



# **Addressing Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)**

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The estimated cost of this report or study for the Department of Defense is approximately \$44,000.00. This includes \$200.00 in expenses and \$44,000.00 in DoD labor.

Cost estimate generated on date, November 21, 2017 RefID: 4-0A57E2B



# Purpose

- **Official Response to House Report 115-200:**

Polyfluoroalkyl Substances, page 118

“...The briefing should provide the following:

- (1) the locations on or in proximity to current and former military installations where the Department has conducted testing of military, public, and private drinking water systems and a summary of the results of those tests where PFOS/PFOA levels were detected in excess of the LHA levels;
- (2) the locations on or in proximity to current and former military installations where the Department has conducted groundwater testing where PFOS/PFOA may have been released and a summary of the results of those tests where PFOS/PFOA levels were detected in excess of the LHA levels;
- (3) short-term mitigations that have been funded and provided by the Department, both on military installations and in the surrounding communities, where PFOS/PFOA levels were detected in excess of the LHA levels;
- (4) the process and timeline for identifying and resourcing long-term remediation on military installations or in the surrounding communities where PFOS/PFOA levels were detected in excess of the LHA levels; and
- (5) research conducted in pursuit of less environmentally harmful AFFF blends containing less or no PFOS/PFOA.”



# Addressing PFOS and PFOA

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- **PFOS/PFOA Background**
- **Programmatic approach to identify, investigate, and respond to the presence of PFOS and PFOA at military bases**
  - Drinking Water
  - Groundwater
- **Programmatic approach for the removal and replacement of PFOS and PFOA in Aqueous Film Forming Foam (AFFF)**



# PFOS/PFOA Background

- **PFOS/PFOA are part of a class of man-made chemicals used in many industrial and consumer products to make the products resist heat, stains, water, and grease**
  - Examples include: Teflon<sup>®</sup> cookware, waterproofing fabric and coating on fast food wrappers
- **Limited human studies show PFOS/PFOA may be associated with developmental delays in fetuses & children; decreased fertility; increased cholesterol; changes to the immune system; increased uric acid levels; changes in liver enzymes; and prostate, kidney, and testicular cancer**
- **In the 1970's DoD began using a firefighting foam (aqueous film forming foam –AFFF), which contained PFOS to extinguish petroleum fires**
  - Some AFFF formulations may also contain PFOA
- **In May 2000 the primary American manufacturers began phasing out the production of PFOS/PFOA related products**



## PFOS/PFOA Background (continued)

- **In 2009, the U.S. Environmental Protection Agency (EPA) Office of Water established a provisional health advisory (PHA) for PFOS at 200 parts per trillion (ppt) and PFOA at 400 ppt**
  - As of 2012, EPA has published 214 health advisories
- **EPA included PFOS/PFOA for monitoring under the Safe Drinking Water Act (SDWA) Third Unregulated Contaminant Monitoring Rule (UCMR), which required sampling between 2013-2015**
- **In February 2014, EPA provided the draft health assessment for peer review**
  - The health assessment provides discussion of the human health risks used to develop the health advisory level
  - During the public peer review process DoD provided comments. EPA did not respond to our comments
  - Also, DoD was not provided the Science Advisory Board peer review before EPA published the Lifetime Health Advisory (LHA)



# PFOS/PFOA Background

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- **On May 19, 2016, EPA issued new Lifetime Health Advisories for PFOS and PFOA concentrations at 70 ppt (individually or combined)**
  - EPA LHA levels are only guidance under the SDWA and are not required or enforceable drinking water standards
  - Health advisory information is used to determine risk in the cleanup of water under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, aka Superfund)



# Drinking Water on Our Installations

- **Completed UCMR3 testing and reporting December 2015**
  - 63 DoD drinking water systems required testing
  - Only one system detected levels above the EPA PHA – Wright Patterson AFB had one sample at 235ppt
- **As a concerned consumer, in June 2016 ASD(EI&E) directed the Military Departments to test for PFOS/PFOA where DoD supplies drinking water**
  - Completed sampling and testing of all 524 DoD drinking water systems for PFOS/PFOA
- **DoD has identified 24 drinking water systems, where DoD is the water supplier, which tested above the LHA**
  - DoD is following the EPA advisory recommended actions to include taking wells off line and providing alternative drinking water
  - These actions break the exposure pathway
- **Where DoD is not the drinking water supplier, installations are encouraged to ask if their drinking water suppliers have tested the drinking water and are the results below the EPA LHAs**
  - Identified 12 systems where DoD is not the supplier that tested above the LHA level



# Drinking Water off DoD Installations

- **The Components also sampled private drinking water wells if there was a suspected or known release that migrated off-base**
- **DoD is working with the Communities and private individuals to break the exposure pathway**
- **DoD off-base testing as of August 2017:**
  - 2,445 off-base Public and Private drinking water systems tested
  - 564 public or private drinking water systems tested above the EPA LHA level
- **The accompanying spreadsheets provide:**
  - the location of military, public and private drinking water systems
  - test results
  - the short- and long-term actions to address results that were above the EPA LHA level
  - the planned and completed actions for the wells with results above the EPA LHA level





# Groundwater Sampling

- **DoD follows a comprehensive approach to identify installations where DoD stored and/or used AFFF and suspect a release is impacting drinking water**
  - As of August 2017, DoD identified 401 active and BRAC installations in the United States with at least one area where there is a known or suspected release of PFOS/PFOA
- **DoD is following the CERCLA process to address these suspected releases**
  - First step is to identify the source(s) of a known or suspected release
  - Then identify if there is an exposure through drinking water
  - If there is exposure, DoD priority is to cut off drinking water exposure
  - Once exposure pathway is broken, the site is prioritized and will follow the CERCLA process to fully investigate the release and determine the appropriate cleanup actions based on risk
- **The DoD Components are conducting additional investigations, which include sampling groundwater**



# Groundwater Sampling

Component	Total Installations with known or suspected release of PFOS/PFOA (as of August 31, 2017)	Number of Installations Sampled where results exceeded EPA LHA (as of August 31, 2017)	Total number of groundwater wells sampled	Number of groundwater wells that tested above the EPA LHA
Army	64	9	258	104
Navy/USMC	127	40	1,368	784
Air Force	203	39	1,022	719
DLA	7	2	20	14
Total	401	90	2,668	1,621



