

Avon Lake 2018 WATER QUALITY REPORT

For the 2017 calendar year

The Board of Municipal Utilities

The Avon Lake Board of Municipal Utilities (the Board) is an independent board composed of five members elected by the citizens of Avon Lake to serve four-year terms. The Board establishes policy and oversees Avon Lake Regional Water's operations. These private citizens, fellow Avon Lakers, represent you in determining the future of the utility. The Board functions independently of Avon Lake City Council, but cooperates with the Council and the City on major projects.

Here are the individuals that served on the Avon Lake Board of Municipal Utilities in 2017:

John Dzwonczyk (Chair),
Randy Phillips, **David Rickey**,
Tim Rush, and **Dana Schnabel**

The Avon Lake Board of Municipal Utilities meets twice a month, the first and third Tuesdays, at 6:30 p.m. at 201 Miller Road, Avon Lake, Ohio 44012. Meetings are open to the public.



**Avon Lake
Regional Water**

Serving the region,
protecting our resource.



A message from the Chairman of the Board of Municipal Utilities: Protecting Public Health, 24/7, 365 Days a Year

When you ponder critical public health and safety roles in the community, police, fire, and EMS come to mind first. However, did you know that your water and wastewater utility also provides a critical public health and safety role in the community? Without water, firefighting, surgeries, and cleanliness would be much more difficult, and you would not be able to make coffee!

We at Avon Lake Regional Water work every day to serve the region by providing quality water services and protecting Lake Erie, where our water supply comes from. Our crews work 24/7, 365 days a year; rain, shine, or snow, to ensure you have seamless water and wastewater services. Also, our team stands ready to respond to emergencies, such as a water main break or basement backup.

Our team takes great pride in providing you, our customers, with these critical public health and safety services.

Thank you for your continued support while you enjoy the water!

Sincerely,
John Dzwonczyk,
*Chairman of the Avon Lake
Board of Municipal Utilities*

This report provides the water quality statistics for 2017.

The articles throughout the report show how Avon Lake Regional Water focused on keeping your water safe and planning for the future.

Be a part of the 2019 report.
Submit your photos of Lake Erie to contact@avonlakewater.org.

The Year in Review

Continuing Critical Infrastructure Upgrades

In 2017, Avon Lake Regional Water continued making critical infrastructure improvements. These improvements in Avon Lake are made possible through your water and wastewater rates as well as utilization of the Ohio EPA Revolving Loan Fund. Using the fund, Avon Lake Regional Water was able to save the following:

- For The 45 Area Combined Sewer Separation Project, \$3.5 million of the loan was at a 0% interest rate, providing over \$1.2 million in savings to our customers (\$750,000 in wastewater rates and \$500,000 in City of Avon Lake taxes).
- For the Fairfield-Brookfield Area Combined Sewer Separation Project, \$9.5 million of the loan was at 0% interest rate, saving over \$1.8 million in wastewater rates and \$1.1 million in City taxes.

Avon Lake Regional Water will continue utilizing the Ohio EPA Revolving Loan Fund for future projects.

Project	Status
Combined Sewer Separation	
Fairfield-Brookfield Combined Sewer Separation Project	Substantially Completed in November 2017
The 45 Area Combined Sewer Separation Project	Started in October 2017
Water Filtration Plant (WFP)	
Wash water recycling	Completed in April 2017
Implementation of Corrosion Control Effort	Completed in September 2017
Three million gallon water tower	Completed in December 2017
Water Reclamation Facility (WRF)	
New laboratory	Completed in April 2017
New ultraviolet disinfection units	Completed in April 2017
New clarifier	Completed in June 2017
New final settling tank	Completed in July 2017
New office building	Completed in September 2017
New power generation system	Completed in October 2017
Infrastructure Upgrades in Project Areas and Around Avon Lake	
Repaired 20 water line breaks	Completed in 2017
Replaced 31 fire hydrants	Completed in 2017
Replaced 9,622 feet of water line	Completed in 2017
Replaced 12,477 feet of sanitary sewer line	Completed in 2017



Innovating to Help Our Customers – Lateral Loan Program

Hearing concerns from Avon Lake residents regarding the cost of lateral separation projects, Avon Lake Regional Water sought a way to provide financial assistance for those needing lateral separations on their properties. Avon Lake Regional Water worked with the Ohio EPA to develop a funding program for lateral separation assistance called the Lateral Loan Program. The Lateral Loan Program is a 10-year, 2%-interest loan (\$4,000 maximum) to assist those that need to complete a lateral separation project.

