

Report on the Department of Defense's Provision of Water Alternatives to Communities Impacted by Per- and Polyfluoroalkyl Substances



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

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I. INTRODUCTION

House Report 117-397, pages 112, accompanying H.R. 7900 the National Defense Authorization Act for Fiscal Year (FY) 2023, requests the Secretary of Defense to provide a report outlining their plan to continue providing water alternatives to communities that have been determined to have levels of per- and polyfluoroalkyl substances (PFAS) above the U.S. Environmental Protection Agency's (EPA's) lifetime Health Advisories (HAs) released on June 15, 2022. The House Report requests (1) a list of installations that were previously classified as requiring "no further action" that will now need additional investigation; (2) a list of installations that have had previous perfluorooctane sulfonate (PFOS) and/or perfluorooctanoic acid (PFOA) test results above 0 but less than 70 parts per trillion (ppt) and the timeline and process by which those installations will be provided alternative water; (3) a description of additional guidance provided by the Department of Defense (DoD) to the military departments for updating processes and procedures in response to the four new PFAS-related HAs issued on June 15, 2022; (4) a description of the Department's community engagement plans for impacted defense communities; (5) a description of any additional resources the Department needs to address the needs of communities impacted by PFAS above EPA's new lifetime HAs; and (6) a description of testing methods and their associated levels of detection that are currently available to the Department.

The presence of PFAS in the environment is a national issue due to its wide-spread use in many industrial and consumer products. The Department recognizes the importance of this issue and is committed to addressing PFAS in a deliberative, holistic, and transparent manner. DoD's cleanup program follows the federal cleanup law (the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [CERCLA], also known as "Superfund") to address DoD releases of PFAS and determine the appropriate cleanup actions based on risk.

II. THE DEPARTMENT'S PROVISION OF WATER ALTERNATIVES TO COMMUNITIES IMPACTED BY PFAS

Through the end of the second quarter of FY 2023, DoD has identified 707 active military installations, Base Realignment and Closure locations, National Guard facilities, and Formerly Used Defense Sites properties where it is conducting or has completed an assessment of PFAS use or potential release. The Department has completed the preliminary assessment/site inspection phase at a total of 425 (60 percent) of these locations and determined that 103 require no further action. In addition, the Department is monitoring and providing alternative water in the communities surrounding 53 installations where DoD has identified levels of PFOS and PFOA from DoD activities above 70 ppt in off-base drinking water.

Installations that were previously classified as requiring "no further action" that will now need additional investigation

In June 2022, EPA announced updated interim lifetime drinking water HAs for PFOS at 0.02 ppt and PFOA at 0.004 ppt. These levels for PFOS and PFOA are a significant reduction from the May 2016 HAs of 70 ppt. As EPA stated, these levels are non-regulatory, non-enforceable, and currently below the levels of both detection (determining whether or not a

substance is present) and quantitation (the ability to reliably determine how much of a substance is present) of 4 ppt. Currently, DoD is not conducting additional investigations based on the EPA interim HAs released on June 15, 2022, and is instead focused on preparing for EPA's nationwide drinking water standard for PFAS.

On March 14, 2023, EPA proposed a drinking water maximum contaminant level regulation for six PFAS, including PFOS and PFOA. The proposed drinking water levels for PFOS and PFOA are lower than 70 ppt, but much higher than the interim HAs. DoD respects and values the public comment process on this proposed nationwide drinking water rule and looks forward to the clarity that a final regulatory drinking water standard for PFAS will provide. In anticipation of the final standard that EPA expects to publish by the end of 2023, the Department is assessing what actions DoD can take to be prepared to incorporate EPA's final regulatory standard into our current cleanup process, such as reviewing our existing data and conducting additional sampling where necessary.

In addition, DoD continues to use EPA Regional Screening Levels to determine when further investigation of PFAS in groundwater is needed under CERCLA. EPA updated the screening levels for PFOS and PFOA in May 2022 and DoD is reassessing prior No Further Action determinations based on these updated screening levels. These updated screening levels, while not cleanup or alternate drinking water levels, are conservative and incorporate detection method capabilities (e.g., PFOS screening level of 4 ppt). For further information on these EPA screening levels, see <https://www.epa.gov/risk/regional-screening-levels-rsls>. We remain committed to fulfilling our cleanup responsibilities, operating within the law and authorities provided by the federal cleanup law, and clearly communicating and engaging with communities.