# AFFF Replacement

- **ASD(EI&E) issued a policy in January 2016 requiring the Military Departments to:**
  - Issue Service-specific risk management procedures to prevent uncontrolled land-based AFFF releases during maintenance, testing, and training activities
  - Remove and properly dispose of PFOS-based AFFF from the local supplies for non-shipboard use where practical
- **Each of the Military Departments is taking actions to remove the AFFF containing PFOS from the supply system**
  - AF funded removal of AFFF from all fire trucks and crash response vehicles in FY 2016
- **DLA is developing new stock numbers for PFOS-free foam**
- **SERDP Statement of Need issued in October 2016 on fluorine-free foam**
  - Three Research and Development projects initiated
    - Fluorine-free Aqueous Film Forming Foam, John Payne, National Foam
    - Fluorine-free Foams with Oleophobic Surfactants and Additives for Effective Pool Fire Suppression, Ramagopal Ananth, Naval Research Laboratory
    - Novel Fluorine-free Replacement for Aqueous Film Forming Foam, Joseph Tsang, NAVAIR



# PFOS/PFOA Initiatives

- **Conducted fate, transport, effects, and remediation research and demonstrations**
- **Held PFAS workshop in May 2017 (<https://www.serdp-estcp.org/Featured-Initiatives/Per-and-Polyfluoroalkyl-Substances-PFASs/2017-Workshop-Report-on-Per-and-Polyfluoroalkyl-Substances>)**
- **SERDP released two Statements of Need for FY 2018, and is initiating supplemental FY 2018 Statements of Need**
- **Participating on the Interstate Technology and Regulatory Council (ITRC) project to review and summarize the currently available Perfluoroalkyl Substances (PFAS) information**
  - ITRC technical team is comprised of members representing Federal and State regulators, Federal agencies, industry, and community stakeholders
  - The ITRC document will provide a unified summary of the state of the science to aid in the selection of appropriate responses to environmental releases of PFAS



# PFOS/PFOA Challenges

- **Without a EPA cleanup standard we cannot capture our requirements**
  - Cleanup standard -- Lifetime Health Advisory (LHA) vs Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) risk assessment
- **Responding to state laws and standards**
- **PFAS exposure assessment and health study – Coordinating with ATSDR on the design and how we will work together throughout the process**
- **PFOS/PFOA versus Perfluoroalkyl Substances (PFAS) versus Perfluorinated Compounds (PFCs)**
- **EPA must go through the process to establish a Maximum Contaminant Level (MCL) under the Safe Drinking Water Act**
- **Disposal of contaminated groundwater and used granulated activated carbon (GAC)**
- **Insufficient time to program for requirements**

DoD remains committed to protecting human health and the environment



## Conclusion

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- **DoD's priority is to address PFOS/PFOA to protect personnel living and working on our installations and the surrounding communities that we have impacted**
- **Military Departments have made great strides to ensure safe drinking water for our installations**
- **We are addressing DoD's cleanup responsibility**
- **Initiated removal of AFFF with PFOS from the supply chain**



# References



# Applicable Policies

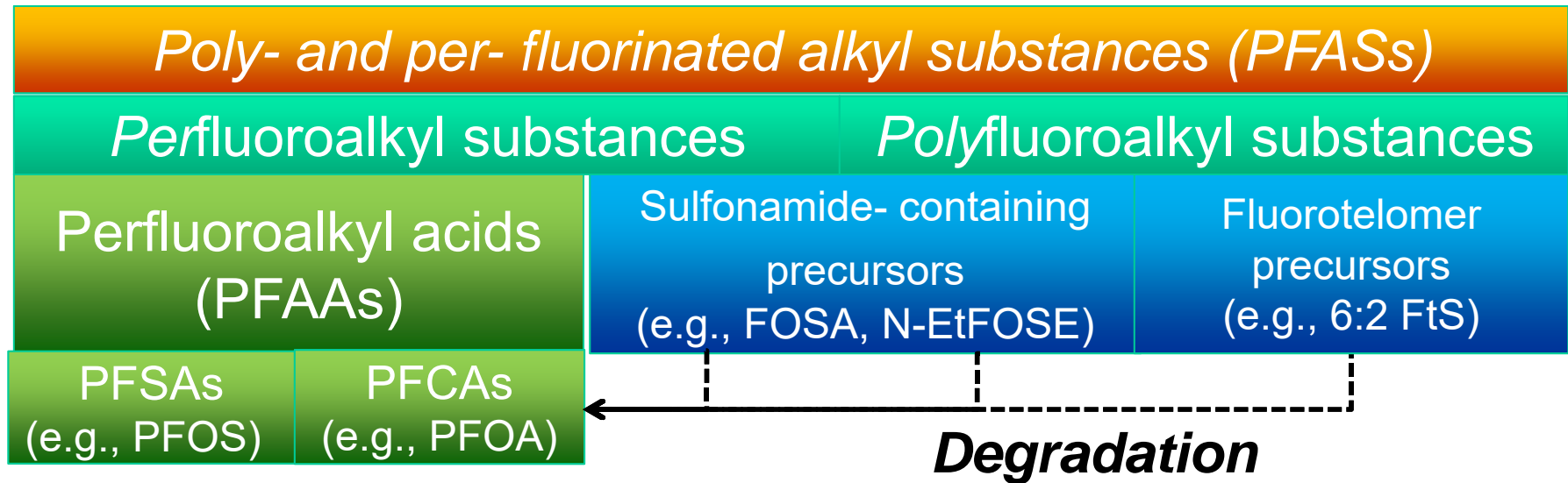
- **DoD Instruction 4715.06, “Environmental Compliance in the United States,” May 4, 2015**
- **DoD Instruction 4715.07, “Defense Environmental Restoration Program,” May 21, 2013**
- **DoD Instruction 4715.18, “Emerging Contaminants (ECs),” June 11, 2009**
- **DoD Manual 4715.20, “Defense Environmental Restoration Program (DERP) Management,” March 9, 2012**
- **ASD(EI&E) Memorandum, “Testing DoD Drinking Water for Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA),” June 10, 2016**
- **Emerging Contaminant Governance Council Meeting Results January 28, 2016**

