



## Testimony March 10 NJ Assembly Environment Committee

### What are PFAS? Health risks?

Per- and polyfluoroalkyl substances (PFAS) are compounds with at least one totally fluorinated carbon atom, making an extremely strong bond. They are a class of chemicals used for decades in manufacturing, industrial applications, aqueous film forming foam used in firefighting, and a multitude of consumer products. They are known as “forever chemicals” because they don’t break down in the environment. Miniscule doses of PFAS build up in the human body and are linked to disease and adverse health effects, including developmental effects in the fetus and young children, cardiovascular disease, ulcerative colitis, thyroid disease, pregnancy-induced hypertension and cancers, including testicular and kidney cancer.<sup>1</sup> Scientists, health and toxicology professionals, and agencies are extensively studying PFAS compounds since they are persistent and highly mobile in the environment, bioaccumulative in organisms, and toxic at low levels.<sup>2</sup> EPA estimates there are 12,000 individual PFAS chemicals.

### How do they enter the State’s waterways?

PFAS are discharged directly through their use in manufacturing such as by DuPont and Solvay facilities; and firefighting – such as at Dept. of Defense installations where the foam was used in training and in firefighting; and through many pathways such as sewage and industrial wastewater treatment plants; landfills; application of sewage sludge or “biosolids” on farms and parkland; and degradation of consumer products. They travel by air, through groundwater and surface water, depending on the type of PFAS. They are mobile in water and are found in soils, sediment, vegetation, food, fish, and wildlife. For instance, short-chain PFAS have been found in vegetables such as celery and tomatoes grown in contaminated soils and in milk from cows who ate contaminated grass, the result of PFAS in sewage sludge applied as fertilizer to farm fields.<sup>3</sup> As PFAS have become more understood through research, the remarkable ability of these highly toxic compounds to enter the environment and the human body and stay there has astounded scientists, regulators, health professionals, and the public. In fact, the water crisis created by these compounds has caused worldwide disturbance as people wonder what their exposure to these toxic compounds is doing to themselves and their families.

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<sup>1</sup> <http://www.c8sciencepanel.org/newsletter10.html>

<sup>2</sup> <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-management-and-polyfluoroalkyl-substances-pfas>

<sup>3</sup> A Chem Trust Briefing (2019). PFAS the ‘forever chemicals’. Retrieved from [https://chemtrust.org/wp-content/uploads/PFAS\\_Brief\\_CHEMTrust\\_2019.pdf](https://chemtrust.org/wp-content/uploads/PFAS_Brief_CHEMTrust_2019.pdf) P. 8.

## Extent in New Jersey?

Data shows that New Jersey has higher levels of PFAS contamination than other states. There are many sources of contamination, both legacy and ongoing, with especially high levels of PFNA, PFOA and PFOS. It is very difficult for people to avoid exposure here due to the ubiquitous nature of PFOA and PFOS and the fact we are the most densely populated state in the nation, with so many people living close to the sources of pollution. All Americans have some amount of PFAS in our blood; it's in ground and surface water and is even found in fish and sediment in most places in the state. NJDOH and DEP issued a consumption advisory for PFAS in fish and crabs in 2018. Drinking water in New Jersey showed a wide occurrence of PFAS across the state in both its early occurrence studies in 2006 and 2009 and is now finding even more locations since the full implementation of the MCLs. Because only 224 of NJ's 506 community water systems had been sampled for PFOA and PFOS prior to MCL implementation, many more places in NJ are now finding out they have it in their drinking water and must remove it. The cleanup of the sources of contamination such as DuPont, Solvay, and 3M, is an essential action that NJ is trying to address through regulation, litigation and required remediation of polluted sites. The Dept. of Defense has been sued by NJ for lack of cooperation regarding PFAS. The scale of the contamination is enormous and the struggle to make the polluters pay is still unfolding, pushed by the state's litigation against the offending corporations. But without the cleanup, PFAS will continue to spread and threaten lives and the environment.

## Best ways to address this issue in order to protect the public health?

NJDEP has taken many actions to address PFAS compounds, more than most states, and was the first state to adopt a safe drinking water standard, or maximum contaminant level (MCL) for any PFAS compound – it was in 2018 for PFNA, the PFAS compound that shook New Jersey to its core in 2013, resulting in the reconvening of the then-shuttered Drinking Water Quality Institute, empowered with making state-based MCL recommendations for contaminants that foul drinking water. The adoption of MCLs for PFNA, PFOA and PFOS requires their removal from drinking water, a person's major pathway of exposure. This fundamental and desperately needed regulation took almost 15 years to reach fruition but it still puts NJ ahead of the federal government, who has not adopted any federal MCLs for PFAS. NJ's head start is thanks to the groundbreaking work of its nationally recognized scientists and the DWQI, providing unflinching and top notch science-based leadership by DEP and DOH.