A list of installations that have had previous PFOS and/or PFOA test results above 0 but less than 70 ppt and the timeline and process by which those installations will be provided alternative water

Through the end of the second quarter of FY 2023, the Department has identified 53 installations where the test results for PFOS and PFOA from DoD activities were above 70 ppt in off-base drinking water. The Department provided alternative water to the communities surrounding all 53 installations. These installations are provided in Appendix A. To prepare to implement EPA's final national drinking water standard, the Department is currently reviewing existing data and taking samples to identify additional locations where DoD may need to provide alternative water, once the drinking water standard is final.

A description of additional guidance provided by DoD to the military departments for updating processes and procedures in response to the four new PFAS-related health advisories issued on June 15, 2022

DoD did not provide additional guidance to the Military Departments for updating processes and procedures in response to the four new PFAS-related health advisories issued on June 15, 2022. As EPA stated, these levels are non-regulatory, non-enforceable, and currently below the levels of both detection and quantitation of 4 ppt. The Department looks forward to the clarity that a nationwide regulatory standard for PFAS in drinking water will provide and will

issue guidance to the Military Departments at that time, as appropriate. In addition, DoD continues to provide PFAS groundwater cleanup investigation guidance to the Military Departments and is updating this guidance based on new Regional Screening Levels issued by EPA.

A description of the Department's community engagement plans for impacted defense communities

DoD recognizes community concerns about the impacts of PFAS on human health and the environment. The Department is striving to continuously improve communication and dialogue with impacted communities. To that end, DoD is developing a cohesive and collaborative approach to cleanup communication and community dialogue across DoD. The Office of the Deputy Assistant Secretary of Defense for Environment and Energy Resilience (ODASD(E&ER)) is working in coordination with the Military Departments on a multi-year effort to enhance communication and outreach with stakeholders including Congress, the public, and communities across the country. This initiative is designed to enhance, earn, or restore public trust, improve transparency about DoD's cleanup efforts, engage communities affected by DoD's cleanup activities, and illustrate DoD's accomplishments within its environmental cleanup portfolio. The ODASD(E&ER) is working with environmental cleanup portfolio managers, public affairs professionals, and technical staff across the Services to identify communication needs, best practices, and tools that will support and improve communication and dialogue with Congress and the communities in which DoD serves.

A description of any additional resources the Department needs to address the needs of communities impacted by PFAS above EPA's new lifetime HAs

At this time the Department has the resources needed to address the needs of communities impacted by PFAS from DoD activities above EPA's new lifetime HAs. DoD is evaluating its efforts to address PFAS in drinking water and what actions we can take to be prepared to incorporate EPA's final drinking water regulation, which is anticipated by the end of this calendar year, into our cleanup process.

A description of testing methods and their associated levels of detection that are currently available to the Department

Currently there are two EPA analytical methods for the quantification of various individual PFAS in drinking water media: EPA Method 533 and EPA Method 537.1. EPA Method 533 quantifies 25 individual PFAS while EPA Method 537.1 quantifies 18. Both methods use the same sample preparation technique, a technique called solid-phase extraction; however, they are not identical. The preparation procedure dictated by each method has been optimized to extract the PFAS listed in the method. Therefore, while there is overlap in each method's analyte list, they are not identical or interchangeable, meaning one method cannot be used to quantify all the analytes included in both methods. The analytical procedure included in each of these two methods uses the same analytical instrumentation, liquid chromatography tandem mass spectrometry (LC-MS/MS); however, there are differences in ancillary equipment and instrument parameters, again, due to this optimization.

