

Drinking Water Incident Case Studies

Case Study 2: Flooding from Hurricane Florence affects Private Wells

Hurricane Florence made landfall in North Carolina on September 14, 2018. Owners of private drinking water wells were significantly impacted by the storm.

INCIDENT

Flooding from Hurricane Florence spread farm animal waste, septic system overflows, and raw sewage. North Carolina news outlets reported that 33 hog waste lagoons overflowed and millions of gallons of raw sewage were discharged into rivers when wastewater treatment plants overflowed. These types of discharges can lead to the contamination of private drinking water wells.

EFFECTS ON THE COMMUNITY AND LOCAL GOVERNMENT

According to estimates by the National Groundwater Association, over 330,000 private wells are located in North Carolina counties that were affected by Hurricane Florence. In the immediate aftermath of the storm, the North Carolina Department of Health and Human Services (NC DHHS) advised residents not to drink water from wells that had flooded until they could be disinfected and tested for bacterial contamination.

People who depend on private wells needed alternative water sources until these actions could be taken. Public officials and private disaster relief organizations worked together to assist with this need. Communication was also a crucial part of the response, as individuals needed information about how to get reliable testing for their wells, how to disinfect their wells properly, and how to know when the water was safe to drink again.

Private wells are not regulated comprehensively. They must receive permits from the local health department when first constructed, but there is no ongoing oversight of the wells by governmental agencies. Rather, well owners are responsible for ensuring that their well water remains safe to drink.

NC DHHS advises those who use private drinking water wells not to drink well water or turn on electricity for well pumps until flooding recedes. It recommends using water

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reserves and bottled water until private wells are disinfected and tested for contaminants. Local governments where drinking water well flooding occurs may need to amplify this message and inform well owners about available resources, such as sources for free testing, water filters, and discounted chlorination and decontamination. For example, after Hurricane Florence, Carteret County officials shared information about the free testing via a press release, along with instructions on how to chlorinate private wells.

POST-INCIDENT FOLLOW-UP

After the storm, NC DHHS offered free testing to well owners in 23 counties. The agency distributed 2,165 water analysis kits to local health departments. As of May 31, 2019, 1,252 had been sent back to the State Lab of Public Health for analysis. Almost 15% of the samples tested positive for E. coli or total fecal coliform, pathogens that can cause gastrointestinal illness.

DISCUSSION QUESTIONS TO CONSIDER

This case study may be used as an exercise tool in local planning. Here are some questions for discussion by local communities:

- What proportion of your community's residences get drinking water from private wells?
- Do local government agencies have the information needed to locate which residences are served by private drinking water wells?
- What plans does your community have for communicating with private drinking water well users when wells are affected by an incident?
- What plans does your community have for assisting residents with obtaining alternative drinking water when private drinking water wells are affected by an incident?
- What resources are available to assist residents with disinfecting and testing private drinking water wells?
- What opportunities exist for local collaboration in an incident such as this one?
- What would be the challenges to local collaboration?

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Sources

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Help scientists, get your private well tested for free after Hurricane Florence (The Port City Daily, Wilmington NC, November 24, 2018), available at <https://portcitydaily.com/local-news/2018/11/24/help-scientists-get-your-private-well-tested-for-free-after-hurricane-florence/>.

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