And NJ has also adopted other important regulations covering these 3 compounds including adopting groundwater quality standards, which provide minimum remediation standards for the cleanup of contaminated sites and adding these 3 PFAS to the list of hazardous substances under the Spill Compensation and Control Act. Most recently, in January 2022, DEP established an Interim Specific Ground Water Quality Criterion for Constituents in Class II-A Ground Water of 0.002 micrograms per liter ( $\mu\text{g/L}$ ) for chloroperfluoropolyether carboxylates (CIPFPECAs), the first state to do so, quite an accomplishment.

This was made possible because DEP and EPA scientists performed very difficult forensic analyses to identify and locate this extremely toxic chemical in the environment and local drinking water. This chemical is Solvay's so-called replacement for PFNA and this action is the first step, a unique one, in addressing one of the worst injustices in NJ's PFAS history - it turns out this PFAS chemical is more toxic than the original PFNA that Solvay was supposed be replacing. It's intolerably ironic that the same people who were exposed to one of the most highly toxic of the

PFAS long-chain compounds – PFNA – have also been exposed to this newly discovered dangerous contaminant. And, it's a "so-called" replacement because it turns out this chemical has been used for decades at the Solvay plant. It slipped through EPA's bureaucratic cracks, it was allowed due to lax federal regulations riddled with loopholes that benefit chemical companies and it was hidden from the public because it was shrouded by Solvay's claim of it being a trade secret.

In fact, most of the unjustly burdened affected public still doesn't even know about it. With NJ's GW criterion, there's now a standard for cleanup and a way to further investigate and NJ is way ahead because of that. Further action and public outreach is much needed because the public's questions are begging for answers – where exactly has it migrated to, how does it affect the body, how is it removed from water, are my home grown vegetables safe to eat, is it impacting my and my family's health? This is one stunning episode of the PFAS water crisis that continues to unfold here in NJ and across the world.

Other NJ actions that could be taken:

- Effective cleanup of the Solvay facility - with robust public participation - to remove ALL PFAS from the soil and ground water, including the so-called replacement compound. Investigation into what Solvay is now using at their facility, claiming it to be a less toxic replacement for the replacement compound, to ensure its safety. Most people just don't trust them anymore, and for good reason.
- More blood studies and health assessments of people exposed to PFAS over long periods. The Paulsboro health study is crucially important. We also need studies in the Salem County communities impacted by the DuPont Chambers Works plant, now under Chemours, and in the regions around all NJ's military installations, as well as other locations being investigated by the AG office as part of the ongoing litigation. Training for medical professionals regarding diagnosis and blood sampling and programs that monitor for health effects in impacted communities is needed. People want to know and have a right to know whether PFAS is in their bodies, at what concentration, and how this will affect their health. One thing we know for certain – drinking water that contains PFAS increases a person's exposure and that can increase the risk of developing a disease linked to PFAS. And there are additional exposure routes that contribute to a person's body burden – air, soil, fish and other food, and consumer products. You won't know how much you have unless your blood is tested.
- We urge DEP to regulate PFOA, PFOS, and PFNA under Surface Water Quality regulations to provide restrictions on the discharge of these pollutants. Consideration of air quality standards should be explored. Soil, sediment and air must be monitored, especially if a release is suspected, and releases must be curtailed. PFAS compounds have been moved around the state, sometimes far from the original source of contamination, by discharges from treatment facilities, sewage plants, and sewage sludge and biosolids applications on agricultural fields. Unless the pathways of pollution are found and closed off through monitoring all potential media, these "forever chemicals" that will never go away and will continue to fan out into the environment, threatening all people in New Jersey, even those who may be remote from the original contamination.

- Potential points of contamination that have not had broad sampling done should be proactively investigated, especially if water sources are not included in public water system monitoring. For instance, private water wells for residents who are within the impact zone of a potential PFAS contamination source.
- Consideration by DWQI should be given to adopting MCL for PFHxS. PFHxS, restricted as a persistent organic pollutant under the Stockholm Convention since 2009, is also found in drinking water here. Studies have found that PFHxS bioaccumulates faster than PFOS and is very persistent; a blood study in PA found higher levels of PFHxS than any other PFAS in those tested.
- Application of sewage sludge, also called “biosolids”, to land should be prohibited until it is required that PFAS be tested for and removed from sludge prior to application.
- Consumer product regulations, such as requiring labeling and/or banning of PFAS in cosmetics, personal care products, clothing, food wrappers and containers, are an effective means of reducing exposure through everyday product use.
- Ban the use of PFAS compounds in all but the most essential uses that serve the public interest, and in those instances handle them as hazardous substances in all stages of handling, including waste disposal.

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