

Department of Defense



Per- and Polyfluoroalkyl Substances (PFAS) Task Force

Progress Report

March 2020

I. Introduction

PFAS is a national issue that requires national solutions. PFAS is found in everyday consumer items – from nonstick cookware to water-resistant clothing. DoD’s use of PFAS started in the 1970s, with the introduction of aqueous film forming foam (AFFF) for fuel firefighting purposes. AFFF contains PFAS and may contain perfluorooctane sulfonate (PFOS) and, in some formulations, perfluorooctanoic acid (PFOA), two chemicals of the larger class of PFAS.

To support the Department’s commitment to the health and safety of our Service members, their families, the DoD civilian workforce, and the communities in which DoD serves, the Task Force has focused on three goals:

- Mitigating and eliminating the use of the current AFFF;
- Understanding the impacts of PFAS on human health; and
- Fulfilling our cleanup responsibility related to PFAS.

To achieve its goals and ensure a consistent and proactive approach to address PFAS across DoD, the Task Force identified specific actions within the following focus areas:

- Health aspects, including education for healthcare providers and patients;
- Cleanup standards and performance;
- Finding/funding an effective substitute firefighting alternative without PFAS;
- Interagency coordination/collaboration with other Federal agencies, such as the U.S. Environmental Protection Agency (EPA), on Administration-wide positions (e.g., science-supported standards for exposure and cleanup);
- Communications to Congress and the public, including communities surrounding affected bases, concerning PFAS issues and the Department’s efforts; and
- Other areas, including addressing PFAS overseas, disposal options, and treatment technologies.

The Task Force strategically prioritized the actions and is aggressively working to complete them by evaluating and establishing policy positions and reporting requirements, encouraging and accelerating research and development, and ensuring the DoD Components are addressing and communicating about PFAS in a consistent, open, and transparent matter.

As this document demonstrates, the Task Force has and will continue to provide the tools needed to address the effects of DoD’s PFAS releases, and to ensure that the Department protects the health of our Service members, their families, the DoD civilian workforce, and communities surrounding affected bases.

II. Mitigation and Elimination of the Use of the Current AFFF

DoD began using AFFF that contained PFOS and, in some formulations, PFOA, in the 1970s. DoD is one of many users of AFFF, with other major users including commercial airports, the oil and gas industry, and local fire departments. AFFF is mission critical because it quickly extinguishes petroleum-based fires, thus minimizing loss of life. To protect its Service members and prevent releases to the environment, DoD only uses AFFF to respond to emergency events and no longer uses it for land-based testing and training. The Department treats each use of AFFF as a spill response to limit environmental effects. Furthermore, DoD updated the Military Specification (MILSPEC) for AFFF to ensure that new supplies available for emergency firefighting responses do not contain detectable levels of PFOS or PFOA. For more information about the MILSPEC visit: [MIL-PRF-24385](#).

Currently, no fluorine-free foam, including foam that does not contain PFAS, meets the strict safety standards in the MILSPEC required to protect DoD Service members by rapidly extinguishing dangerous fuel fires. One of the Task Force's top priorities is finding an effective firefighting alternative that meets the life-saving performance standards of AFFF and does not have negative health or environmental effects. As part of this effort, the Task Force hosted a summit on "AFFF Alternatives: The 'Art of the Possible'" on November 15, 2019, where representatives from the research community, industry, academia, and international organizations discussed the challenges with finding a fluorine-free alternative to AFFF and potential research opportunities. The Department is investing over \$49 million through Fiscal Year (FY) 2025 in research, development, testing, and evaluation (RDT&E) in collaboration with academia and industry to identify alternative firefighting material and practices. To ensure the Department can continue these efforts, the Task Force assessed and confirmed that current and planned funding for RDT&E to find an acceptable fluorine-free alternative to current AFFF formulations is sufficient given the available investigator capacity. DoD's Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) are working to increase the world-wide investigator capacity through outreach efforts, technical workshops, and awarding relevant projects. For more information on SERDP and ESTCP visit: <https://www.serdp-estcp.org/>.