During 2017, the program took off and over 230 homeowners executed lateral loans and Avon Lake Regional Water committed over \$824,000.

What is unique about the program is its design. Ohio EPA provided a \$5 million capitalization loan to Avon Lake Regional Water through the Water Pollution Control Loan Fund (WPCLF) program. Then, Avon Lake Regional Water loans up to \$4,000 at a 2% interest rate to residents for the lateral separation to be paid via the homeowner's quarterly bill. As the homeowners pay back the loan, Avon Lake Regional Water repays the Ohio EPA. In essence, Avon Lake Regional Water created its own revolving funding program, the first of its kind in the State of Ohio.

For more information on the program, please call us at (440) 933-6226.

Community Outreach

As a member of the Avon Lake Community, we strive to not only give back to the community, but to educate on protecting Lake Erie. In 2017, Avon Lake Regional Water was out and about in Avon Lake. When you see us out in the community, make sure to stop by and say "Hello."



Did you see the new ADA approved water fountain and bottle filling station at Eastview Elementary's new playground?



Photo by Wendy Hansborough

Hopefully you enjoyed a glass of water at the 2017 WineFest.



Did you get a chance to sit in the driver's seat of one of our vehicles at Big Trucks?

In October 2017, our two plants hosted students from LCCC to learn about our daily water testing and treatment facilities.



If your organization is interested in borrowing our 5 gallon water coolers for an event, please call us at (440) 933-6226.

Corrosion Control Effort

In September 2017, Avon Lake Regional Water began adding phosphate to the water as part of its corrosion control effort. Across the State of Ohio, water treatment facilities implement corrosion control efforts to prevent corrosion of their water pipes. The most common approach is to add phosphate to the water to coat the inside of the pipes to prevent corrosion. The phosphate reacts with the pipes to form an insoluble coating to protect the pipes. The amount of phosphate that was added and will continue to be added to the water is a minimal amount that will not impact the quality or taste of the water, and is well within guidelines approved by the Ohio EPA.

For those who might be concerned, during the initial application, the amount of phosphorus in one cup of water was about 0.10 mg; and, in the long-term, there will be about 0.05 mg of phosphorus in a cup of water. For comparison purposes, a cup of Skim Milk has about 250 mg of phosphorus.

Prior to adding phosphate to the water, you may have seen Avon Lake Regional Water flushing the water lines around Avon Lake. Flushing the water lines prior to adding the phosphate helped prep them for coating.



Please feel free to call Avon Lake Regional Water at (440) 933-6226 if you have any questions.

Learning from Nature: Using Biomimicry to Predict Algal Blooms

Each summer, the threat of algal blooms impacting Avon Lake's shores rises. Algal blooms are overgrowths of algae that occur naturally and are made worse by increased nutrients in the water, like nitrogen and phosphorus. However, you can rest assured that Avon Lake Regional Water closely monitors this threat by watching weather patterns and continually testing water drawn into the treatment plant from Lake Erie.

As a progressive utility, Avon Lake Regional Water believes in proactive versus reactive approaches to algal bloom. One of these proactive ways is by partnering with Great Lakes Biomimicry and the University of Akron to sponsor two University of Akron Ph.D. fellows studying

biomimicry. "Biomimicry is the practice of learning from nature and emulating its forms, processes, and systems to solve human problems and drive innovation."

The partnership began in 2015 as a five-year engagement for the candidates to focus on predicting algal blooms. If we are able to predict when one will occur, Avon Lake Regional Water will be able to implement (at the appropriate time) measures to prevent its impact to our water supply, both better protecting public health and saving money.



