

Avon Lake Regional Water

2014 WATER QUALITY REPORT

The Board of Municipal Utilities

Avon Lake's Board of Municipal Utilities is the steward of the money you pay for clean water and wastewater removal. Every two years, you elect representatives to Avon Lake's Board of Municipal Utilities in November's general election. These private citizens, fellow Avon Lakers, represent you in determining the future of Avon Lake Regional Water, including how the money you pay for water and wastewater services can best be used to ensure reliable water provision and collection now and for generations to come.

Here are the individuals currently serving you as Avon Lake's Board of Municipal Utilities:

John G. Dzwonczyk
Board Chairman

Ian B. Hessel

Paul R. (Randy) Phillips

David J. Rickey

Timothy M. Rush



**Avon Lake
Regional Water**

Serving the region,
protecting our resource.



Serving the region, protecting our resource.

Water. Without it, life would cease to exist. One of the reasons we changed our name this year was to emphasize that one word. It helps you, our customer, intuitively understand what we do.

One of the great things about Avon Lake is our proximity to water. The Great Lakes account for one fifth of the world's fresh surface water. Some might call it an embarrassment of riches, we call it Lake Erie. Fresh water is incredibly vital, but so available to us, it's easily taken for granted. The reality is, fresh water is scarce in much of the world—including the western half of our country.

Serving the region, protecting our resource. Our new tagline is essentially a mission statement. We believe that to whom much has been given, much is required. This report is actually a report card—to let you know how we're doing according to the standards the EPA has set for all water utilities—but it's also a look at how we are trying to do right by Lake Erie and our environment as a whole. We've turned it into a yearbook

of sorts, and included a few photos of some of you enjoying our beautiful lake. (Want in for next year? E-mail your favorite photo to contact@avonlakewater.org)

Some of the information in this report is required by EPA mandate, but we've also included information to help inspire you to help protect Lake Erie for generations to come.

Call us 24/7 at (440) 933-6226 if you are experiencing a water emergency.

For questions about your water or the services we provide, call (440) 933-6226 during our weekday business hours (M-F, 8 a.m.-4:30 p.m.) or e-mail us at contact@avonlakewater.org. For summertime Avon Lake beach bacteria counts (T-F) and other water-related news you can use, like us on Facebook at [/avonlakewater](https://www.facebook.com/avonlakewater). You can also follow us on Twitter @avonlakewater or visit our website at avonlakewater.org.

The Year in Review

This report details the water quality for the year 2013. To help remind folks that Lake Erie—and our planet—are worth the extra effort of conservation, we created opportunities to share the challenges they face and helped people get involved to solve them.

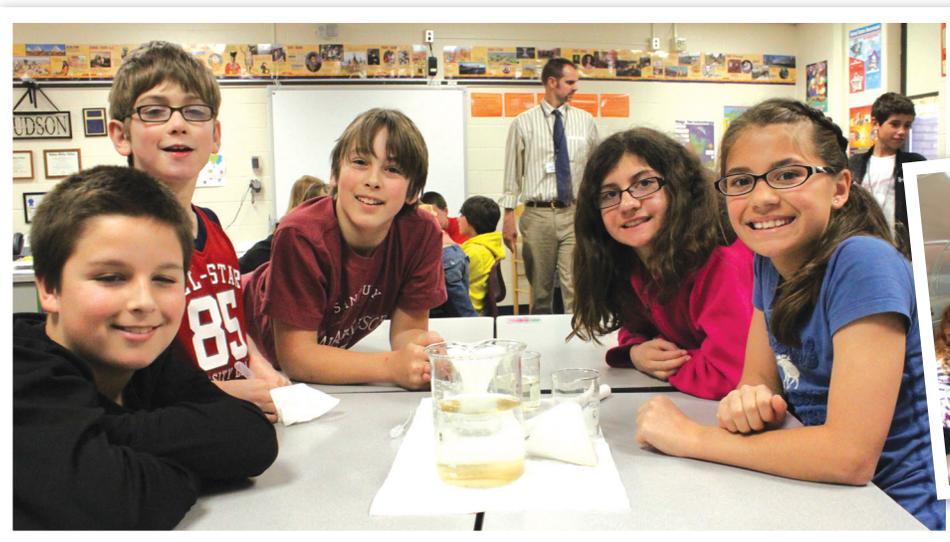
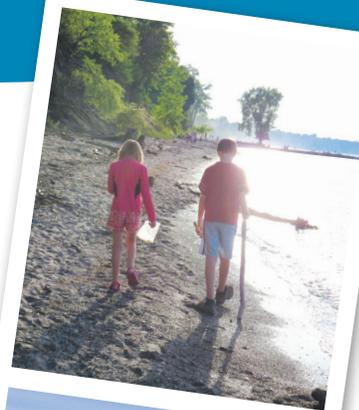
Here are a few of them.