In planning for an AFFF replacement, as required in the FY 2020 National Defense Authorization Act (NDAA), the Congressional Budget Office (CBO) estimated that it would cost DoD \$35,000 per vehicle to retrofit to a new firefighting foam technology. However, DoD has learned from previous foam transitions that fully removing foams containing PFOS or PFOA from current systems will likely require replacement of almost every component of Aircraft Rescue and Firefighting (ARFF) vehicles. Therefore, DoD estimates the cost of retrofit efforts at nearly \$200,000 per vehicle, which adds \$600 million to the CBO estimate and is at least 30 percent of the cost to replace an ARFF vehicle. Based on DoD's estimate, ARFF vehicle replacements may be required to meet the NDAA requirement. Replacing DoD's fleet of

approximately 3,000 ARFF vehicles would cost \$4 to \$6 billion and may take over 18 years at current commercial production rates, assuming DoD could acquire 50 percent of current commercial production. However, commercial airports in the United States employ a fleet of ARFF vehicles more than twice the size of DoD's, which may impact availability and replacement timelines. DoD is currently researching methods to fully remove foams containing PFOS or PFOA from current systems without having to replace ARFF vehicles.

The Task Force is also evaluating the potential risks, including fatalities that would result from replacing AFFF with another material with lower performance standards. Accepting a replacement that takes longer to extinguish a fire or allows for reignition of a fire would not only decrease the opportunity for life-saving activities, but also puts the lives of emergency responders at risk. Additionally, the Task Force will evaluate the potential need for two separate MILSPECS for firefighting foam (i.e., one for installations and one for ships). The current single MILSPEC contains additional requirements for shipboard use that may not be necessary for fighting fires on installations.

The Task Force is collecting data to assess options for managing DoD's firefighting support to civil authorities at airports, when DoD is required to use an alternative firefighting foam, but the civil authorities may continue to use AFFF. The Task Force will also use this data to determine a path forward for managing AFFF use at these locations.

In addition to its efforts to find an effective firefighting alternative, the Task Force is focused on tracking DoD's use of AFFF. As such, the Task Force established a new reporting requirement to capture AFFF uses and spills when released to the environment. This will ensure leadership has greater visibility into how the Department uses AFFF responsibly to protect people and the environment.

III. Understanding the Impacts on Human Health

Addressing concerns with exposure to PFAS is at the core of the Department's commitment to the health and safety of our Service members, their families, the DoD civilian workforce, and the communities in which DoD serves. To this end, the Task Force is supporting and monitoring research efforts to better understand the potential health effects of PFAS exposure, and communicating this health risk information. Specifically, the Task Force has focused on educating DoD healthcare providers and their patients, monitoring PFAS exposure research and data, collaborating with the Department of Veterans Affairs (VA) and other Federal agencies, and preparing to offer annual testing of DoD firefighters' blood.

As part of educating healthcare providers and their patients on the health effects from PFAS exposure, the Task Force collaborated with the VA to discuss science-based knowledge on the health effects from PFAS to help address veterans' concerns about PFAS. The Task Force

also collaborated with DoD health agencies, the VA, and academia to identify health effects research; and will continue to collaborate with these entities by monitoring research activities, results, and publications. The Task Force has enhanced DoD healthcare provider knowledge of PFAS by directing them to health-related guidance and frequently asked questions published by the Agency for Toxic Substances and Disease Registry (ATSDR). The detailed information will inform the healthcare provider discussions with Service members, family members, and/or patients. In addition, the Task Force is currently working on a DoD fact sheet to inform the DoD firefighter community about PFAS exposure, possible health effects, and the planned annual blood testing for PFAS.