These are consistent with CERCLA, NCP, DERP Statute (10 U.S.C. 2701), and SDWA





# Alphabet Soup



## Acronyms

- Perfluorinated carboxylic acids (PFCAs)
- Perfluorinated sulfonic acids (PFASs)
- Perfluorooctanoic acid (PFOA)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluorooctane sulfonamide (FOSA)
- 2-N-Ethyl-perfluoro-1-octanesulfamido ethanol (N-EtFOSE)
- Fluorotelomer sulfonate (FtS)

**Source:** Buck et al., 2011; Houtz, 2013

**DoD Component Summary  
Number of Installations and Drinking Water Systems Tested for  
Perfluorooctane Sulfonate (PFOS) Perfluorooctanoic Acid (PFOA)**

Summary of DoD Drinking Water Systems							
DoD Component	Number of Installations in US/Territories/ Overseas <sup>1</sup>	Number of DoD Drinking Water Systems for DoD Installations		Number of DoD Drinking Water Systems Tested by Either DoD or the non-DoD Purveyor		Number of DoD Drinking Water Systems Tested Where PFOS/PFOA > EPA LHA <sup>3</sup>	
		DoD Purveyor	Non-DoD Purveyor	DoD Purveyor	Non-DoD Purveyor <sup>2</sup>	DoD Purveyor	Non-DoD Purveyor
<b>Army</b>	2,905	255	2,738	255	1,589	12	4
<b>Navy</b>	108	100	236	100	236	5	1
<b>USMC</b>	68	28	52	28	52	1	2
<b>Air Force</b>	177	140	134	140	134	6	5
<b>DLA</b>	8	1	7	1	7	0	0
<b>DoD Totals</b>	<b>3,266</b>	<b>524</b>	<b>3,167</b>	<b>524</b>	<b>2,018</b>	<b>24</b>	<b>12</b>

**Footnotes:**

1: Includes Guard and Reserve facilities.

2: Non-DoD purveyor tested most of these systems so far as required under the EPA's Unregulated Contaminant Monitoring Rule 3 or per request from DoD. For systems not tested, the DoD Components are assessing on a case-by-case basis to determine if the systems may be impacted and needs testing.

3: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).

The information included in the table above is current as of August 31, 2017.

ARMY

**Summary of PFOS/PFOA Testing of Drinking Water Systems for DoD Installations - ARMY**

Summary of Testing for DoD Drinking Water Systems and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>															
DoD Component	Installation	State/Territory/Overseas Location	DoD Purveyor Drinking Water Systems					Non-DoD Purveyor Drinking Water Systems							
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA			
Army	81st RSC: E. Earle Rives AFRC	North Carolina									1	1	<40-90	PFOS per 2014 Consumer Confidence Report. The results reported were the range of PFOS/PFOA added together. The public water system did not report exceedances due to compliance averaging of all test results.	
Army	99th RSC Martinsburg Memorial USARC	West Virginia									1	1	0-79/0-71	The results reported were the range of PFOS/PFOA in 2014, and the public water system is not reporting exceedances to users due to compliance averaging of all test results.	
Army	Fort Hunter Liggett	California	1	1	PFOS = 120	Initial & confirmatory sampling conducted throughout the water system (Nov 16-Feb 17). One well at Fort Hunter Liggett exceeded the LHA for PFOS and has been taken offline. Garrison anticipates having enough volume with 3 operational wells & presumes no need to move forward with additional mitigation and/or GAC treatment for drinking water. Consumer notification conducted 02 Mar 17. Implemented recurring sampling/analysis.	Preliminary Assessment (PA) and/or Site Inspection (SI) - Q1 FY18								
Army	Ft. Leavenworth	Kansas									1	1	PFOA + PFOS combined = 97-649	American Water owns this system with the wells located on Army property. Two of the system wells were above the LHA and taken off-line. The consumer notification was conducted 06 Mar 17. The remaining wells support the installation current water needs. Army is exploring future options, that includes finding another ground water source, adding GAC, or connecting to local municipality.	Contract award to study new source well - late Sep 17. Preliminary Assessment (PA) and/or Site Inspection (SI) - Q1 FY18

**Summary of PFOS/PFOA Testing of Drinking Water Systems for DoD Installations - ARMY**

Summary of Testing for DoD Drinking Water Systems and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>												
DoD Component	Installation	State/Territory/Overseas Location	DoD Purveyor Drinking Water Systems					Non-DoD Purveyor Drinking Water Systems				
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
Army	JB Lewis-McChord: Fort Lewis Cantonment	Washington	4	4	Golf Course: PFOA + PFOS combined = 76-78 JBLM/Main North: PFOA + PFOS combined = 81-87 JBLM Range 17: PFOA + PFOS combined = 72-88 McChord Field: PFOA + PFOS combined = 76-250	Initial, confirmatory and subsequent sampling conducted at multiple systems/wells (Jul 16-Apr 17). Wells exceeding the LHA taken off line. The remaining wells are being used to supply water until a treatment system can be installed. USACE contract working to provide GAC treatment at 5 sites: North Well, South Well, East Well, Housing Well #2, Golf Course Well #22. Consumer notification conducted 02 Mar 17. Implemented recurring sampling/analysis.	Award contract to install GAC treatment units at 5 sites: North Well, South Well, East Well, Housing Well #2, Golf Course Well #22 - late Sep 17. Preliminary Assessment (PA) and/or Site Inspection (SI) - Q1 FY18					
Army	Soto Cano AB, HN	Honduras	1	1	PFOA + PFOS combined = 72.5-82.9	Initial, confirmatory and subsequent sampling conducted at multiple wells (Dec 16-Feb 17). Bottled water is routinely used throughout the installation, except at DFAC (for ice, coffee, tea, etc.); larger carbon filter installed to accommodate the flow rate servicing DFAC; subsequent confirmation sample indicated PFOA/PFOS <LHA at DFAC prep sink; except at DFAC, bottled water will remain the norm for consumption. Implemented recurring sampling/analysis. Consumer notification conducted 09 Mar 17. Implemented recurring sampling/analysis.						
Army	USAG Daegu, KR Camp Carroll	Korea	1	1	PFOA + PFOS combined = 76-1,066	Initial, confirmatory and subsequent sampling conducted at multiple wells (Nov 16-Feb 17). Individual system wells with results above the LHA taken off line; currently providing water from wells that have test results below the LHA. USACE contract awarded 20 Mar 17 to install GAC treatment. Consumer notification conducted 07 Mar 17. Implemented recurring sampling/analysis.	Completion of installation GAC treatment system(s)					