*"We never know the worth
of water till the well is dry."
— Thomas Fuller*

Water Warriors

In early 2013, we implemented a program for Troy Intermediate School to give fifth graders a first-hand look at the science behind water and wastewater treatment. Students learned about the chemistry behind Avon Lake's water delivery and recovery system, including field trips to both water and wastewater plants. After the tours, students conducted experiments with our engineers and scientists back at Troy.

Also a part of the program: A session with the executive director of Drink Local Drink Tap (DLDT), a Lakewood-based nonprofit that helps populations in developing countries gain access to safe drinking water. Students learned how their African counterparts spend hours each day walking to get water (sometimes clean, sometimes not) before heading off to school.



Reasons to refill: bottle filler donation

To educate people about the environmental benefits of tap water versus bottled water, we purchased 16 bottle fillers for our community: Fourteen were installed in nearly every Avon Lake



school, one in the Avon Lake Public Library, and one in City Hall.

Reasons to refill vs. buying bottled water every day:

- Millions of barrels of oil are used during the water-bottling process each year.
- The majority of single-use bottles end up as litter or in landfills; at least 800 million pounds of them in 2011 alone.
- Plastic water bottles take at least 400 years to biodegrade.
- For the same cost as a \$1.50 bottle of water, you could refill a 20-ounce bottle with tap water 3x day for five years.



Earth Day in May beach clean up

To celebrate National Drinking Water Week, and despite cold temperatures, Avon Lakers turned out to support our clean-up event at Miller Road Park beach. Together, we rid Avon Lake of more than 200 pounds of trash.



The Wyland Clean Water Mobile Learning Center

Eighteen years after Wyland first put his mark on downtown Cleveland (the Cleveland Power Plant's *Whaling Wall*), we brought him back, so to speak, to help our community better understand Lake Erie's current challenges—and encourage environmental conservation. More than 1,200 turned out, including 700+ students from all four Avon Lake elementary schools, Troy, St. Joe's, and Learwood. The 18-wheeled, interactive exhibit demonstrated, in a variety of ways, how people, structures, and climate impact our watershed, food

webs and the need for conservation. More than 500 community members came out for the community open house nights.

The three-day stop in Avon Lake took place in the middle of the vehicle's cross-country 2013 campaign that started in Florida, moved up through Virginia to Baltimore, and continued through Missouri and Wisconsin before heading home to California and was the exhibit's first and only Ohio appearance to date.

The event also attracted interest from Great Lakes Brewing Company and Marci Kaptur's office, as well as the Plain Dealer and conservation organizations. One Wyland official called our event "the best response from a community in my three years with this truck."



The Clean Water Mobile Learning Center was created by Wyland Foundation in 2007. Wyland Foundation's mission is to promote and protect waterways through education and art.

2014: What we're looking forward to

We've got a lot going on these days, but one of the things we're most excited about is the inaugural Lake Erie WaterFest, coming to Miller Road Park on Sat., August 9.

This free, family event offers attendees the opportunity to try out a kayak or paddleboard, watch a master sand architect work on a giant sculpture, or build their own. Participating organizations like Hooks for Hunger and Firelands Fly Fishing are presenting learn-to-fish and lure-tying clinics. Follow the Fish ARTSHOP artists will offer nature-themed and sustainable works for sale.

By experiencing Lake Erie a whole new way, we hope attendees will be inspired to protect our most precious natural resource. Other activities include Lorain County Metro Parks raptor experience, life-jacket relay races, kid crafts, and much more. Food trucks like Sushi on the Roll will join other vendors for fun in the sun.

Avon Lake's first triathlon: Registration for the WaterFest triathlon (and—for kids—Jr. Splash & Dash) can be accessed on the WaterFest website, avonlakewater.org/waterfest.

Thanks go to the City of Avon Lake, Friends of the Parks in Avon Lake, Kopf Builders, and PolyOne for their support of this lake-focused extravaganza.



Your bill payments keep the water pumping

Without your bill payments, the water would literally stop flowing here in Avon Lake. Water and wastewater treatment is a highly specialized field, requiring much in the way of hardware and infrastructure, as well as highly trained staff to make things work and keep us in compliance with state and federal regulations.

Here's some of what your money bought in 2013.

- We've purchased new water pumps for our water filtration plant to keep your water prices low. Our 40-million-gallon per day (mgd) filtration plant is about to be a 50-mgd filtration plant, allowing us to further defray our costs by continuing to supply water to our growing region.
- We fixed 43 water line breaks in 2013.
- We maintained our approximately 130 miles of water mains and 100 miles of sanitary and combined sewer lines, troubleshooting problems before they affected you.
- We installed 3,700 feet of new water lines to ensure uninterrupted water delivery to your home.
- We began the Belmar basin combined sewer separation, the thirteenth of seventeen sewer separations we are undertaking as part of keeping Lake Erie clean (and keeping Avon Lake in compliance with the EPA).
- We've paid for the increased number of supplies needed to remove higher-than-normal amounts of algae from drinking water.

Rate increases: Will they continue?

You should probably go ahead and add one to the "nothing in life is sure but death and taxes" list. As long as our costs rise (which they will, due to inflation, environmental changes, and regulations), so must the rates we charge. Don't worry. Unlike many utilities, our bulk service agreements across the region help defray our costs.

