

AN INNOVATIVE PLASMA TECHNOLOGY FOR TREATMENT OF PFAS-IMPACTED WATERS

PROJECT OVERVIEW

The objective of this NDCEE project is to demonstrate the operation of a “first-of-its-kind” Mobile Plasma Treatment System for the treatment of PFAS-impacted water at DoD fire training areas. The treatment trailer is equipped with enhanced-contact plasma reactors for the destruction of PFAS in water and water conveyance/sampling equipment for performance monitoring. The first prototype trailer was field-tested at Wright Patterson Air Force Base with a small treatment volume (~300 gal) and yielded promising results. The current demonstration/ validation project will increase treatment capacity and confirm effectiveness of the plasma system for a range of PFAS-impacted waters and site/operating conditions.

BENEFITS

The lack of available on-site treatment options for PFAS-impacted water directly affects mission-critical activities in all branches of the DoD. Many installations are storing or incinerating PFAS-impacted water, which can be incredibly costly. Benefits of the plasma treatment system include:

- Rapid destruction of PFAS and other contaminants (e.g., VOCs, 1,4-dioxane) within minutes.
- No chemical additions or production of residual waste.
- Significantly lower preliminary treatment costs than existing treatment alternatives (GAC) and incineration.
- Treatment of a variety of PFAS-impacted water sources such as investigation-derived waste, ion exchange resin regenerant, extracted groundwater and surface waters.

The Mobile Plasma Treatment System is “mission-ready” for smaller volumes of stored PFAS-impacted water and requires simple modifications to increase capacity.

PATH FORWARD

Findings from this project will offer guidance for future technology implementation at other DoD sites. Technology transition elements include project reports, conference presentations, publications, workshops and short courses.

DoD Executive Agent

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

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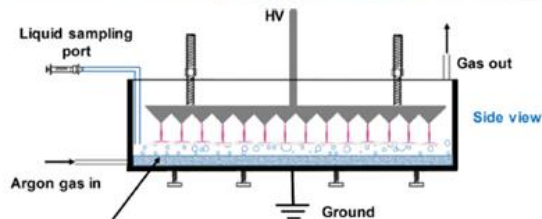
Mobile Plasma Treatment Trailer



Plasma Side of the Trailer

Sample Collection Side

Enhanced Contact Plasma Reactor



FOR FURTHER INFORMATION

National Defense Center for Energy and Environment

<https://denix.osd.mil/auth/ndcee/>

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