



August 31, 2026

Submitted electronically via email

Clerk's Office
Illinois Pollution Control Board
60 East Van Buren Street, Suite 630
Chicago, IL 60605

ATTN: Shannon Bilbruck

Re: Comments on Illinois Pollution Control Board's Published Amendments to 35 Illinois Administrative Code (IAC) Part 620 Groundwater Quality, Docket R22-18(A)

Dear Ms. Bilbruck:

Full Circle Future appreciates this opportunity to provide comments on Illinois Pollution Control Board's (hereafter "the Board") published amendments to 35 Illinois Administrative Code (IAC) Part 620 Groundwater Quality.

Per- and polyfluoroalkyl substances (PFAS) are ubiquitous in landfills, and leakage of PFAS into groundwater from landfills is a serious threat to Illinois groundwater and drinking water. The Board's decision to remove exemptions for landfills was the right decision. However, the Illinois Environmental Protection Agency's (IEPA) approach to PFAS monitoring in landfills needs to be improved. IEPA should conduct a baseline assessment of PFAS contamination in groundwater at all Illinois landfills to ensure that existing PFAS contamination is identified promptly and add PFAS to the list of groundwater detection monitoring constituents so that future leaks are detected without delay.

I. PFAS are ubiquitous in landfills

PFAS are a large class of synthetic chemicals that have been used since the 1940s because their chemical properties make them resistant to heat, oil, grease, and water. They have been used for an extensive variety of industrial processes and consumer products, including food packaging, textiles, papermaking, oil production, electronics, cleansers, polishes, inks, paints, varnishes, cookware, and personal care products. Many PFAS can move through water over long distances. Because they break down very slowly, they can remain in soil, water, and living organisms for long periods once released into the environment.

Because PFAS are widespread in the industrial and consumer waste deposited in landfills, PFAS are ubiquitous in landfill leachate. EPA evaluated leachate composition at over 200 landfills from across the country and found PFAS present in the leachate at over 95 percent of the



landfills.¹ In a review of landfill leachate composition², total PFAS concentrations at the majority of landfills were in the 10,000 ng/L range, and the maximum concentration was on the order of 100,000 ng/L.³

The dominant forms of PFAS in landfill leachate are short-chain compounds and precursor compounds.⁴ Short-chain PFAS include perfluorocarboxylic acids (PFCAs) with less than eight carbon molecules in the molecular backbone, and perfluorosulfonic acids (PFSAs) with less than seven carbon molecules. Short-chain PFAS are more water-soluble and more persistent than long-chain PFAS. Precursors are PFAS species that have the tendency to degrade into stable perfluorinated alkyl acids (PFAAs), such as perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS). Comparisons of PFAS profiles in waste materials and leachate show that landfills are important precursor transformation sites.⁵ The transformation pathways and intermediate byproducts of precursor transformation pathways are incompletely understood.

II. The threat of groundwater PFAS contamination from landfills is serious

The U.S. Environmental Protection Agency (EPA) has reviewed PFAS treatment and disposal methods periodically since 2020, with the most recent update published in 2026.⁶ These reviews have evaluated the ability of various disposal methods, including hazardous waste and municipal solid waste (MSW) landfills, to control PFAS releases. EPA notes that “[w]hile landfills are designed to serve as long-term containment sites, it is unclear how effective they are at containment of water-soluble or volatile PFAS for an extended duration.”⁷ EPA has concluded that “PFAS likely pass through clay liners.”⁸ In addition, the agency notes that PFAS have been detected in secondary leachate at concentrations similar to those in primary leachate.⁹ EPA concludes that “PFAS migration through landfill liners and potential groundwater impacts remains a concern.”¹⁰

¹ EPA. (2024). Preliminary Effluent Guidelines Program Plan 16.

https://www.epa.gov/system/files/documents/2024-12/preliminary-plan-16_december2024_508.pdf

² Sabba, F., Kassar, C., Zeng, T., Mallick, S., Downing, L., & McNamara, P. (2025). PFAS in landfill leachate: practical considerations for treatment and characterization. *Journal of Hazardous Materials*, 481, 136685. <https://doi.org/10.1016/j.jhazmat.2024.136685>

³ The total number of PFAS measured ranged from 11-43.