The Task Force reviewed the DoD Components' policies for drinking water testing, where DoD is the purveyor, to ensure they are collecting data on potential exposure to PFAS. The Task Force verified that the DoD Components are documenting the data in the Defense Occupational and Environmental Health Readiness System (DOEHRS), which is a centralized database of testing results. This effort will help the Office of the Secretary of Defense (OSD) oversee and ensure a protective on-base drinking water supply and quickly respond to questions. The Task Force is working on a policy that provides a consistent approach to future testing of on-base drinking water across DoD.

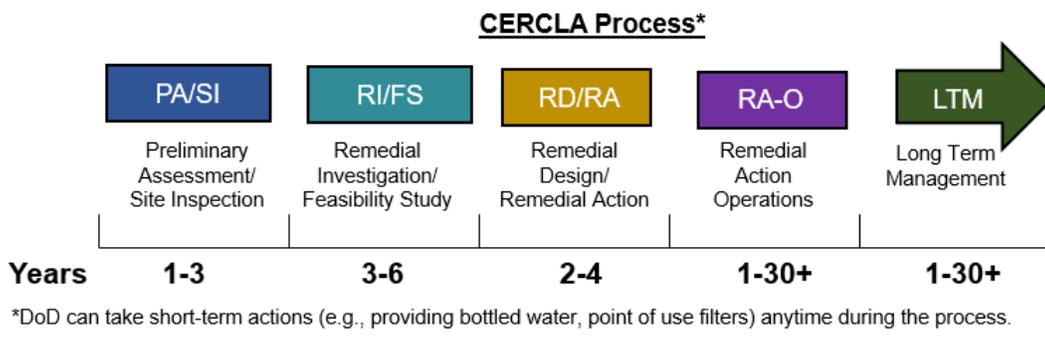
As part of its effort to understand potential health effects from PFAS exposure, the Task Force is monitoring and providing input on the Defense Health Agency's assessment of the health implications of PFAS exposure on Service members and sharing information with the VA, as required by the FY 2019 NDAA. The first phase of this assessment, a detailed review of the scientific literature on health effects, is complete and the remaining phases are scheduled to be complete in 2020. The Task Force is also developing a framework for annually testing DoD firefighters' blood to document and determine potential PFAS exposure, per the requirement in the FY 2020 NDAA for DoD to include blood testing during firefighters' annual physical exams by October 1, 2020.

Scientists are still studying the health effects of PFAS exposure. As directed by Congress the Department has provided \$30 million, and will send an additional \$10 million in FY 2020, to the ATSDR to conduct exposure assessments in the communities around eight current and former military installations and a multi-site health study. The results of these assessments and studies will be publicly available when complete. DoD is monitoring research activities related to the health effects of PFAS across the scientific community and will continue sharing information with healthcare providers, Service members, their families, and the DoD civilian workforce.

IV. Fulfilling our PFAS Cleanup Responsibility and Other Environmental Considerations

As DoD continues to progress through the cleanup process, the consolidated inventory of DoD and National Guard installations where the Department is performing an assessment of PFAS use or potential release has increased from 401 to 651 as of the end of FY 2019. These installations represent locations where PFAS may have been used or released and further investigations are being conducted. While our initial focus was on installations with potentially significant historic AFFF use, this is a more comprehensive estimate of installations where PFAS may have been used or released. The preponderance of this increase represents smaller installations across the Army and Army National Guard.

If there was drinking water exposure to PFOS/PFOA above EPA’s lifetime Health Advisory (HA) on or off base resulting from DoD activities, the Department proactively initiated short-term actions (e.g., providing bottled water, point of use filters) and long-term actions (e.g., municipal connections, filtration systems) under Federal cleanup law (in this case, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), also known as “Superfund”) to address the drinking water exposure. No one – on or off base – is drinking water above EPA’s HA level of 70 parts per trillion where DoD is the known source of PFOS and PFOA. The remaining cleanup efforts are primarily to address PFAS in groundwater. The DoD Components continue to conduct investigations and take action under CERCLA at installations where there are known or suspected releases of PFAS.