**Summary of PFOS/PFOA Testing of Drinking Water Systems for DoD Installations - ARMY**

Summary of Testing for DoD Drinking Water Systems and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>													
DoD Component	Installation	State/Territory/Overseas Location	DoD Purveyor Drinking Water Systems					Non-DoD Purveyor Drinking Water Systems					
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	
Army	USAG Daegu, KR Camp Walker	Korea	1	1	PFOA + PFOS combined = 91-789	Initial, confirmatory and subsequent sampling conducted at multiple wells (Nov 16-Feb 17). System wells with results above the LHA taken off line; currently providing water from local municipality (test results below LHA - PFOA + PFOS combined = 10). USACE contract awarded 20 Mar 17 to install GAC treatment. Consumer notification conducted 07 Mar 17. Implemented recurring sampling/analysis.	Completion of installation GAC treatment system(s)						
Army	USAG Red Cloud, KR: Camp Red Cloud	Korea	1	1	PFOA + PFOS combined = 171-466	Initial, confirmatory and subsequent sampling conducted at multiple wells (Nov 16-Jan 17). Entire system taken off line; initially switching to municipal water. After conducting additional sampling, 3 wells indicated PFOA/PFOS results below the LHA. Because the camp is scheduled for closure within the next 18 months, the solution is to use the wells producing water below LHA supplemented with municipal water; no further mitigation/treatment planned. Consumer notification conducted 07 Mar 17. Implemented recurring sampling/analysis.	Continue to use Army system wells producing water below LHA supplemented with municipal water until camp closure						
Army	USAG Red Cloud, KR: Camp Stanley	Korea	1	1	PFOA + PFOS combined = 80-1,061	Initial, confirmatory and subsequent sampling conducted at multiple wells (Nov 16-Jan 17). Entire system taken off line; initially switching to municipal water. After conducting additional sampling, 2 wells indicated PFOA/PFOS results below the LHA. Because the camp is scheduled for closure within the next 18 months, the solution is to use the wells producing water below LHA supplemented with municipal water; no further mitigation/treatment planned. Consumer notification conducted 07 Mar 17. Implemented recurring sampling/analysis.	Continue to use Army system wells producing water below LHA supplemented with municipal water until camp closure						
Army	USAG Benelux - Caserne Daumerie, BE	Belgium							1	1	PFOA + PFOS combined = 84-94	Purchased water - Initial and confirmatory sampling conducted (Mar 17-May 17). Using bottled water. Consumer notification conducted 14 Jul 17.	Continued use of bottled water until closure/transfer in 6-9 months

**Summary of PFOS/PFOA Testing of Drinking Water Systems for DoD Installations - ARMY**

Summary of Testing for DoD Drinking Water Systems and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>												
DoD Component	Installation	State/Territory/Overseas Location	DoD Purveyor Drinking Water Systems					Non-DoD Purveyor Drinking Water Systems				
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
Army	Belmont Armory	Michigan	1	1	86-96.8	MIARNG spoke with potential responsible party (PRP) representative about filter systems and long term maintenance. Bottled water has been supplied to armory personnel by MIARNG and PRP.	MIARNG is waiting for response from PRP, exploring filter system options, and working with state agencies toward resolution.					
Army	El Campo	Texas	1	1	79	Well is designated as non-potable. Bottled water is being provided for an alternate drinking water supply. A Granular Activated Carbon Filter System installed and confirmation sampling conducted in August 2017.	Additional sampling will be conducted in November 2017 and February 2018 to determine if filtration system is reducing drinking water below the LHA. If sampling results determine the water source is below the LHA, bottled water usage will be discontinued and the water well reestablished as potable.					

**Footnotes:**  
 1: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).  
 2: Examples of actions taken include but are not limited to: sampling and analysis, retesting, shutting down a well(s), providing alternative drinking water, adding an activated carbon filter to the well, and blending water systems.

**Summary of PFOS/PFOA Testing to Determine Impact to Drinking Water Systems Off-Installation - ARMY**

Summary of DoD Testing Drinking Water Systems Off-Installation and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>												
DoD Component	Installation	State/Territory/Overseas Location	DoD Purveyor Drinking Water Systems					Off-base Public and Private Drinking Water Systems				
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
Army	Camp Grayling Joint Maneuver Training Center	Michigan									Residential drinking water wells were sampled downgradient of the Camp Grayling Airfield where groundwater samples indicated PFOS/PFOA results > LHA. The Michigan DHHS paid for aquasana drinking water filter systems under counter faucet 3 stage max flow and local Health Dept. had them installed in any home with PFOS/PFOA detections. 42 systems have been installed. An additional 14, purchased by local Health were installed by home owners.	The Michigan DEQ has been funded to conduct off post residential sampling and hydrologic study. The DHHS and local Health Dept. will continue to purchase filter systems and install them as needed or requested by home owners. Michigan DEQ is continuing to expand the area of drinking water sampling to the east side of the airfield. Numbers of wells are TBD.

**Footnotes:**  
 1: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).  
 2: Examples of actions taken include but are not limited to: sampling and analysis, retesting, shutting down a well(s), providing alternative drinking water, adding an activated carbon filter to the well, and blending water systems.