¹ U.S. EPA, Harmful Algal Blooms, <http://epa.gov/nutrientpollution/harmful-algal-blooms>
² Great Lakes Biomimicry, What is Biomimicry?, <https://glbiomimicry.org/About>

What Are Drinking Water Standards?

Avon Lake Regional Water treats water to meet EPA drinking water quality standards. Implementing measures to protect Lake Erie can further decrease the potential for water quality impacts. More detailed information is provided in the Drinking Water Source Assessment report, which can be obtained by calling Greg Yuronich at (440) 933-3229.

Sources of drinking water – for 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 human activity.

Contaminants in source water come from various places: microbial contaminants such as viruses and bacteria may originate in sewage plants, septic systems, livestock operations and wildlife; salts, metals and other inorganic substances can occur naturally or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming; pesticides and herbicides enter the stream from agriculture, urban storm water runoff, and general residential use; while organic chemical contaminants are often by-products of industrial and petroleum production, they are also linked to gas stations, urban storm water runoff and septic systems; and finally, radioactive contaminants can occur naturally or via oil and gas production or 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 at (800) 426-4791.



Maintaining the Second Lowest Water Rates in the State of Ohio

Each year, the Ohio EPA collects sewer and water rates from municipalities across the state and compiles it into an annual survey. For the latest survey, *The 2016 Ohio EPA Sewer and Water Rate Survey*, the Ohio EPA gathered water rate data from about 430 municipalities. Of those municipalities, Avon Lake Regional Water had the second lowest water rates, with an average annual residential water bill of \$165 (based on usage of 7,756 gallons/month). The average Ohio residential water bill was \$628.

If you are interested in reading the entire 2016 Ohio EPA Sewer and Water Rate Survey, contact the Ohio EPA, Office of Fiscal Administration, Economic Analysis Unit at (614) 644-3760 or economic.analysis@epa.ohio.gov.

Where Does Your Water Come From?

Our water filtration plant draws its water from Lake Erie. There are two separate intakes to ensure our ability to pump from this virtually endless source of quality raw water. The raw water is then treated with alum to aid in the removal of turbidity (dirt), and activated carbon is added to remove organics to improve taste and odor. Next, this treated water goes through flocculation, sedimentation, and

filtration to remove turbidity and other contaminants. The water is then treated with chlorine for disinfection and fluoride for dental health prior to being pumped to your home. The Avon Lake water filtration plant is staffed around the clock with approximately 150 tests run on the drinking water every day and over 50,000 each year.



Avon Lake Table of Detected Contaminants in 2017

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation?	Year Sampled	Typical Source of Contaminants
Microbiological Contaminants							
Turbidity (NTU) ¹	n/a	TT	0.25	0.03-0.25	No	2017	Soil runoff
Turbidity (% samples meeting standard)	n/a	TT	100%	100%	No	2017	
Total Organic Carbon	n/a	TT	1.11	1.11-1.72	No	2017	Naturally present in the environment
Inorganic Contaminants							
Barium (ppm) ³	2	2	0.029	0.029	No	2017	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Copper (ppm)	1.3	AL=1.3	0.05	n/a	No	2016	Corrosion of household plumbing
90 th percent sample result							
Zero out of thirty samples was found to have copper levels in excess of the copper action level of 1.3 ppm.							
Lead (ppb)	0	AL=15	<3.0	n/a	No	2016	Corrosion of household plumbing
90 th percent sample result							
Zero out of thirty samples was found to have lead levels in excess of the lead action level of 15 ppb.							
Fluoride (ppm)	4	4	1.02	0.14-1.31	No	2017	Water additive which promotes strong teeth
Nitrate (ppm)	10	10	1.02	0.11-1.02	No	2017	Natural deposits, fertilizers, sewage
Volatile Organic Contaminants³							
Haloacetic Acids (ppb) ⁴	n/a	60	18.3	10.8-18.5	No	2016-17	By-product of drinking water disinfection
Total Trihalomethanes (ppb) ⁴	n/a	80	35.5	23.5-44.1	No	2016-17	By-product of drinking water disinfection
Residual Disinfectants							
Chlorine (ppm) ³	4	4	1.30	1.1-1.3	No	2016-17	Water additive to control microbes
Radiological Contaminants (Alpha & Beta)							
Gross Alpha (pCi/l) ⁵	0	15	7.94	n/a	No	2015	Erosion of natural deposits



