PFAS IN RURAL COMMUNITIES

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WHY IT MATTERS

Rural Virginia, with its varied landscapes and habitats, boasts immense biodiversity, beauty, and working lands that drive the economy and provide a cherished rural way of life. But toxic substances in conventional agriculture and forestry practices threaten this wealth and benefits. The dangers of synthetic and toxic chemicals in pesticides and **biosolids** (treated sewage sludge used as fertilizer) have long been acknowledged[1] but, in recent years, awareness has grown of untested and undisclosed **per- and polyfluoroalkyl substances (PFAS)**, "forever chemicals" that are migrating from agricultural inputs (*see Stopping PFAS at its Source, page 27*).

Farmland and forestry lands, both common end-uses destinations for biosolids, can be pathways for PFAS to build up in soils, migrate into crops, leach into ground and surface water, and transfer to game, fish, and other wildlife through the food chain. As PFAS accumulate in crops, livestock, and wildlife, they pose an ever-increasing risk to human health, farmers' livelihoods, and local ecosystems. Further, PFAS contamination on farms also creates complex economic risk to farmers and the financial institutions that support them.[2] Virginia also continues to import biosolids from other states for land application. Recent testing in states like Maryland has confirmed the presence of PFAS in these materials, raising additional concerns as they continue to be applied to working lands in Virginia.[3]

Testing has shown widespread PFAS contamination of groundwater wells across Virginia, indicating environmental harm and health risks to the 1.8 million Virginians who rely on private wells for water.[4] While EPA rules protect public water supplies, no such protections exist for rural well and surface water users.[5] Access to testing and remediation is limited, especially for low-income rural residents, who are already disproportionately exposed to PFAS.[5,6]

CURRENT LANDSCAPE

Testing on Virginia farmlands has found PFAS chemicals present statewide, from the Mountain and Valley region to the Eastern Shore.[8] Lands where biosolids have historically been applied as a "beneficial" soil amendment show particularly concerning levels.[9] Often, concentrations of commonly tested-for PFAS compounds exceed safe drinking water limits by several orders of magnitude. These chemicals persist and can accumulate in soils, creating long-term contamination risks, impacting generations to come.

Advancements have been made in recent years to better identify and disclose PFAS threats in rural areas. Virginia laws passed in 2026 explicitly gave local governments the authority to require PFAS monitoring at sludge application sites in their jurisdictions;[10] established interim limits for PFAS in biosolids that may be spread on land, and in what quantities, while also requiring disclosure of PFAS levels to receiving farmers.[11] However, uncertainty remains as to whether these interim limits are sufficiently protective of human health, wildlife, and the environment, particularly given that federal standards remain stagnant compared to emerging science. Additionally, other states using more restrictive limits invite the export of contaminated biosolids.

In 2024 and 2025, legislation passed requiring monitoring for PFAS in drinking water sources, including impacts to groundwater.[12] Sampling shows that PFAS drinking water limits are violated in dozens of public water supplies, both from groundwater and surface water sources. Sampling has commenced to identify discharges that may contribute to this contamination.

However, additional gaps remain. Previous attempts to provide funding to low-income well owners for PFAS testing and remediation have been unsuccessful. Beyond biosolids, PFAS contamination on rural lands may also stem from other products, including pesticides, wherein PFAS can be present as intentional ingredients or introduced through product packaging.[13,14]

OPPORTUNITIES

We have the chance to protect Virginia's rural lands and farmers by better identifying and remediating PFAS contamination, both upstream and downstream, from agricultural areas where sewage sludge and pesticides are applied (See Stopping PFAS at its Source).

Rural communities downstream from application sites rely on well water for drinking. Continuing to monitor public drinking water systems for new and legacy PFAS and identifying and controlling upstream PFAS discharges (in accordance with statutory amendments) can help increase protections for communities throughout the state. Supporting these efforts through adequate state funding and staffing can expand protection of public water supplies.

Virginia can also implement programs to aid households with private wells to test for PFAS and, when needed, treat their water.[15] Testing and remediation of PFAS contamination in rural wells can help mitigate

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the health harms associated with long-term PFAS exposure through drinking water for the roughly 80% of rural residents who lack practical access to PFAS testing for their primary water source.

To support Virginia's transition away from PFAS, opportunities also exist to incentivize research and development of **bio-based** alternatives and to support farmers who embrace **regenerative agriculture.**[16,17,18]

Additionally, increased state funding for the **Virginia Department of Environmental Quality (DEQ)** to further address this issue would enable the agency to develop and implement a more comprehensive statewide PFAS strategy, while improving the public's access to data and resources related to PFAS contamination.

TOP TAKEAWAYS

Virginia's rural communities and working lands bear a disproportionate risk of PFAS exposure.

Roughly 80% of rural residents lack practical access to PFAS testing for their primary water source. Testing for and remediating PFAS contamination in rural wells and surface waters sources would mitigate the health harms associated with long-term PFAS exposure in drinking water.

Increased state funding and direction to further address this issue would enable DEQ to develop and implement a more comprehensive statewide PFAS strategy.

ENDNOTES

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