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EPN Comments on
EPA's Interim PFAS Destruction and Disposal Guidance
Docket No.: EPA-HQ-OLEM-2020
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The Environmental Protection Network (EPN) harnesses the expertise of more than 650 former Environmental Protection Agency (EPA) career staff and confirmation-level appointees from Democratic and Republican administrations to provide the unique perspective of former regulators and scientists with decades of historical knowledge and subject matter expertise.

EPN thanks the agency for the opportunity to provide comments on EPA's updated Interim PFAS Destruction and Disposal Guidance. We commend EPA for including Section 4, providing tools for evaluating impacts on vulnerable populations near destruction and disposal sites, and Section 6, providing a technology evaluation framework to evaluate emerging technologies for various types of per-and poly fluoroalkyl substances (PFAS) materials. The thermal technologies should include the use of surrogates and the disposal evaluation should include monitoring of PFAS or like compounds. We agree with Section 5's ranking of the high, medium, and low-priority research needs. The research needs to include greater emphasis on destruction methodologies.

EPN supports EPA providing guidance on the best technologies to destroy and dispose of the many PFAS chemicals. We feel that the guidance should state clearly that the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions "utilize permanent solutions and alternate treatment technologies or resource recovery technologies to the maximum extent practicable." (See a Guide to Selecting Superfund Remedial Actions, April 1990[1]). We find that this update provides some improvement over the original guidance but realize that with all thermal treatment of chemicals in general, we need to ensure that the units are operated in a manner that will have the highest probability of destruction and minimize products of incomplete combustion (PICs). Thermal treatment units need to be monitored, as do all other treatment and disposal practices, and federal and state oversight is needed. We urge EPA and the Department of Defense (DOD) to accelerate the high-priority research identified in Section 5. The guidance should recognize that EPA has recently proposed a rule adding nine PFAS to the list of hazardous constituents under the Resource Conservation and Recovery Act (RCRA) and that EPA has finalized a rule designating perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) as hazardous substances under CERCLA. Given those recent rule-making activities, the guidance should warn that in the future there is a need to list PFAS as a hazardous waste under the Clean Water Act (CWA) and RCRA so that these chemicals can only be treated as hazardous waste and not allow the treatment and disposal in a non-hazardous waste unit.

In 1985, EPA regulated dioxin as a RCRA hazardous waste[2] and required treatment in an incinerator that achieved 6-nines (99.9999%) destruction and removal efficiency and only allowed disposal in a RCRA hazardous waste landfill with certain precautions. EPN believes that PFAS compounds warrant the same level of control. On page 44 of the guidance, EPA mentions that the PFAS Thermal Treatment Database indicates incinerators capable of destroying PCBs may be the best able to destroy PFAS. Lower-temperature

[1] https://semspub.epa.gov/work/HQ/176274.pdf
[2] EPA Federal Register "Hazardous Waste Management System; Dioxin Containing Waste," FR Vol 50 No 9, January 14, 1985

thermal units with less residence time are expected to provide lower destruction and high development of products of incomplete destruction, given the strength of the chemical bonds of PFAS compounds. EPN recommends the document stresses this.

The document relies on general concepts that non-hazardous waste management is protective without sufficient supporting data. Non-hazardous management using landfills and deep well injection is ranked as having a lower relative potential to release PFAS than thermal treatment (see page 11). Non-hazardous waste deep well injection and non-hazardous landfills do not have the oversight of the federal government. Supporting data that these units effectively contain PFAS needs to be provided. If non-hazardous waste management approaches are used, this guidance should recommend the same level of oversight and long-term monitoring for these facilities as for a RCRA hazardous or CWA hazardous deep well injection. Early on, it was believed that PCBs in soils were unlikely to migrate to groundwater because of the strong binding to soil, but toxicological data later showed that those compounds could cycle through the air, water and soil and be absorbed by plants and small organisms.[3] We already know that many PFAS compounds migrate very easily through groundwater.

There are three areas where we strongly recommend that the interim guidance be strengthened:

1. The document includes Non-Hazardous Management approaches without sufficient information that supports saying that they are protective. PFAS is not yet a listed hazardous waste. We strongly recommend this happen to ensure we have adequate controls on the management of these materials. The document seems to rely on existing permitting processes for non-hazardous waste to ensure protectiveness and, in fact (see page 11), ranks non-hazardous waste management as potentially releasing less PFAS than incineration because of concerns with formation of PICs. The document should provide data to demonstrate that non-hazardous waste management will release less PFAS into the environment. The document should mention that EPA is in the process of updating the Landfill effluent limitation guideline for PFAS chemicals under the CWA. This new regulation may impose leachate collection and treatment requirements in the future, making landfills without these systems inappropriate for PFAS disposal. However, such oversight may be warranted and implemented before such guidance is released. Under CERCLA, controls can be put in place to ensure the long-term protective management of contaminants.

2. The document seems biased against incineration. Hazardous waste incineration (page 11) is ranked as having higher PFAS releases than non-hazardous industrial deep well injection and slightly less than municipal solid waste landfills. Landfills may leak, and non-hazardous deep well injection is not generally monitored, has numerous waivers allowed, and may lack sufficient oversight. Further, the document ranks landfill disposal of stable polymeric PFAS as having a relatively low potential for releases. Note—PCBs were once thought to be relatively stable in the environment but have since been found to be mobile in the environment, including at numerous Superfund National Priorities List (NPL) sites. The document states that evaluation of incineration needs to be conducted but does not place the same emphasis on the need to study landfills and underground injection as disposal options that are also lacking in data on potential PFAS releases.

[3] https://www.atsdr.cdc.gov/toxprofiles/tp17.pdf

3. The document references high-level and low-level waste but does not define what these terms mean in this context and the basis for these terms.

Recommendation

The document should be redrafted to provide a more balanced portrayal of what is known about the destruction/disposal of PFAS and what is known about non-hazardous waste management of PFAS compounds. While doing a test burn and identifying the PICs may be time-consuming and analytical methods are limited, it is important that the most rigorous methods of treatment and management be used to ensure protectiveness. If landfilling or hazardous waste deep-well injection is used, it is important that the document recommend that long-term monitoring be conducted to ensure that the waste does not migrate.

Additional research should focus on the designations of high and low-risk PFAS compounds, and the actual release of such levels in the environment. Notwithstanding that the chemical structure may imply that migration is unlikely, past experience has shown that such migration is common for other similarly characterized compounds.