The Task Force recognizes the importance of addressing PFAS in a consistent manner across DoD. To that end, it evaluated and established policy positions and reporting requirements to track progress toward and ensure a proactive and consistent approach to investigating and cleaning up PFAS. As a result of the Task Force’s efforts, the Assistant Secretary of Defense for Sustainment issued the following:

- Clarifying technical guidance to ensure a consistent approach to investigating PFAS and using EPA’s toxicity values for PFOS, PFOA, and perfluorobutanesulfonic acid (PFBS) within the DoD cleanup program;¹
- A requirement for the DoD Components to report actual and planned obligations and estimated costs to investigate and clean up PFAS;
- A requirement for the DoD Components to report quarterly on cleanup progress and drinking water responses at installations with known or suspected PFAS releases; and
- Guidance on the use of analytical methods for analyzing PFAS concentrations in media other than drinking water.

These policies will ensure consistency across the DoD Components and help DoD track its PFAS cleanup progress and investments. Also, to ensure protection of human health and the environment in a manner focused on addressing highest risk sites first, the Task Force determined that the continued use of the long-standing risk-based framework to sequence sites with PFAS relative to non-PFAS sites in the DoD cleanup program was the best means to address all of DoD’s cleanup responsibilities. Building on the issuance of guidance on the use of analytical methods for analyzing PFAS concentrations in media other than drinking water, the Task Force is evaluating and will recommend guidance on other PFAS analytical methods. This will help ensure that DoD uses appropriate data to support sound decision making during PFAS investigations. The Task Force is evaluating whether to develop guidance on determining cleanup levels for media other than drinking water, such as soil, sediment, and surface water.

In addition to its initiatives related to cleanup standards and performance, the Task Force has focused on addressing other environmental considerations as they relate to PFAS. For example, the Task Force established a policy for the DoD Components to track and report state PFAS requirements in stormwater discharge permits at installations across DoD. The Task Force is also evaluating whether to develop guidance in the following areas:

- Disposal methods for media containing PFAS, such as soil and spent media (e.g., filters) within and outside the United States;
- Managing all discharges containing PFAS, including stormwater runoff and dewatering from construction activities; and
- Handling wastewater biosolids and sludge containing PFAS.

The Task Force is working on these efforts in coordination with other Federal agencies to ensure a consistent approach to this national issue.

The Task Force is also evaluating PFAS issues outside of the United States. To that end, the Task Force reviewed the Department’s current overseas environmental cleanup policy, DoD

¹ Although there are approximately 600 PFAS in commerce, currently only three – PFOS, PFOA, and PFBS – have established toxicity values that DoD can use to determine whether cleanup is needed under CERCLA.

Instruction (DoDI) 4715.08, “Remediation of Environmental Contamination Outside the United States,” which requires DoD to take prompt action on base to address substantial impacts to human health and safety due to DoD activities and to comply with international agreements. The Task Force determined that DoDI 4715.08 appropriately addresses PFAS cleanup. The Task Force also discussed the need to collect and track changes to country-specific requirements pertaining to PFAS that may need to be added to country specific Final Governing Standards (FGS). FGSs reconcile the requirements of applicable international agreements and applicable host-nation environmental standards. As part of this effort, the Task Force established a requirement for each country’s DoD Lead Environmental Components (LECs) to provide OSD with host-nation environmental standards and FGS language related to PFAS. OSD will request annual updates to ensure the Department has visibility over standards related to PFAS outside of the United States. The Task Force is evaluating whether a policy is needed requiring LECs to notify OSD as soon as host country standards are changed to include PFAS. In addition, the Task Force will explore potential options for addressing PFAS overseas.

The Task Force also supports efforts to transfer new technology for investigating and treating PFAS to the field. To avoid duplication and improve collaboration, the Task Force is working to establish a DoD clearinghouse for cleanup research and technology efforts.