Definitions

- AL (Action level) – The concentration of a contaminant that, if exceeded, triggers a treatment or other requirement that a water system must follow.
- Contaminant – Any physical, chemical, biological, or radiological substance or matter in water.
- MCL (Maximum Contaminant Level) – The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
- MCLG (Maximum Contaminant Level Goal) – The level of contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
- MRDL – Maximum Residual Disinfectant Level
- MRDLG – Maximum Residual Disinfectant Level Goal
- NA – Not Applicable
- ND – Not Detected
- NTU – Nephelometric Turbidity Units
- Parts per billion (ppb) or Micrograms per Liter ($\mu\text{g/L}$) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.
- Parts per million (ppm) or Milligrams per Liter (mg/L) are units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days.
- pCi/l = picocuries per liter (A common measure of radioactivity)
- TOC (Total Organic Carbon) has no health effects. However, TOC provides a medium when the water is disinfected for the formation of disinfection byproducts. TOC removal early in the treatment plant is required.
- TT (Treatment technique) – A required process intended to reduce the level of contaminant in drinking water. For example, we add orthophosphate to maintain compliance with the lead and copper rule.
- VOC – Volatile Organic Chemicals
- WTP – Water Treatment Plant
- "<" Symbol = A symbol that means 'less than'. A result of '<3.0 ppb' means that the lowest detectable level is 3.0 ppb and the contaminant was not detected in those samples.

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. Avon Lake 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 thirty seconds to two 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. A list of laboratories certified in the State of Ohio to test for lead may be found at <http://www.epa.ohio.gov/ddagw/labcert.aspx>, or by calling 614-644-2752. Information on lead in drinking water, testing methods, and steps you take to minimize exposure is available from the Safe Drinking Water Hotline at 800-426-4719 or at <http://www.epa.gov/safewater/lead>.

Avon Lake has a current, unconditioned license to operate our water system from the Ohio EPA.

¹Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the daily samples and shall not exceed 1 NTU at any time. As reported above the Avon Lake WTP highest recorded turbidity result for 2017 was 0.25 NTU and lowest monthly percentage of samples meeting the turbidity limits was 100%.

²The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to be removed. This removal ratio is calculated as the ratio between the actual TOC removal and the TOC rule removal requirements and other parameters. A value of at least one (1) indicates that the water system is in compliance with TOC removal requirements.

³These contaminants level found is the highest compliance value based on a running annual average. This average includes results from 2016 & 2017.

⁴Disinfection byproducts are the result of providing continuous disinfection of your drinking water and form when disinfectants combine with organic matter naturally occurring in the source water. Disinfection byproducts are grouped into two categories, Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). USEPA sets standards for controlling the levels of disinfectants and disinfectant byproducts in drinking water, including both TTHMs and HAA5s."

⁵Gross Alpha particles - Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

Avon Lake Regional Water

201 Miller Road
Avon Lake, Ohio 44012

Is There a Risk?

Although Avon Lake Regional Water's drinking water is better than all state and federal water quality standards, some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 at (800) 426-4791.

Have Questions? Call us at (440) 933-6226.

During the day, Monday-Friday, you may reach a representative from Avon Lake Regional Water at (440) 933-6226. If you experience an emergency after hours, please call (440) 933-3229.

For non-emergencies, email us at contact@avonlakewater.org, like us on Facebook (where you'll see daily Avon Lake beach bacteria counts Tuesday through Friday, Memorial Day until Labor Day), follow us on Twitter or Instagram ([avonlakewater](#)) or visit our website at avonlakewater.org.