Each method provides the lowest concentration minimum reporting limits (LCMRLs) that were achieved by a single laboratory during validation of the method. These LCMRLs are provided in Appendix B. The LCMRL is defined by these methods as “the lowest concentration for which the future recovery is predicted to fall between 50 and 150% with high confidence (99%).” Each method clearly states that these LCMRLs do not indicate what is achievable by other laboratories performing these methods, as they state, “the values that a laboratory can obtain are dependent on the design and capability of the instrumentation used.” Each method goes on to state that laboratories using these methods are not required to determine their LCMRLs, but the laboratories must demonstrate that they are able to meet the minimum reporting level (MRL) for each analyte per the procedures described in the methods, but do not assign a value to the MRLs. The methods and MRLs required under the Fifth Unregulated Contaminant Monitoring Rule (UCMR5) are also provided in Appendix B as reference for the MRLs laboratories need to be able to achieve.

III. CONCLUSION

The Department has invested significant resources and effort into DoD’s cleanup responsibilities related to PFAS and expanding PFAS-related public outreach. DoD is taking action under CERCLA to address PFAS releases from DoD activities as quickly as possible. DoD will continue to address PFOS and PFOA in drinking water above 70 ppt and is preparing to implement EPA’s final national drinking water standard in our cleanup program. The Department will plan and program for these requirements as they are defined to ensure that DoD continues to protect the health of its service members, their families, the DoD civilian workforce, and the communities in which DoD serves.

Appendix A: Installations Where Off-Base Public and/or Private Drinking Water Systems Tested Above 70 ppt for Perfluorooctane Sulfonate and/or Perfluorooctanoic Acid and Alternative Water is Being Provided

As discussed in Section II, the list below contains those locations where DoD is monitoring and providing alternative water in communities surrounding the 53 installations that have had previous PFOS and PFOA test results in drinking water above 70 ppt.

Installations Where Off-base Public and/or Private Drinking Water Systems Tested Above 70 ppt		
DoD Component	State/Territory	Installation Name
Army	Kansas	Fort Riley
Army	Massachusetts	Devens
Army	Michigan	Camp Grayling Joint Maneuver Training Center
Army	Pennsylvania	N Penn
Army	Virginia	Vint Hill Farms
Army	Washington	Yakima Training Center
Navy	California	BARSTOW CA MCLB
Navy	Florida	SAUFLEY FLD FL NAS
Navy	Florida	WHITING FLD FL NAS/OLF BARIN/OLF WOLF
Navy	Maine	NCTAMSLANT DET CUTLER
Navy	New Jersey	NMC DET EARLE
Navy	North Carolina	CHERRY POINT NC MCAS - OLF Atlantic
Navy	Pennsylvania	MECHANICSBURG PA NAVICP
Navy	Pennsylvania	Warminster
Navy	Pennsylvania	Willow Grove
Navy	Virginia	OCEANA VA NAS NALF FENTRESS
Navy	Washington	BREMERTON WA NAVAL BASE (NAVAL BASE KITSAP BANGOR)
Navy	Washington	WHIDBEY IS WA NAS/ OLF COUPEVILLE
Air Force	Alaska	Eielson AFB
Air Force	Arizona	Luke AFB
Air Force	Arizona	Morris (Tucson International Airport)
Air Force	Arkansas	Little Rock AFB
Air Force	California	Former Castle AFB
Air Force	California	Former George AFB
Air Force	California	Former March AFB
Air Force	California	Former Mather AFB
Air Force	California	Travis AFB
Air Force	Colorado	Peterson AFB
Air Force	Delaware	Dover AFB
Air Force	Florida	Homestead ARB
Air Force	Florida	Hurlburt Field
Air Force	Illinois	Scott AFB
Air Force	Kansas	McConnell AFB

Appendix A: Installations Where Off-Base Public and/or Private Drinking Water Systems Tested Above 70 ppt for Perfluorooctane Sulfonate and/or Perfluorooctanoic Acid and Alternative Water is Being Provided