Department of the Army

Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA

Army Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 and Beyond
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Army - Active/ARNG	Mtc-H Camp Grayling <sup>3</sup>	Michigan	47	13	87-2650				Installation-wide PA awarded 8/11/17; MDEQ has provided below the sink filtration to off-post residents affected by PFAS in drinking water and has taken lead in off post investigation.	ARNG will proceed with PA and SI on installation while MDEQ continues an off-post groundwater investigation to better understand nature and extend of PFAS impacted groundwater and possible other sources; weekly coordination with MDEQ continues; ARNG award of Grayling Army Airfield RI is planned for on-post in FY18.
Army - BRAC	Devens <sup>3</sup>	Massachusetts				72	32	77-19000	Completed PA/SI	Results of SI sampling are being shared and coordinated with MaDEP. RI/FSs are expected to begin in FY18.
Army - Active	Fort Drum	New York	24	10	128 to >15,000				Initiated basewide PA	Complete Basewide CERCLA Preliminary Assessment/Conduct CERCLA Site Inspection at the fire training pit.
Army - Active	Fort McCoy	Wisconsin	27	16	81 - 120,000				Conducted confirmation sampling	Conduct CERCLA Preliminary Assessment

Department of the Army

Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA

Army Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 and Beyond
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Army	Fort Meade	Maryland				4	4	300-87,000	1) Sampled six (6) Fort Meade drinking water supply wells (Non-detect) Sampled 4 GW wells on former Army Property 2) Provided sampling results verbally to EPA/MDE 3) Recommended five-year sampling in conjunction with Groundwater Operable Unit Final 5YR per Army policy for open sites	1) October 2018 - submit sampling results FACT SHEET to stakeholders
Army - BRAC	Fort Ord	California	8	2	120 - 334				PFOS/PFOA was sampled at OU1, results as indicated. The regulatory agencies agreed to close OU-1 and approved the demolition of all OU1 remaining GW wells and the Northwest Treatment System without any further action on PFOA/PFOS because the groundwater has existing restrictions and is not migrating off post. The demolition activity was completed in July 2017.	1) The draft OU1 Closeout Report is currently under review by the regulatory agencies and waiting for approval. 2) One additional sampling event is planned for the groundwater monitoring wells at OU2 to screen for PFOA/PFOS in FY18. Any future activities will be based on the sampling results.

Department of the Army

Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA

Army Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 and Beyond
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Army - Active	Letterkenny Army Depot	Pennsylvania	24	6	82 - 2,069	3	0		Initial sampling was completed in 2013 and compared to the 2009 provisional health advisory. Sampling was repeated in 2017 at locations where results were above the 2009 provisional health advisory.	Another round of sampling at 16 onpost wells in early FY 18. Most likely site will proceed to RI/FS.
Army - BRAC	North Penn U.S. Army Reserve Center	Pennsylvania	5	4	70 to 276	1	1	110	Tested 5 on-post ground water monitoring wells with 4 detections at or above EPA LHA (Jun 16).  Tested four nearby homes wells that use groundwater(Apr 17). One detection in agricultural well over EPA LHA (110 ppt).	Sept 17: Sampled two groundwater monitoring wells exceeded EPA LHA (21,391 and 33,131 ppt).  Plan in Oct 17 resample the two groundwater wells. Additional sampling to be coordinated with PADEP and Township.

Department of the Army

Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA

Army Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 and Beyond
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Army - BRAC	Seneca Army Ammunition Plant <sup>3</sup>	New York	43	16	580-89,000				PA/SI completed for 3 sites; Airfield below LHA, the Fire Training Area below HA, and the Fire training and demonstration pad which exceeded HA. The State and EPA agreed NFA is likely because of existing GW restrictions.	No further action (NFA) will be recommended due to existing land use control (LUC) and GW use prohibition, however the Fire Training and Demonstration Pad may have to be characterized further for source and extent of PFOS/PFOA contamination.
<b>Totals:</b>			<b>178</b>	<b>67</b>	<b>70 - 120,000</b>	<b>80</b>	<b>37</b>	<b>77 - 19,000</b>		

**Footnotes:**

1: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).

2: Examples of actions taken include but are not limited to: sampling and analysis, retesting, shutting down a well(s), providing alternative drinking water, adding an activated carbon filter to the well, and blending water systems.

3: This installation is not one of the 61 Army installations with one or more areas where there is a known or suspected release of PFOS or PFOA as of December 31, 2016; however, it is included here because the Army investigated for a potential release of PFOS or PFOA at the request of the regulator.

NAVY

**Summary of PFOS/PFOA Testing of Drinking Water Systems for DoD Installations - NAVY**

Summary of Testing for DoD Drinking Water Systems and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>												
DoD Component	Installation	State/Territory/Overseas Location	DoD Purveyor Drinking Water Systems					Non-DoD Purveyor Drinking Water Systems				
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
Navy	NAS Oceana - NALF Fentress	Virginia	1	1	2,800-4,900	Drinking water sampling and analysis. Navy provided alternative drinking water, upgraded wastewater treatment plant, design/construction for water treatment plant.	Anticipating that the drinking water system will be approved for operation by the state in late 2017. Will continue to monitor finished water for PFOS/PFOA as required for operation and maintenance of the system.	N/A	N/A	N/A	N/A	N/A
Navy	NSA Monterey - Naval Radio Transmitter Facility Dixon	California	1	1	260	Drinking water sampling and analysis. Navy is providing alternative drinking water. System was retested and regional water quality board was notified.	Will continue to track issues as the state investigates the source. Continue to provide alternate water to the installation.	N/A	N/A	N/A	Nearby county property tested their wells which are in a deeper aquifer and had no detections of PFOS/PFOA. No known source of contaminants on Navy property, state has been advised and is looking for potential sources.	None required
Navy	NSF Diego Garcia	Diego Garcia	5	3	77-5,849	Alternate drinking water was already being provided due to other contaminants. Installation drinking water system reconfiguration in 2017, which changed the total number of systems and the number affected. A new treatment plant was installed for the Main System and the Deep Draft Wharf System had minor repair/reconfiguration performed. Deep Draft Wharf tested below the LHA since Dec. 2017 and the Main System tested below the LHA in July 2017.	Continued monitoring for PFOS and PFOA at the two impacted systems	N/A	N/A	N/A	N/A	N/A
Navy	Weapons Station Seal Beach-NOSC Moreno	California	N/A	N/A	N/A	None required, consecutive system receiving water that has been tested by supplier.	None Required	N/A	N/A	125-135	Navy confirmed that the Eastern Municipal Water District has taken the impacted well off line and NOSC Moreno is not being impacted. They are working with March Air Reserve Base to determine clean-up requirements.	None required

