Community Science Initiative Detects Nitrate in Lower Eastern Shore Residents’ Private Wells

The initiative aims to protect public health by engaging residents of Somerset, Wicomico, and Worcester counties in drinking water testing

A team of environmental policy advocates, community members, and public health scientists have partnered on an initiative to assess and safeguard drinking water for residents of Maryland's Lower Eastern Shore who rely on private wells. The group, which includes representatives from The Assateague Coastal Trust, Center for Progressive Reform (CPR), Environmental Integrity Project, and the University of Maryland School of Public Health, created the Lower Shore Safe Well Water Initiative to protect public health by engaging residents of Somerset, Wicomico, and Worcester counties in community science focused on drinking water quality in the region.

Many Lower Eastern Shore residents rely on private wells for their household water, but the state of Maryland does not regularly monitor private wells or maintain a public database of well records, leaving many in the dark about the quality of the region's well water. The initiative helps interested residents test their well water for nitrate, a common drinking water contaminant that is colorless, odorless, and tasteless. Nitrate can form when nitrogen from manure, fertilizer, or failing septic systems breaks down. It is an important plant nutrient, but in excess amounts, it can contaminate drinking water and endanger people's health.

Overall, 127 residents tested their private wells for nitrate. Nearly one-fifth of wells had nitrate levels that may be hazardous to health. These results complement a report published by CPR in 2020, which found that four percent of private wells in Wicomico and Worcester counties had nitrate levels above the federal standard of 10 milligrams per liter.

“Our 2020 report assessed well water quality data going as far back as 1965,” said Darya Minovi, policy analyst at CPR. “These new findings confirm that nitrate contamination is still a problem for Lower Shore residents who rely on private wells.”

In addition to being contacted with their results, all participants were provided with information on how to treat their drinking water. Free follow-up laboratory testing was also offered to all participants with sample results of five milligrams per liter of nitrate or greater. In July 2021, the initiative hosted a well safety training facilitated by the Southeast Rural Community Assistance Project.
The initiative’s findings illustrate the importance of annual well water testing, but evidence suggests this isn’t happening. In a survey completed by participants prior to testing their wells, few reported testing their wells annually. Meanwhile, nearly a third of participants indicated that they had never tested their wells. In a follow-up survey after testing concluded, more than a third of respondents said that the cost of testing and remediation was a barrier to regular testing.

Del. Vaughn Stewart (D-Montgomery) has introduced a bill this year that would address barriers to testing. If passed, House Bill 250 will create a Private Well Safety Program in Maryland. The program will provide eligible residents with financial assistance to cover the costs associated with water test kits and well remediation if unsafe levels of contamination are detected. The bill will also require Maryland’s Department of the Environment (MDE) to create a public online database of well water quality test results and require water quality testing during the sale of a home with a well.

“There is almost no public information regarding private wells for Lower Shore counties. This is detrimental to the residents who are trying to find information about water quality in their communities,” said Assateague Coastkeeper Gabby Ross, “This bill would provide the critical assistance needed to support residents in areas where well water is unsafe and heighten the need for more testing and more public information.”

The House Environment and Transportation Committee hearing is scheduled for Wednesday, February 2nd, at 1 p.m.

For more information about House Bill 250, visit https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/hb0250. The Lower Shore Safe Well Water Initiative is no longer accepting new participants, but to learn more about the study visit https://www.lowershoresafewells.com/.

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Assateague Coastal Trust, a member of the global Waterkeeper Alliance movement, hosts the Assateague COASTKEEPER, working to assure our communities have access to swimmable, fishable and drinkable water. For over 50 years ACT has been working arm in arm with diverse community partners to protect and defend the health of Delmarva’s coastal waters through
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