⁴ Coffin, E. S., Reeves, D. M., & Cassidy, D. P. (2023). PFAS in municipal solid waste landfills: sources, leachate composition, chemical transformations, and future challenges. *Current Opinion in Environmental Science & Health* 31, 100418. <https://doi.org/10.1016/j.coesh.2022.100418>; Dasu, K., Xia, X., Siriwardena, D., Klupinski, T. P., & Seay, B. (2022). Concentration profiles of per- and polyfluoroalkyl substances in major sources to the environment. *Journal of Environmental Management*, 301, 113879. <https://doi.org/10.1016/j.jenvman.2021.113879>; Lang, J. R., Allred, B. M., Field, J. A., Levis, J. W., & Barlaz, M. A. (2017). National estimate of per- and polyfluoroalkyl substance (PFAS) release to U.S. municipal landfill leachate. *Environmental Science & Technology*, 51(4), 2197–2205. <https://doi.org/10.1021/acs.est.6b05005>; Li, J., Xi, B., Zhu, G., Yuan, Y., Liu, W., Gong, Y., & Tan, W. (2023). A critical review of the occurrence, fate and treatment of per- and polyfluoroalkyl substances (PFAS) in landfills. *Environmental Research*, 218, 114980. <https://doi.org/10.1016/j.envres.2022.114980>; Sabba et al., 2025.

⁵ Coffin et al., 2023; Li et al., 2023.

⁶ EPA. (2026). Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances—2026 Version. <https://www.epa.gov/system/files/documents/2026-04/2026-interim-guidance-on-pfas-destruction-and-disposal.pdf>

⁷ EPA, Interim Guidance.

⁸ EPA, Interim Guidance.

⁹ EPA, Interim Guidance.

¹⁰ EPA, Interim Guidance.



Groundwater contamination near drinking water aquifers presents a human health risk. Many Illinois landfills are located within the vicinity of public water supply wells and have the potential to impact drinking water sources. IEPA states that 71 landfills are located within one mile of at least one active community or non-community public water supply well.¹¹ This is almost 40% of the landfills that IEPA says exist statewide.¹² Of these, 23 landfills are within 1,000 feet of at least one community drinking water well, and 18 landfills are within 1,000 feet of non-community drinking water wells.¹³

Full Circle Future used IEPA's map of groundwater recharge potential¹⁴ to further describe the potential for landfills to contaminate public water supplies. Our analysis found that 27 landfills are located in regions of very high groundwater recharge potential; 9 are in areas of high to moderately high recharge potential; and 11 are in areas of moderately high to moderate recharge potential. The proximity of many landfills to drinking water resources and the presence of many landfills in groundwater recharge zones indicate that the threat of drinking water contamination due leaking from landfills in Illinois is serious and requires a proactive approach to PFAS monitoring at landfills.

III. IEPA must take a more proactive approach to PFAS monitoring in groundwater at landfills

Illinois Administrative Code Title 35 Part 811.319 requires landfills to monitor groundwater wells routinely to detect groundwater contamination, but only a subset of constituents with groundwater standards are required to be monitored. IEPA believes that "the current detection monitoring list serves to adequately detect potential releases [of PFAS] into the groundwater."¹⁵ The agency has indicated that it "currently does not plan to propose the addition of PFAS to the list of constituents analyzed during detection monitoring."¹⁶ This decision is flawed. Conventional leachate indicators are not a reliable way to detect PFAS.

The fate and transport of PFAS in subsurface environments depend upon the properties of the PFAS themselves and the characteristics of the environment in which they occur.¹⁷ As of January, 2026, EPA has taken inventory of over 21,000 PFAS compounds.¹⁸ The agency does not know

¹¹ Illinois Pollution Control Board Docket R22-18(A), Illinois Environmental Protection Agency's Response to the Board's October 30, 2025 Order, 1/30/2026 [Document-115158]

¹² Illinois Pollution Control Board Docket R22-18(A), Opinion and Order of the Board by M. Gibson: Proposed Rule. First Notice [Document-116306]

¹³ Illinois Pollution Control Board Docket R22-18(A), Document-115158

¹⁴ IEPA. Potential for Aquifer Recharge [ArcGIS REST Service].

https://geoservices.epa.illinois.gov/arcgis/rest/services/SWAP/PWS_SWAPData_110515_NewSDE/MapServer/63

¹⁵ Illinois Pollution Control Board Docket R22-18(A), Illinois Environmental Protection Agency's Responses to Illinois Pollution Control Board's May 15, 2025 Order, 7/25/2025 [Document-114246]

¹⁶ Illinois Pollution Control Board Docket R22-18(A), Illinois Environmental Protection Agency's ("IEPA" or "Agency") Responses to the Illinois Pollution Control Board's (the "Board") questions raised in its August 6, 2025 Order, 8/12/2025 [Document-114332]

¹⁷ EPA. (2022). Introduction to PFAS in Groundwater.

https://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=545234; Interstate Technology Regulatory Council. (2026). PFAS – Per- and Polyfluoroalkyl Substances, Environmental Fate and Transport Processes. <https://pfas-1.itrcweb.org/5-environmental-fate-and-transport-processes>.