**Summary of PFOS/PFOA Testing of Drinking Water Systems for DoD Installations - NAVY**

Summary of Testing for DoD Drinking Water Systems and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>												
DoD Component	Installation	State/Territory/Overseas Location	DoD Purveyor Drinking Water Systems					Non-DoD Purveyor Drinking Water Systems				
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
USMC	Marine Forces Reserve (MARFORRES)-Marine Corps Reserve Training Center (MCRTC) Stewart	New York	N/A	N/A	N/A	None required; consecutive system receiving water that has been tested by supplier.	None Required	N/A	N/A	140-170	The Marine Corps has a Reserve Unit that is a tenant on the Stewart Air National Guard Base, who purchases water from City of Newburgh, NY. City of Newburgh, as of May 2016, has stopped using the contaminated water source and is connected to alternate water systems that are PFOS free. The current water provided (Catskill Aqueduct and Brown's Pond) meets all regulatory levels and are below the LHAs. Additionally, the State of NY has made this a state Superfund site (Air Force National Guard has the lead).	All sampling & corrective actions were completed by water supplier (not USMC)
USMC	MARFORRES-MCRTC Wilmington	Delaware	N/A	N/A	N/A	None required; consecutive system receiving water that has been tested by supplier.	None Required	N/A	N/A	PFOS: 130 1,800 PFOA: 140	Artesian Water Company detected PFOS as a result of testing conducted under UCMR3 in 2014. Upon detection, Artesian discontinued the use of the wells where the contamination was identified. In 2015, Artesian installed new carbon filtration units and aeration equipment to remove the newly detected contaminant to levels of non-detect at Jefferson Farms treatment facility in New Castle County.	All sampling & corrective actions were completed by water supplier (not USMC)

**Summary of PFOS/PFOA Testing of Drinking Water Systems for DoD Installations - NAVY**

Summary of Testing for DoD Drinking Water Systems and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>												
DoD Component	Installation	State/Territory/Overseas Location	DoD Purveyor Drinking Water Systems					Non-DoD Purveyor Drinking Water Systems				
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
USMC	MCB Camp Pendleton (South)	California	1	1	77	-One sample exceeded the PFOS/PFOA combined Health Advisories Level. -The affected reservoir was drained and replaced with water from another source. -Resampling confirmed levels below the Health Advisories Level in the current water supply and levels slightly above the Health Advisories Level in the well taken out of service. Installation will continue to monitor the system.	Installation will continue to monitor the system.	N/A	N/A	N/A		None required

**Footnotes:**

1: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).

2: Examples of actions taken include but are not limited to: sampling and analysis, retesting, shutting down a well(s), providing alternative drinking water, adding an activated carbon filter to the well, and blending water systems.



**Summary of PFOS/PFOA Testing to Determine Impact to Drinking Water Systems Off-Installation - NAVY**

Summary of Testing Drinking Water Systems Off-Installation and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>												
DoD Component	Installation	State/Territory/Overseas Location	DoD Purveyor Drinking Water Systems					Off-base Public and Private Drinking Water Systems				
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
Navy	Naval Base Kitsap - NARL Barrow	Alaska	N/A	N/A	N/A	Not an active installation	None Required	5*	5*	144 - 262	*Surface water (Imikpuk Lake) sampled; serves as intermittent water source for hunters and village elders.	Continue investigation
Navy - BRAC	Agana	Guam	N/A	N/A	N/A	N/A	N/A	12	5	88 - 410	Sampling conducted by Guam Waterworks Authority. Wells are treated with GAC.	None required
Navy	NAS Oceana - NALF Fentress	Virginia	N/A	N/A	N/A	N/A - Navy owned drinking water system.	N/A	54	7	74 - 1,660	Addressed current exposure. Bottled water to 6 residents (one property has 2 wells); installation of 5 point of entry treatment units and running pilot tests (1 resident has not agreed to treatment system).	Continued monitoring of homes with treatment systems and continued bottled water to one resident, with additional requests to install a treatment system.
Navy	NAS Whidbey Island - Ault Field (Private)	Washington	N/A	N/A	N/A	There are no private wells on installation	None Required	103	2	140 - 3,823	Addressed current exposure. Bottled water to two residents	Various options currently being evaluated; resolution likely will be residence-specific.
Navy	NAS Whidbey Island - OLF Coupeville (Private)	Washington	2	0	ND-17.5	Coupeville Trainer water system had detections below the LHA.	None Required	100	7	130 - 660	Bottled water to 9 residents (2 of 7 wells serve 2 residents)	Various options currently being evaluated; resolution likely will be residence-specific.
Navy	NAS Whiting Field (Main Base)	Florida	1	0	N/A	None required	None Required	9	1	259	Addressed current exposure. Bottled water to one resident	Evaluate long-term solutions so resident does not have to stay on bottled water.
Navy	NMC Earle	New Jersey	1	0	N/A	The Navy tested one system at Earle and three other systems were tested by the supplier. There were no PFOS/PFOA detections at any of the systems	None Required	28	2	70 - 228	Addressed current exposure. Bottled water supplied until connections to municipal water were completed.	No future actions for drinking water needed.
Navy - BRAC	Warminster (Private)	Pennsylvania	N/A	N/A	N/A	N/A	N/A	345	65	71 - 1,800	Bottled water provided. Connection to Public water	Continue to connect to Public water. Approximately 1 year from exceedance
Navy - BRAC	Warminster (Public)	Pennsylvania	N/A	N/A	N/A	N/A	N/A	17	4	88 - 1,300	Environmental Services Cooperative Agreement (ESCA) with water authorities for Public well treatment	Provide Public well treatment. Approximately 1 year from ESCA finalization
Navy - BRAC	Willow Grove (Private)	Pennsylvania	N/A	N/A	N/A	N/A	N/A	492	92	72 - 8,100	Bottled water provided. Connection to Public water	Continue to connect to Public water. Approximately 1 year from exceedance
Navy - BRAC	Willow Grove (Public)	Pennsylvania	N/A	N/A	N/A	N/A	N/A	14	7	74 - 1,000	ESCA with water authorities for Public well treatment	Provide Public well treatment. Approximately 1 year from ESCA finalization
USMC	MCLB Barstow	California	2	0	N/A	None required	None Required	2	1	103	Addressed current exposure. Bottled water to one resident at a rental property. Renter moved out; property currently vacant.	Continue monitoring

**Footnotes:**  
 1: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).  
 2: Examples of actions taken include but are not limited to: sampling and analysis, retesting, shutting down a well(s), providing alternative drinking water, adding an activated carbon filter to the well, and blending water systems.