Even with the coming increases, you'll still pay less for a day's worth of drinking, flushing, cooking, bathing and washing for you and your family than you'd pay for a 20-ounce bottle of water.

What's more, according to the most recent Ohio EPA rate survey of water utilities, your water costs less than 99% of Ohioans in similar-sized cities, and you pay less than 94% of similar Ohioans for wastewater services.

What are drinking water standards?

A source water assessment was conducted by Ohio EPA for the Avon Lake Regional Water system in 2002. We use surface water drawn from Lake Erie. For the purposes of source water assessments, all surface waters in Ohio are considered to be susceptible to contamination. Due to the vast size and dilution capabilities of Lake Erie, Ohio EPA evaluated our water's contamination potential based on a Critical Assessment Zone (CAZ) and determined there was no direct source of pollution. Ohio EPA further determined that our source water analysis and emergency operation plan would minimize undetected contamination.

Avon Lake Regional Water treats water to meet EPA drinking water quality standards. Implementing measures to protect Lake Erie and 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 Steve Heimlich 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 byproducts 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.

Where does your water come from?

Our water filtration plant (WFP) draws its water from Lake Erie. There are two separate intakes to ensure the 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. 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 2013

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation?	Year Sampled	Typical Source of Contaminants
Microbiological Contaminants							
Turbidity (NTU) ¹	n/a	TT	0.19	0.04 - 0.19	No	2013	Soil runoff
Turbidity (% samples meeting standard)	n/a	TT	100%	100%	No	2013	
Total Organic Carbon (ppm) ²	n/a	TT	1.0	1.0 - 1.44	No	2013	Naturally present in the environment
Inorganic Contaminants							
Barium (ppm) ³	2	2	0.031	0.02 - 0.032	No	2012-13	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Copper (ppm)	1.3	AL=1.3	0.06	n/a	No	2013	Corrosion of household plumbing
<i>90th percent sample result</i>	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	2013	Corrosion of household plumbing ⁶
<i>90th percent sample result</i>	One out of thirty samples was found to have lead levels in excess of the lead action level of 15 ppb.						
Fluoride (ppm)	4	4	0.95	0.76 - 1.12	No	2013	Water additive which promotes strong teeth
Nickel (ppb) ³	100	100	1.8	0 - 1.8	No	2012-13	Erosion of natural deposits; Discharge from electroplating, stainless steel and alloy products
Nitrate (ppm)	10	10	1.27	<.10 -1.27	No	2013	Natural deposits, fertilizers, sewage
Volatile Organic Contaminants³							
Haloacetic Acids (ppb) ⁴	n/a	60	14.7	9.2 - 18.3	No	2013	By-product of drinking water disinfection
Total Trihalomethanes(ppb) ⁴	n/a	80	33.7	20.9 - 43.4	No	2013	By-product of drinking water disinfection
Residual Disinfectants							
Chlorine (ppm) ³	MRDLG	MRDL	1.14	1.09 - 1.42	No	2012-13	Water additive to control microbes



Definitions

- **Action level (AL)** – 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.
- **Maximum Contaminant Level (MCL)** – 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.
- **Maximum Contaminant Level Goal (MCLG)** – 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.
- **Maximum Residual Disinfectant Level (MRDL)**
- **Maximum Residual Disinfectant Level Goal (MRDLG)**
- **Not applicable (n/a)**
- **Not Detected (ND)**
- **Nephelometric Turbidity Units (NTU)**
- **Parts per billion (ppb) or micrograms per Liter (ug/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.
- **Total Organic Carbon (TOC)** - TOC 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.
- **Treatment technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water. For example we add lime to increase the pH of our finished water in order to maintain compliance with the lead and copper rule.
- **Volatile Organic Chemicals (VOC)**
- **Water Filtration Plant (WFP)**

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 Regional Water 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.state.oh.us/ddagw>, 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 Regional Water 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 WFP highest recorded turbidity result for 2013 was 0.19 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 2012 & 2013.

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."

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Avon Lake Regional Water

201 Miller Road
Avon Lake, Ohio 44012



Source Water Monitoring

The USEPA has required public water systems that use surface water to monitor for Cryptosporidium, E. coli and turbidity based on system size and filtration type. The Avon Lake water plant has always monitored Lake Erie water for E. coli and turbidity as part of the treatment process. Monthly source water samples were analyzed for Cryptosporidium beginning in April 2007 through March 2010 and none were detected.

Is there a risk?

Although Avon Lake Regional Water's drinking water surpasses all state and federal water quality standards, 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.

How can I learn more?

Please contact Steve Heimlich, Water Plant Manager, or Ted Popiel, Plant Chemist, at (440) 933-3229 for additional information. In addition, the public is welcome to attend any regularly scheduled meeting of the Avon Lake

Board of Municipal Utilities, generally on the first and third Tuesdays of each month at 6:30 p.m. in the Board Room of the Avon Lake Regional Water administration building at 201 Miller Road.