

**Written Testimony for
House Committee on Oversight and Reform, Sub-committee Environment**

**Examining PFAS Chemicals and their Risks
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Decades of use of per- and polyfluoroalkyl substances (PFAS) in firefighting foams at U.S. military bases has resulted in a massive contamination of drinking water, and ultimately of people in surrounding communities. PFAS have been linked to serious illness, including kidney and thyroid disease, pregnancy complications and cancer. The U.S. military has detected PFAS contamination at more than a hundred of its bases, including dozens of locations with drinking water contamination in excess of EPA's health advisory for two key chemicals.

While the military should be held fully accountable for decades of PFAS exposure at harmful levels by military service-members, their families and surrounding communities, it must also address two sources of on-going chemical releases. These are the continued use of PFAS in newer generation firefighting foams and the disposal of historic stockpiles via incineration.

The military continues to use PFAS chemicals for firefighting

The military has spent millions of dollars to replace PFOS-based (perfluorooctanesulfonic acid) firefighting foams with newer generation PFAS chemicals.¹ Prior to 2000, all Aqueous Fire Fighting Foams (AFFF) used on military bases contained PFOS and other longer-chain fluorochemicals to quench high temperature fires. Over the intervening years, the military shifted to purchase AFFF made with newer-generation fluorochemicals containing shorter-chain fluorochemicals.² However, these chemicals are similarly persistent in the environment and even more mobile in ground water. They appear to provoke many of the same types of toxic effects as PFOS and PFOA, and are even more difficult to remove with existing water treatment technologies.³

The military specification currently requires the use of fluorinated chemicals in AFFF, but fluorine-free foams are widely available, and increasingly used outside of the United States to combat high temperature fires.⁴ The Department of Defense (DOD) claims to be investigating the feasibility of using fluorine-free AFFF, and we underscore the urgency of ending the use of PFAS in AFFF at military bases. As an example, perfluorohexanoic acid (PFHxS), a 6-carbon chain PFAS still legally allowed in AFFF was the dominant chemical measured in the Colorado Springs communities downstream from the Peterson

Air Force Base. Median blood levels in the community members were ten times higher than the general U.S. population.⁵

The military practice is using unproven and potentially ineffective methods to destroy PFAS stockpiles

The Defense Logistics Agency (DLA) has initiated contracts with commercial hazardous waste incinerators and brokers to dispose of several million gallons of AFFF foam stockpiles. The PFAS chemicals used in firefighting are highly resistant to thermal destruction. They can only be broken down by incredibly high temperatures, and incomplete destructions can form any number of concerning fluorochemicals. PFAS are not currently listed as hazardous substances in the Resource Conservation and Recovery Act (RCRA), therefore there are no regulations governing its disposal, nor liability associated with improper disposal.

Commercial hazardous waste incinerators will likely fail to fully break down fluorochemicals because of the elevated temperatures and prolonged holding time needed for their destruction. As a result, poorly managed incineration would emit PFAS back into the environment, or partial decompose to form acutely toxic chemicals like hydrogen fluoride that could put nearby communities at serious jeopardy.⁶

In 2016 the DLA contracted with Heritage Environmental Services⁷ and Pacific Commercial Services⁸ to incinerate more than a million gallons of PFOS fire fighting foams held by the Air Force at bases across the country.⁹ The military didn't require any specific protocols for incineration, any recordkeeping or reporting of where or how the materials were handled, nor monitoring to ensure PFAS chemicals were effectively destroyed in the process.

Much of the Air Force stockpile was sent to the Heritage Environmental Services who has a hazardous waste incinerator in East Liverpool Ohio that has repeatedly put the surrounding community at risk by chronic violation of its operating permits.¹⁰ Last year the Department of Justice settled with Heritage for more than \$500,000 in penalties and lead abatement projects after a 2013 explosion at the incinerator coated the adjacent community in toxic industrial ash.¹¹

In the fall of 2018, the DLA granted contracts to Tradebe to incinerate stockpiles held by the Marines, Army and Navy, totaling more than two million gallons PFOS-containing foam and waste.¹²

Sierra Club has serious concerns about the safety of hazardous waste incineration for PFAS fire fighting chemicals. We point out the Air Force itself is actively funding research into alternative methods for destroying these wastes. In 2017, the Air Force Small Business Innovation Research fund posted a solicitation for safer alternatives to incineration citing several key reasons why thermal treatment could fail.

These include:

- 1) Too little information about the temperature and handling requirements for optimal PFAS breakdown in incinerators,
- 2) The potential for incomplete incineration to emit hazardous PFAS chemicals back out in the environment and
- 3) The potential that partial breakdown forms of new, harmful chemicals that are damage human health or deplete the ozone layer.¹³

Military disposal of hazardous waste has been a contentious issue for decades. In the 1990s, the Sierra Club participated in a network of affected communities to compel the military to develop safer technologies to destroy stockpiles of chemical weapons instead of sending them to incinerators. Communities living adjacent to hazardous waste incinerators demand safer technologies be used that contain the waste and allow operators to test effluent before releasing waste into the environment. Unlike incinerators, these technologies offer immediate verification of the destruction efficiency. The military invested in developing safer technologies that should be adapted to destroy PFAS stockpiles and clean up contaminated sites.

The military should be held accountable for PFAS contamination at military bases and in surrounding communities. This includes quick action to end the use of fluorine-based fire fighting foams on bases, and a halt to contracts for high temperature incineration.

References:

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