**Department of the Navy**

**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Navy/USMC Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component <sup>2</sup>	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>3</sup>	Key Actions Planned for FY 2018 and Beyond
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Navy - BRAC	Agana	Guam	5	2	272 - 314	0	N/A	N/A	Sampling Performed	Notification of sampling results to property owner and/or regulatory stakeholders
Navy - BRAC	Alameda	California	30	16	112 - 336,000	0	N/A	N/A	Sampling Performed	Notification of sampling results to property owner and/or regulatory stakeholders
Navy - Active	Amchitka Alaska	Alaska	1	1	144	0	N/A	N/A	Sampling Performed	Continue CERCLA process
Navy - BRAC	Annapolis	Maryland	68	54	70 - 70,000	0	N/A	N/A	Sampling Performed	Continue CERCLA process
Navy - Active	Barrow	Alaska	5* (surface water)	5* (surface water)	143.6 -262.3	0	N/A	N/A	Sampling performed	Continue CERCLA process
Navy - Active	Bedford Massachusetts Naval Weapons Industrial Reserve Plant	Massachusetts	8	1	167	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - BRAC	Brunswick	Maine	139	70	71 - 24,000	0	N/A	N/A	Sampling to support basewide RI	Continue CERCLA process
Navy - Active	Calverton	New York	13	7	89 - 2700	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	Chesapeake Beach	Maryland	18	Shallow GW: 9 Deep GW: 0	190 - 241,110	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	China Lake	California	11	7	3,800 - 8,000,000	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	Corpus Christi Texas Naval Air Station	Texas	14	4	229 - 510	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	Cutler	Maine	19	4	161 - 350	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - BRAC	Dallas	Texas	22	16	70 - 1,247,000	0	N/A	N/A	Sampling Performed	Conduct Affected Property Assessment Report (APAR)

**Department of the Navy**

**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Navy/USMC Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component <sup>2</sup>	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>3</sup>	Key Actions Planned for FY 2018 and Beyond
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Navy - Active	Earle	New Jersey	18	13	70 - 228	0	N/A	N/A	Completed off-base DW sampling; Mitigation of municipal water connection completed; initiated RI	Continue CERCLA process
Navy - Active	Gulfport	Mississippi	18	5	91 - 480	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	Jacksonville	Florida	17	17	3,410 - 1,397,120	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	Meridian	Mississippi	40	17	123 - 23,000	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - BRAC	Millington	Tennessee	4	2	70 - 1,238	0	N/A	N/A	Sampling Performed	Notification of sampling results to property owner and/or regulatory stakeholders
Navy - Active	Naval Air Station Whidbey Island (Ault field)	Washington	5	2	28,470 - 58,922	0	N/A	N/A	Completed off-base DW sampling; providing alternative drinking water; initiated PA/SI	Continue CERCLA process
Navy - Active	Naval Air Station Whidbey Island (OLF Coupeville)	Washington	27	2	70 - 1193.26	0	N/A	N/A	Completed off-base DW sampling; providing alternative drinking water; initiated PA/SI	Continue CERCLA process
Navy - Active	Naval Auxiliary Landing Field Fentress (Oceana)	Virginia	29	17	80.8 - 52,900	0	N/A	N/A	Working with City to install off-base monitoring wells	Continue CERCLA process
Navy - Active	NAS Oceana	Virginia	37	14	74 - 493,600	0	N/A	N/A	Completed off-base DW sampling; coordinating potential LUCs; initiated PA/SI	Continue CERCLA process
Navy - Active	Newport	Rhode Island	58	20	95 - 20,420	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	Norfolk Virginia Naval Base	Virginia	45	29	73 - 3,373	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process

Department of the Navy

Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA

Navy/USMC Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component <sup>2</sup>	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>3</sup>	Key Actions Planned for FY 2018 and Beyond
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Navy - Active	NAS Pensacola (Outlying Landing Field Bronson)	Florida	23	3	71.5 - 1,145	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	Pensacola	Florida	9	9	84 - 126,300	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	Port Hueneme	California	4	4	51,000 - 1,080,000	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	Portsmouth Naval Shipyard	Maine	4	1	139.68	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - Active	NAS Pensacola; OLF Saufley Field	Florida	14	13	250 - 79,000	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
Navy - BRAC	South Weymouth	Massachusetts	186	109	71 - 256,000	0	N/A	N/A	Sampling to support basewide RI	Continue CERCLA process
Navy - BRAC	Treasure Island	California	3	3	160 - 10,750	0	N/A	N/A	Sampling Performed and Notification	Continue CERCLA Process (Evaluate in Five Year Review)
Navy - BRAC	Trenton	New Jersey	38	23	178 - 27,800	1	1	112	Sampling Performed	Continue CERCLA process
Navy - BRAC	Warminster	Pennsylvania	97	92	75 - 19,000	47	40	75 - 8,500	Sampling to support basewide RI	Continue CERCLA process
Navy - BRAC	White Oak - Naval Surface Warfare Center Dahlgren Division Detachment (Silver Spring)	Maryland	16	8	73.9 - 1,365	0	N/A	N/A	Sampling Performed	Notification of sampling results to property owner and/or regulatory stakeholders
Navy - BRAC	Willow Grove	Pennsylvania	161	108	70 - 86,000	0	N/A	N/A	Sampling to support basewide Remedial Investigation (RI)	Continue CERCLA process
<b>Navy Subtotals:</b>			<b>1,201</b>	<b>707</b>	<b>70 - 8,000,000</b>	<b>48</b>	<b>41</b>	<b>75 - 8,500</b>		