¹⁸ EPA. (2026, January). PFAS|EPA: PFAS structures in DSSTox (update January 2026). CompTox Chemicals Dashboard v2.8.0. <https://comptox.epa.gov/dashboard/chemical-lists/PFASSTRUCTV6>



how many of these may be present in landfills.¹⁹ PFAS vary in terms of chain length, functional groups, electrostatic charge, fluorination, structure (e.g., linear vs. branched), polymerization, hydrophobicity, and more. These all influence the properties and behavior of PFAS compounds. Myriad site characteristics also influence fate and transport. These include “soil type (including properties such as permeability, surface charge, organic carbon content, exchange capacity, mineralogy, water content), depth to groundwater, aquifer characteristics (for example, geology, presence of confining layers), oxidation-reduction conditions, precipitation/infiltration rates, groundwater velocities/flow directions, groundwater/surface water interactions, surface water flow rates, prevailing atmospheric conditions, and the presence of co-contaminants.”²⁰

The landfill leachate PFAS profile may differ from the profile in contaminated groundwater, due to precursor transformations.²¹ Broadly speaking, precursors are more prevalent in shallow soils while terminal PFAAs are more common in groundwater.²² Intermediate transformation products also need to be considered, but transformation pathways and intermediate products are poorly understood.²³

In short, EPA notes that reliable methods for determining subsurface movement of individual PFAS have not yet been developed.²⁴ Based on the available scientific research and the diversity of factors that can influence the PFAS profile at a site, both the Interstate Technology Regulatory Council and EPA advise that a broad panel of PFAS compounds must be used to assess subsurface PFAS at a contaminated site.²⁵ Neither agency advises that traditional landfill leachate indicators should be used as PFAS proxies.

In the rule-making docket, the Board received testimony on the financial impacts of including PFAS in detection monitoring. Despite the fact that IEPA has not planned to require PFAS to be included in detection monitoring at Part 811 and Part 814 landfills, outside groups provided testimony on the likely costs involved with this type of PFAS sampling. The Board determined the costs to be reasonable for all categories of Illinois landfills. In its regulatory decision, the Board said that it “considers the cost imposed on Part 807 811, and 814 landfills due to inclusion of PFAS in their detection and assessment monitoring programs to be consistent with other constituents added to the landfill rules during previous updates of Part 620 standards. Considering this, the Board finds the costs of including PFAS in groundwater monitoring programs at Part 807, 811, and 814 landfills to be economically reasonable.”²⁶

In explaining its finding that landfills should not be exempted from Part 620 PFAS standards, the Board noted that “groundwater monitoring is a preventative measure for the early detection

¹⁹ EPA, Interim Guidance.

²⁰ ITRC, Environmental Fate and Transport

²¹ EPA, Interim Guidance.

²² EPA, Groundwater.

²³ EPA, Interim Guidance.

²⁴ EPA, Groundwater.

²⁵ ITRC, Environmental Fate and Transport; EPA. (2025). EPA Superfund Program – RPM Bulletin 2025-02, Environmental Forensic Tools for Understanding PFAS Fate and Transport.

https://www.epa.gov/system/files/documents/2025-06/rpm-bulletin-pfas-environmental-indicators-4-14-2025_508-compliant.pdf

²⁶ Illinois Pollution Control Board Docket R22-18(A), Opinion and Order of the Board by M. Gibson: Proposed Rule. First Notice, 6/18/26. [Document 116306]



of any release of contaminants from a landfill so that appropriate remedial steps can be taken to protect underlying groundwater.”²⁷ The Board further cited IEPA’s assertion “that the inclusion of PFAS constituents in groundwater monitoring programs at landfills is critical for identifying potential contamination and ensuring appropriate corrective actions are timely taken at these landfills.”²⁸ In light of the Board’s reasoning and science-based regulatory guidance, IEPA should include PFAS in landfill detection monitoring programs.

