

Edgewater, Villa Angela and Euclid Beaches: 'Testing the Waters' Beach Report expected to be released this week

Natural Resources Defense Council (NRDC) ranks the nation's beaches

Cleveland – Summer is finally here, but the Northeast Ohio Regional Sewer District (Sewer District) has been conducting daily water quality tests since early May. Sewer District employees have been sampling Lake Erie waters seven days a week at three local beaches: Edgewater, Villa Angela and Euclid. Daily testing will continue through September 6, 2014.

The Sewer District has invested in research efforts to identify the most accurate and timely tools for predicting and determining the water quality at these three beaches. The Sewer District's laboratory staff:

- Continues to research the various ways to utilize rapid microbial identification methods, providing timely and accurate beach results to the public. The laboratory staff uses the analytic results from this rapid method to give same day water quality predictions instead of using data from the previous day.
- Developed a predictive model called "Nowcast" to determine the water quality at these beaches. "Nowcast" uses several factors, including rainfall, wave height, and water clarity, to predict water quality.

"The Sewer District has studied the beach issues for years and has refined our beach testing methodology" said Frank Greenland, Director of Watershed Programs for the Sewer District. "We've also enhanced our partnership with the Cleveland Metroparks on regular beach cleaning efforts, which can reduce bacteria levels in adjacent waterways."

Public notification of water quality is provided seven days a week by 9:30 a.m. The latest results can be found on the Sewer District's home page (www.neorsd.org), by following the Sewer District's official beach report Twitter account ([@NEORSDBeaches](https://twitter.com/NEORSDBeaches)) or at the entrances to Edgewater and Villa Angela Beaches.

NRDC 'Testing the Waters' Beach Report

In addition to the Sewer District's public notifications, the Natural Resources Defense Council (NRDC) typically releases its annual "Testing the Beaches" report at the end of June. Each year, most Greater Cleveland beaches rank at the bottom.

In previous years, rankings were based on the total number times a beach's samples exceeded the "advisory" standard of 235 CFU/100 mL (amount of *E. coli* in a predetermined quantity of water). This year, the NRDC has adopted stricter guidelines and will base its rankings on the

total number of times a beach's samples exceed 190 CFU/100 mL*. Ohio EPA's criterion remains at 235 CFU / mL.

"The more you look, the more you find," said Greenland. **"Edgewater, Villa Angela and Euclid are three of the few beaches in the nation tested daily during recreation season.** Many other beaches across the country are tested only a couple of times a week, sometimes only a couple of times a month. The daily beach monitoring program in Greater Cleveland shows this region's dedication to providing the public with timely information on bacteria levels at area beaches. "

Many variables impact water quality, including the presence of waterfowl at the beach, the influence of Lake Erie currents, the fate of pollutants such as raw sewage discharged into local water bodies, as well as stormwater run-off, which can carry motor oil, garbage, bacteria, and other pollutants into local water bodies. Additionally, there are problems with some of the local sewer infrastructure, like sanitary pipes inadvertently connected to storm sewers. This causes illicit discharges where sanitary water makes its way through a stormwater pipe and then is directly discharged into a local water body.

"Euclid Creek discharges directly into Lake Erie and the confluence is in very close proximity to Euclid Beach. This is notable because the creek is impacted by a wide variety of urban pollution sources, like failing septic systems, stormwater runoff, illicit connections of sanitary sewage to storm sewers, and the natural environment," said Greenland. "For example, in our Easterly Service Area, which includes Euclid and Villa Angela Beaches, there are significant combined sewer overflows, a combination of untreated sanitary and stormwater discharged into local water bodies during heavy rain events."

The Sewer District is investing \$3 billion in Project Clean Lake, which is designed to reduce combined sewer overflows from 4.5 billion gallons a year to 500 million gallons a year by 2035. In our Easterly Service Area — Project Clean Lake will reduce overflows by over two billion gallons annually. However, Project Clean Lake alone will not solely address bacteria issues at local beaches.

"While we cannot control nature's impacts on water quality, like wind, currents and water fowl, we can control some of the human impacts. There's still a lot of work that needs to be done in that arena," said Greenland. "Project Clean Lake is a great start, but it will not address all of the bacteria issues facing our beaches. We have to control stormwater regionally, but unfortunately, the Sewer District's Regional Stormwater Management Program is tied up in litigation. We have to manage illicit discharges on the local level, and the Sewer District has ramped up its efforts to identify and address those discharges. Individually, we have to be cognizant of personal behaviors impacting our local waterways. Otherwise, if we do not address these other pollution contributors, we'll continue to see our beaches ranked at the bottom of NRDC's list for years to come."

**Note: This new number is in accordance with US EPA's 2012 Recreational Water Quality Criteria that went into effect in 2013.*

Photo/Video Opportunity

There are a few opportunities for great video or photo coverage:

- Sewer District staff collecting beach samples at Edgewater, Villa Angela and Euclid Beaches. Samples are collected prior to 9am daily.
- Sewer District staff collecting water samples along the Euclid Creek. The purpose is to determine the origin of the high levels of bacteria. Collection times vary.
- Sewer District staff analyzing water samples in the (Sewer District) laboratory.

Please contact Jeannie Chapman (chapmanj@neorsd.org) or Jennifer Elting (eltingj@neorsd.org) if you're interested in covering any of the opportunities listed above. We can be reached, as well, at 216-881-6600.

Background Information - NEORSD Beach Testing History

Last year, the Sewer District completed all the work associated with a two-year grant from the US EPA through the Great Lakes Restoration Initiative (GLRI). The grant funding allowed the Sewer District to:

- enhance its research efforts on the effectiveness of rapid analytical methods for measuring recreational water quality
- determine the specific factors that contributed to water quality conditions at these beaches. Examples of specific research efforts include the refinement of source tracking capabilities, which will help to pin-point specific sources of bacteria, and the installation of velocity meters at the mouth of Euclid Creek to track the movement of the Euclid Creek discharge plume when it reaches Lake Erie currents.

Additionally, research efforts and funding from two GLRI grants from 2010 through 2012 have enabled the Sewer District to continue to develop and refine its method for determining the water quality at Edgewater, Villa Angela, and Euclid Beaches. The predictive models over the past two years have utilized a mixture of environmental variables coupled with data generated from a rapid microbial method. These models were able to predict the water quality with an accuracy of greater than 80%.

For the 2014 beach season, after thorough statistical analysis and additional research performed last year, the Nowcast water quality determination will be based solely on the results from a rapid microbial method. The laboratory staff anticipates the accuracy of this new method to be as good if not better than the predictive models used in 2011, 2012 and 2013. The new rapid method allows results to be available in approximately three to four hours compared to 24 hours using conventional methods.

Prior to the adoption of the Nowcast System at Edgewater Beach and Villa Angela Beach, the predictions were based upon Sewer District laboratory results from beach water samples collected and tested the previous day. The then-unavoidable 24-hour delay meant that bacteria levels could have increased or decreased substantially during that period.

The Nowcast System is supported by the Northeast Ohio Regional Sewer District, Cleveland Lakefront State Park, Cleveland Metroparks, Cleveland Department of Public Health, Cuyahoga County Board of Health, Ohio Department of Health, and United States Geological Survey, who has been a major partner in developing the methodology for the Nowcast.