

Forever Chemicals in Our Soil and Groundwater

SCS ENGINEERS

You're likely hearing a lot about perfluoroalkyl and polyfluoroalkyl substances (PFAS). The Wisconsin Department of Natural Resources (WDNR) and the U.S. Environmental Protection Agency (USEPA) are focusing their attention on these contaminants.

PFAS are often referred to as "forever chemicals" due to their inability to be broken down in the environment. Due to the potential high toxicity of PFAS at low concentrations, the proposed groundwater standard is measured in parts per trillion instead of parts per billion, more than 100 times more stringent than groundwater standards for other well-known toxic contaminants from gasoline and solvents.



PFAS are a large family of man-made chemicals – they are not naturally occurring. They were developed back in the 1930's and have been commercially available since the 1940's. PFAS were used in a broad range of industrial settings and consumer products. 3M phased out their manufacturing in 2002, and other voluntary phase outs started around the same time; however, some of the replacement chemicals may also have some environmental concerns. Products where PFAS were used included nonstick coatings (e.g., Teflon), water-repellant coatings on clothing and food packaging, and firefighting foams.

PFAS have been found in water supplies across Wisconsin, the country, and internationally, though testing methods and action levels vary greatly. The USEPA is working to create health based standards for these chemicals, but time and the sheer volume of compounds in the chemical family mean that the process will take time.

Fresh, clean water is a resource that is critical to the agricultural community and the entire population of Wisconsin. Some community water supplies have been forced to rely on bottled water due to PFAS impacts.



Another way that PFAS may affect you is in agricultural nutrients. A recent national study showed that many municipal wastewater biosolids, sold as retail fertilizers, have been found to contain PFAS. Milwaukee's Milorganite was one of the products tested and it was found with PFAS above the study's screening limits. Other biosolids from treatment plants are commonly used as nutrients on agricultural fields, and studies are still determining the levels of PFAS present in those materials.

The Wisconsin PFAS Action Council, including dozens of public departments and entities, recently released an Action Plan that contains 25 action items. Highlights include establishing standards for PFAS in soil and water, creating a communication infrastructure, streamlining safe drinking water responses, and supporting communities at greater risk for exposure to PFAS.

With WDNR's and USEPA's increasing focus on PFAS, you're sure to hear more about them in the future. Industries and individuals all have a stake in these chemicals that have been around for a long time, but are still being studied so we can understand the risks and best management practices needed to address them.

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