Installations Where Off-base Public and/or Private Drinking Water Systems Tested Above 70 ppt		
DoD Component	State/Territory	Installation Name
Air Force	Massachusetts	Barnes Municipal
Air Force	Massachusetts	Otis ANG (Joint Base Cape Cod -Massachusetts Military Reservation)
Air Force	Michigan	Former KI Sawyer AFB
Air Force	Michigan	Former Wurtsmith AFB
Air Force	Montana	Great Falls International Airport
Air Force	New Hampshire	Former Pease AFB
Air Force	New Jersey	Joint Base McGuire-Dix-Lakehurst
Air Force	New Mexico	Cannon AFB
Air Force	New York	Former Plattsburgh AFB
Air Force	New York	Francis S. Gabreski
Air Force	Ohio	Toledo Express ANGB
Air Force	Oklahoma	Tinker AFB
Air Force	Pennsylvania	Biddle ANGB (formerly Horsham/Willow Grove ANG)
Air Force	South Carolina	Shaw AFB
Air Force	South Dakota	Ellsworth AFB
Air Force	Texas	Former Reese AFB
Air Force	Texas	Goodfellow AFB
Air Force	Texas	Joint Base San Antonio - Lackland, Randolph, Ft Sam Houston, Camp Bullis
Air Force	Washington	Fairchild AFB
Air Force	West Virginia	EWVRA Shepherd Field (Martinsburg)

Appendix B: Levels of Detection for U.S. Environmental Protection Agency Analytical Methods for Per- and Polyfluoroalkyl Substances in Drinking Water

Analyte	Abbreviation	Chemical Abstract Services Registry Number	Method 533 LCMRL ¹ (ng/L)	Method 537.1 LCMRL ¹ (ng/L)	UCMR5 Required Method	UCMR5 MRL ² (ng/L)
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9	1.6	1.5	EPA Method 533	5.0
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1	1.4	1.8	EPA Method 533	2.0
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4	3.4	0.55	EPA Method 533	3.0
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6	3.7	4.3	EPA Method 533	5.0
Perfluorobutanesulfonic acid	PFBS	375-73-5	3.5	6.3	EPA Method 533	3.0
Perfluorodecanoic acid	PFDA	335-76-2	2.3	3.3	EPA Method 533	3.0
Perfluorododecanoic acid	PFDoA	307-55-1	2.2	1.3	EPA Method 533	3.0
Perfluoroheptanoic acid	PFHpA	375-85-9	2.6	0.63	EPA Method 533	3.0
Perfluorohexanoic acid	PFHxA	307-24-4	5.3	1.7	EPA Method 533	3.0
Perfluorohexanesulfonic acid	PFHxS	355-46-4	3.7	2.4	EPA Method 533	3.0
Perfluorononanoic acid	PFNA	375-95-1	4.8	0.83	EPA Method 533	4.0
Perfluorooctanoic acid	PFOA	335-67-1	3.4	0.82	EPA Method 533	4.0
Perfluorooctanesulfonic acid	PFOS	1763-23-1	4.4	2.7	EPA Method 533	4.0
Perfluoroundecanoic acid	PFUnA	2058-94-8	2.7	5.2	EPA Method 533	2.0
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4	4.7	NA	EPA Method 533	3.0
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2	14	NA	EPA Method 533	5.0
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4	9.1	NA	EPA Method 533	5.0
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6	16	NA	EPA Method 533	20.0
Perfluorobutanoic acid	PFBA	375-22-4	13	NA	EPA Method 533	5.0
Perfluoro(2-ethoxyethane) sulfonic acid	PFEESA	113507-82-7	2.6	NA	EPA Method 533	3.0
Perfluoroheptanesulfonic acid	PFHpS	375-92-8	5.1	NA	EPA Method 533	3.0
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5	3.7	NA	EPA Method 533	3.0
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1	3.8	NA	EPA Method 533	4.0
Perfluoropentanoic acid	PFPeA	2706-90-3	3.9	NA	EPA Method 533	3.0
Perfluoropentanesulfonic acid	PFPeS	2706-91-4	6.3	NA	EPA Method 533	4.0
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6	NA	4.8	EPA Method 537.1	5.0
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9	NA	4.3	EPA Method 537.1	6.0
Perfluorotetradecanoic acid	PFTA	376-06-7	NA	1.2	EPA Method 537.1	8.0
Perfluorotridecanoic acid	PFTTrDA	72629-94-8	NA	0.53	EPA Method 537.1	7.0