloacetic Acids (THAA5) Site DBP2-4	Ppb	11.5 to 26.7	17.70 ³	60	NA	By-Product of drinking water disinfection.
Total Haloacetic Acids (THAA5) Site DBP2-6	Ppb	10.0 to 48.9	21.40 ³	60	NA	By-Product of drinking water disinfection.

Total Haloacetic Acids (THAA5) Site DBP2-7	Ppb	6.0 to 58.8	23.25 ³	60	NA	By-Product of drinking water disinfection
Total Haloacetic Acids (THAA5) Site DBP2-9	Ppb	11.4 to 19.2	15.75 ³	60	NA	By-Product of drinking water disinfection.
Total Haloacetic Acids THAA5 Site DBP2-11	Ppb	9.0 to 58.2	25.73 ³	60	NA	By-Product of drinking water disinfection.
Total Haloacetic Acids THAA5 Site DBP2-12	Ppb	8.9 to 58.8	24.00 ³	60	NA	By-Product of drinking water disinfection.
Turbidity						
Turbidity ⁶	ntu	0.01 to 0.27	0.27 ³	TT	NA	Soil runoff
Treatment Byproducts Precursor Removal						
Total Organic Carbon	Ppm	0.72 to 2.84	2.84	TT	NA	Naturally present in the environment
Disinfectants						
Chloramines	Ppm	0.06 to 2.75	1.37 ⁴	60	NA	Water additive used to control microbes

Secondary Contaminants

Contaminant	Units	RUL	Amount Detected
Sodium ⁵	ppm	50	27.6 to 62.7 ⁷
Hardness	ppm	250	92 to 100 ⁷
Aluminum	ppm	0.05	ND to 0.01 ⁷

Our Water Research Efforts

Cryptosporidium is a protozoan found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, people with severely weakened immune systems have a risk of developing a life threatening illness. We encourage such people to consult their doctors regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease. It can also be spread through means other than drinking water. For additional information regarding cryptosporidiosis and how it may impact those with weakened immune systems, please contact your personal health care provider

The U.S. EPA issued a rule in January 2006 that requires systems with higher *Cryptosporidium* levels in their source water to provide additional treatment. To comply with this rule, New Jersey American Water once again began conducting 24 consecutive months of monitoring for *Cryptosporidium* in our raw water sources starting in 2015. The monitoring to date indicates the presence of these organisms in the source water. The samples were collected from the source before the water was processed through our treatment plants. We continued monitoring until April 2017. The data collected is presented in the Source Water Monitoring table below.

Source Water Monitoring

Contaminant	Swimming River source water	Jumping Brook source water	Oak Glen source water
Cryptosporidium	ND - 0.100	ND	ND
Giardia, Cysts/L	0 - 0.558	0 - 0.089	0 - 0.558

Microbial pathogens found in surface water throughout The United States

Unregulated Contaminant Monitoring

Contaminant	Units	NJDEP Compliance Level	Range Detected	Highest Level Detected	Use or Environmental Source
Chlorate	ppb	NA	ND to 760	760	Agricultural defoliant or desiccant; disinfection byproduct; and used in the production of chlorine dioxide.
Hexavalent Chromium	ppb	NA	ND to 0.53	0.53	Major sources of hexavalent chromium (chromium6) in drinking water are discharges from steel and pulp mills, and erosion of natural deposits of chromium-3. Hexavalent chromium is not currently regulated as an individual substance. NJ American Water voluntarily performed this monitoring based on recommendations from USEPA. For more information Hexavalent Chromium (Chromium-6) please visit our website.
Strontium	ppb	NA	37.6 to 508.5	508.5	Naturally occurring element; commercial use of strontium has been in the faceplate of glass cathode ray tube televisions to block x-ray emissions.
1,4-Dioxane	ppb	NA	ND to 0.50	0.50	Used as a solvent in manufacturing and processing paper, cotton, textile products, automotive coolant, cosmetics and shampoos.

Unregulated Contaminant Monitoring Rule

New Jersey American Water participated in the Unregulated Contaminant Monitoring Rule. Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted. For testing conducted in the Coastal North System, the following substances were found.

Contaminant	Units	MRL	Highest Level Detected	Range Detected	Use or Environmental Source
Manganese	ppb	0.4	9.7	ND to 9.7	Naturally present in environment; used in steel production, fertilizer, batteries and fireworks; drinking water and wastewater treatment chemical
Brominated Haloacetic Acid (HAAQ) Group – List AM 2					
HAA6Br Group					By-product of drinking water disinfection
Bromochloroacetic Acid	Ppb	N/A	2.6	0.68 to 2.6	
Bromodichloroacetic Acid	Ppb	N/A	1.7	ND to 1.7	
Dibromoacetic Acid	Ppb	N/A	0.85	ND to 0.85	
Monobromoacetic Acid	Ppb	N/A	0.52	ND to 0.52	
Tribromoacetic Acid	Ppb	N/A	ND	ND	
Chlorodibromoacetic Acid	Ppb	N/A	2.5	ND to 2.5	
HAA9 Group					By-product of drinking water disinfection
Bromochloroacetic Acid	Ppb	N/A	2.6	0.68 to 2.6	
Bromodichloroacetic Acid	Ppb	N/A	1.7	ND to 1.7	
Dibromoacetic Acid	Ppb	N/A	0.85	ND to 0.85	
Monobromoacetic Acid	Ppb	N/A	0.52	ND to 0.52	
Tribromoacetic Acid	Ppb	N/A	ND	ND	
Chlorodibromoacetic Acid	Ppb	N/A	2.5	ND to 2.5	
Dichloroacetic Acid	Ppb	N/A	8.8	2.9 to 8.8	
Monochloroacetic Acid	Ppb	N/A	ND	ND	
Trichloroacetic Acid	Ppb	N/A	6.2	2.6 to 6.2	

Footnotes

- ¹ Under a waiver granted by the State of New Jersey Department of Environmental Protection, our system does not have to monitor for synthetic organic chemicals/pesticides because several years of testing have indicated that these substances do not occur in our source water. The SDWA regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for volatile organic chemicals and synthetic organic chemicals. Our system received monitoring waivers for synthetic organic chemicals.
- ² Fluoride is added to the water (Shrewsbury and Ocean County areas of Coastal North System).
- ³ This level represents the highest annual quarterly Locational Running Average calculated from the data collected.
- ⁴ This level represents the highest annual quarterly Average calculated from the data collected.
- ⁵ For healthy individuals, the sodium intake from water is not important, because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the recommended upper limit may be of concern to individuals on sodium restricted diet.
- ⁶ Turbidity is a measure of the cloudiness of the water. 100% of the turbidity readings were below the treatment technique requirement of 0.3 ntu. We monitor it because it is a good indicator of the effectiveness of our filtration system.
- ⁷ The state of New Jersey allows us to monitor for some substances less than once per year. Some of our data, though representative, is more than one year old.
- ⁸ Maximum percentage of positive samples collected in any one month.

Avon purchases only treated water from N.J. American Water Co.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances, which may be found in wells, lakes, reservoirs and other untreated sources, may 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 or gas production, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agricultural, 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 much provide the same protection for public health.

All 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 the 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 at 1-800-426-4791.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Please call the Avon Water Dept. Office at 732-502-4506 if you have questions.