

# MOBILE PFAS REMOVAL SYSTEM TO SUPPORT WARFIGHTER AIRCRAFT AND CARRIERS

## PROJECT OVERVIEW

Per- and polyfluoroalkyl substances (PFAS) are considered highly persistent and toxic organic chemicals, which include perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). These chemicals are key ingredients in aqueous film forming foam (AFFF)—a mission critical product that saves lives and protects assets by promptly extinguishing petroleum-based fires. Because of decades of extensive use, residuals of AFFF are surfacing in soils, aquifers, and surface waters threatening ecosystems and their environments. Thus, this project aims to demonstrate / validate a mobile treatment system that may effectively remove PFAS chemicals from AFFF contaminated waters by precipitation via the use PerfluorAd. PerfluorAd is a novel liquid blend tailored to precipitate / flocculate PFAS chemicals from contaminated waters through a difference in electric charge.

## BENEFITS

A successful outcome of the present project will result in the treatment of AFFF contaminated waters to less than 70 parts per trillion (ppt) of combined PFOS and PFOA. Department of Defense (DOD) Installations will benefit by the transitioning of a mobile treatment system capable of achieving this recommended Environmental Protection Agency (EPA) lifetime health advisory (LHA) all while minimizing process media, generating less waste, and contributing to treatment cost savings when comparing to conventional treatment methods or incineration.

## PATH FORWARD

This project consists of two phases. In Phase I, 5-AFFF contaminated waters will undergo treatability studies to establish their physical / chemical properties and to determine the optimal PerfluorAd dosing capable of removing the majority of PFAS chemicals. In Phase II, a demonstration / validation of the mobile treatment system will take place at Naval Air Station (NAS) Whidbey Island with one of the AFFF contaminated waters studied in Phase I of this project.

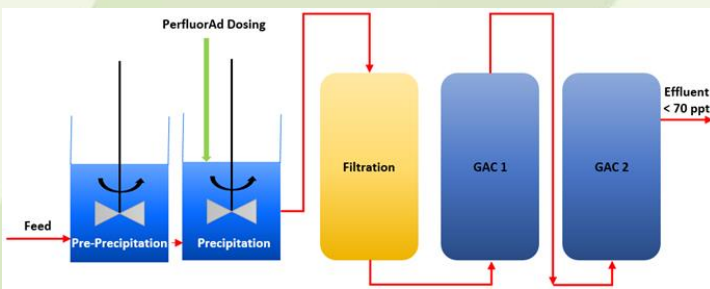


Figure 1. (Top) Mobile PFAS Removal System Schematic. (Middle & Bottom) German Mobile Treatment System.

### DoD Executive Agent

Office of the Assistant Secretary of the Army for Installations, Energy, and Environment

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### FOR FURTHER INFORMATION

National Defense Center for Energy and Environment  
<http://www.denix.osd.mil/ndcee/home>

Naval Facilities Engineering and Expeditionary Warfare Center  
[https://www.navfac.navy.mil/navfac\\_worldwide/specialty\\_centers/exwc.html](https://www.navfac.navy.mil/navfac_worldwide/specialty_centers/exwc.html)