To provide a comprehensive assessment of PFAS in groundwater, Illinois must combine multiple PFAS and PFAS precursor analyses. The current “gold standard” EPA-approved method for PFAS detection is Method 1633A. This method is applicable to groundwater and leachate and is capable of detecting 40 compounds. Non-target approaches should be used in combination with Method 1633 to measure PFAS precursors. A total oxidizable precursor (TOP) assay converts precursors to terminal PFAAs and the pre- and post-oxidation samples are compared to quantify precursors. This method is recommended by EPA²⁹ but is not yet standardized. EPA has proposed Method 1621, for adsorbable organic fluorine (AOF), for incorporation into 40 CFR Part 136. However, this method only measures PFAS that adsorb to granular activated carbon, so it is not as comprehensive as the TOP assay. IEPA should support the early detection of PFAS contamination in groundwater at landfills by requiring analysis of the full list of PFAS compounds detectable with EPA Methods 1633A, combined with non-target analysis.

For these reasons, we respectfully urge the Board to carefully consider the concerns and recommendations presented in this comment letter as it moves forward with the proposed order. The Board’s final decision should be grounded in sound science and a thorough consideration of potential impacts to public health and the environment. We appreciate the Board’s consideration of these comments and respectfully request that the issues raised herein be addressed in the final action.

Sincerely,

Katherine Blauvelt

Executive Director

[Full Circle Future](#)



²⁷ Illinois Pollution Control Board Docket R22-18(A), Document 116306.

²⁸ Illinois Pollution Control Board Docket R22-18(A), Document 116306.

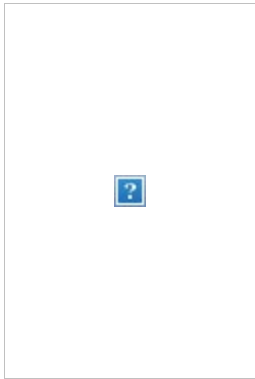
²⁹ EPA, Interim Guidance.

From: [Kimenthrie Finlay](#)
To: [Brown, Don](#); [Bilbruck, Shannon O.](#)
Cc: [Katherine Blauvelt](#)
Subject: [External] Public Comment – Docket R22-18(A), 35 IAC Part 620 Groundwater Quality
Date: Monday, August 31, 2026 6:24:42 PM
Attachments: [Comment on IL PFAS Groundwater Rulemaking Docket R22-18\(A\).pdf](#)

Dear Ms. Bilbruck and colleagues,

Please find attached Full Circle Future's public comment on the Illinois Pollution Control Board's published amendments to **35 Illinois Administrative Code Part 620 Groundwater Quality, Docket R22-18(A)**.

Thank you for the opportunity to participate in this rulemaking.



Kim Finlay

Director of Research & Analytics

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From: [Kimenthrie Finlay](#)
To: [Brown, Don](#); [Bilbruck, Shannon O.](#)
Cc: [Katherine Blauvelt](#); [Shreya Mahajan](#)
Subject: [External] Re: Public Comment – Docket R22-18(A), 35 IAC Part 620 Groundwater Quality
Date: Tuesday, September 1, 2026 7:57:25 AM
Attachments: [Comment on IL PFAS Groundwater Rulemaking Docket R22-18\(A\) FCF IEC.pdf](#)

Dear Ms. Bilbruck,

I am writing to follow up on the public comment Full Circle Future submitted on August 31, 2026 regarding Docket R22-18(A), 35 Illinois Administrative Code Part 620 Groundwater Quality.

I wanted to note that the Illinois Environmental Council has also signed on to our comment. Please consider this email as reflecting their co-endorsement of the concerns and recommendations submitted on our behalf. I have re-attached our comment for reference.

Please let us know if you need any additional information.

Sincerely,



Kim Finlay

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On Mon, Aug 31, 2026 at 7:21 PM Kimenthrie Finlay <kim@fullcirclefuture.org> wrote:

Dear Ms. Bilbruck and colleagues,

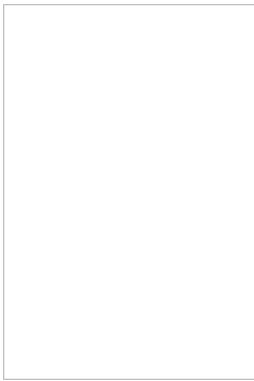
Please find attached Full Circle Future's public comment on the Illinois Pollution Control Board's published amendments to **35 Illinois Administrative Code Part 620 Groundwater Quality, Docket R22-18(A)**.

Thank you for the opportunity to participate in this rulemaking.

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