V. Communication and Interagency Coordination

The Task Force recognizes the importance of achieving its goals in a transparent manner that promotes consistency not only within DoD but among all Federal agencies. To this end, the Task Force supports ongoing outreach activities that involve coordinating and collaborating with other Federal agencies and communicating to the public, Congress, and other stakeholders about the Department’s efforts to find an alternative to AFFF, understand and address the impacts to human health from PFAS, and clean up PFAS releases caused by past DoD activities. These outreach activities have included or will include:

- Developing and maintaining PFAS information and a list of frequently asked questions and answers;
- Providing materials to Installation Commanders to help them understand and communicate about PFAS issues on and off their installations to Service members, their families, and the communities nearby;
- Clarifying expectations for and requiring Installation Commanders to report local outreach efforts related to PFAS to ensure consistent and appropriate engagement with communities surrounding DoD installations and to gather community questions and/or concerns;
- Establishing a DoD PFAS website (<https://www.defense.gov/pfas/>) for PFAS-related information, including links to progress on research efforts to find an alternative to AFFF;

- Conducting media roundtables and other media engagements to provide updates on the Task Force’s progress;
- Exploring opportunities to engage with nongovernmental organizations, think tanks, and other groups interested in DoD’s efforts to address PFAS;
- Engaging with members of Congress and staff concerned with PFAS-related issues including briefings to these offices when requested; and
- Notifying Congress about Task Force media engagements and publications related to PFAS and Task Force activities; providing publications to congressional staff, including documents on the establishment and purpose of the Task Force, media roundtable transcripts, and the DoD PFAS website; and inviting congressional staff to a demonstration of commercially-available alternative foam.

To work toward a national solution to address PFAS, the Task Force coordinates and collaborates with other Federal agencies on PFAS, including EPA, the Department of Health and Human Services, the Office of Management and Budget, the Federal Aviation Administration, the U.S. Department of Agriculture, the National Aeronautics and Space Administration, the U.S. Department of Energy, the United States Geological Survey, the U.S. Coast Guard, and the U.S. Food and Drug Administration. These interagency efforts include coordinating on Administration-wide positions concerning proposed PFAS regulations; participating in research and development workshops, such as National Academy of Sciences workshops on PFAS; and monitoring and supporting other Federal agency regulatory and scientific activities. These efforts have resulted in improved collaboration on the Administration’s efforts to nationally and holistically address PFAS.

The Task Force has also coordinated and collaborated with other organizations including, but not limited to, the Environmental Council of the States; the National Governors Association; the National Conference of State Legislators; the National Association of Counties; the Association of State Drinking Water Administrators; the Association of State and Territorial Health Officials; the American Association of Airport Executives; the National League of Cities; and the Association of State and Territorial Solid Waste Management Officials. The Task Force will continue exploring opportunities to engage with stakeholders interested in DoD’s efforts to address PFAS.

The Task Force is supporting these ongoing outreach activities to ensure open and consistent coordination and communication inside and outside DoD on its efforts to address PFAS. Additionally, the DoD Components continue to engage with the public, Congress, and other stakeholders on site-specific PFAS matters.

VI. Conclusion

The Task Force has worked aggressively to address PFAS issues in a cohesive, consistent manner while coordinating and communicating with external stakeholders. As discussed in this document, the Task Force has made substantial progress toward understanding the Department's use of AFFF and researching fluorine-free alternatives to AFFF; monitoring and communicating information on the health effects of human exposure to PFAS; establishing policies and collecting data to track PFAS cleanup progress and costs; and supporting research and development efforts for all of these activities. The Task Force has also begun addressing the extensive new PFAS requirements for DoD in the FY 2020 NDAA.

As this document demonstrates, the Task Force will continue to identify and provide DoD with the tools needed to address the effects of its PFAS uses or potential releases, and to ensure that the Department continues to protect the health of our Service Members, their families, the DoD civilian workforce, and the communities in which DoD serves.