Department of the Navy

Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA

Navy/USMC Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component <sup>2</sup>	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>3</sup>	Key Actions Planned for FY 2018 and Beyond
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
USMC - Active	Barstow	California	37	16	80 - 138	0	N/A	N/A	Completed off-based DW sampling; providing alternative water supply; Initiated PA/SI	Continue CERCLA process
USMC - BRAC	El Toro Marine Corps Air Station	California	18	6	77.6 - 3,826	4	1	81.2 - 101.5	Sampling Performed	Notification of sampling results to property owner and/or regulatory stakeholders
USMC - BRAC	Tustin	California	3	3	423 - 770,000	0	N/A	N/A	Sampling Performed	Notification of sampling results to property owner and/or regulatory stakeholders
USMC - Active	Twentynine Palms	California	5	2	318 - 440	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
USMC - Active	Yuma	Arizona	29	8	75 - 185	0	N/A	N/A	Initiated PA/SI	Continue CERCLA process
<b>USMC Subtotals:</b>			<b>92</b>	<b>35</b>	<b>75 - 770,000</b>	<b>4</b>	<b>1</b>	<b>81.2 - 101.5</b>		
<b>Navy/USMC Totals:</b>			<b>1,293</b>	<b>742</b>	<b>70 - 8,000,000</b>	<b>52</b>	<b>42</b>	<b>75 - 8,500</b>		

Footnotes:

1: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).

2: The Navy plans, programs, budgets, and executes the Defense Environmental Restoration Program for the U.S. Marine Corps.

3: Examples of actions taken include but are not limited to: sampling and analysis, retesting, shutting down a well(s), providing alternative drinking water, adding an activated carbon filter to the well, and blending water systems.

4: The Navy investigated known or suspected PFOS/PFOA releases at several BRAC installations, captured collectively here.

AIR FORCE

**Summary of PFOS/PFOA Testing of Drinking Water Systems for DoD Installations - AIR FORCE**

Summary of Testing for DoD Drinking Water Systems and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>														
DoD Component	Installation	State/ Territory/ Overseas Location	DoD Purveyor Drinking Water Systems					Non-DoD Purveyor Drinking Water Systems						
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested		Number that Tested above the EPA LHAs <sup>1</sup>		Results (PFOS/ PFOA) or Concentration Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
								Public DW Systems	Private DW Wells	Public DW Systems	Private DW Wells			
Air Force - ANG	Barnes ANGB (104th)	Massachusetts						1	0	1	0	43-160 ppt (PFOS+PFOA)	Base obtains water from Westfield Water Dept. UCMR sampling indicated two DW system wells were elevated in 2013, and they have been removed from service. The Westfield Water Dept is in the process of addressing the two DW wells with elevated levels.	Water sources will continue to be sampled for PFOA and PFOS. DW Wells #7 and #8 are not being used due to higher levels of PFOS and PFOA. Possible future treatment options are being investigated. Prior to any DW well (i.e. #1; #7; #8) being returned to use in a non-emergency situation, public notice will be provided, which will include additional sample results for PFOA, PFOS and similar chemicals and an explanation of treatment or other actions taken to support the return of the DW well(s) to service.
Air Force - ACTIVE	Eielson AFB	Alaska	1	1	9-111 ppt (PFOS+PFOA)	Drinking water sampling and analysis. Four of six drinking water wells taken off-line. Well with lowest PFOS/PFOA level used as primary well. Eielson upgraded the base water treatment plant with four temporary granulated activated carbon (GAC) filters pending completion of permanent GAC system. Eielson conducts quarterly sampling. One treated water sample above LHA due to carbon break thru.	Projected date of 30 November 2017 for installation of four of the six permanent GAC filters at the base water treatment plant. The two additional filters used on the temporary systems scheduled to be permanently installed by 1 January 2018 to complete the upgrade project. Eielson will continue conducting quarterly sampling.							
Air Force - ANG	Gabreski ANGB (106th)	New York						1	0	1	0	ND-530 ppt (PFOS+PFOA)	Base purchases DW water from Suffolk County. The County took action by blending and taking DW wells out of service. The County is currently installing GAC filters.	Continue quarterly samples.
Air Force - ANG	Harrisburg IAP (ANG) (193rd)	Pennsylvania						1	0	1	0	20-103 ppt (PFOS+PFOA)	During 2014 it was discovered from UCMR3 drinking water sampling activities that PFOS/PFOA was detected above the LHAs. State approved an action plan as follows: affected DW wells removed from service; other DW wells utilized to produce water below the LHAs; monthly sampling.	Actions taken previously. No actions listed on 2016 Consumer Confidence Report

**Summary of PFOS/PFOA Testing of Drinking Water Systems for DoD Installations - AIR FORCE**

Summary of Testing for DoD Drinking Water Systems and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>														
DoD Component	Installation	State/ Territory/ Overseas Location	DoD Purveyor Drinking Water Systems					Non-DoD Purveyor Drinking Water Systems						
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested		Number that Tested above the EPA LHAs <sup>1</sup>		Results (PFOS/ PFOA) or Concentration Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
								Public DW Systems	Private DW Wells	Public DW Systems	Private DW Wells			
Air Force - ANG	Horsham AGS (AGS) (111th)	Pennsylvania	1	1	60-290 ppt (PFOS+PFOA)	Alternate water source is being utilized. Drinking water sampling and analysis for several years. Two drinking water wells are off-line. Currently sampling monthly at four locations.	New treatment plant is being built							
Air Force - ACTIVE	Kunsan AB	South Korea	1	1	55-85 ppt (PFOS+PFOA)	Connected to local municipal DW supply until Kunsan AB source is mitigated to PFOS/PFOA levels lower than the EPA LHA.	Will continue to monitor Kunsan AB source water quarterly for PFOS/PFOA, and will continue using local municipal DW supply until base water can be mitigated to below EPA LHA levels.							
Air Force - ACTIVE	Mountain Home AFB	Idaho	1	1	77-105 ppt (PFOS+PFOA)	Drinking water sampling and analysis have occurred. Bottled water was purchased as an interim safety measure while the contaminated wells were evaluated and a plan was developed. Bottled water is still being supplied to the Control Tower as their only source of drinking water is a contaminated well. The contaminated well (well 4) supplying our industrial side of the base was removed from service, and the system was flushed over 3 days. Additional sampling has been conducted to show that PFOS/PFOA is no longer in the distribution lines.	AFCEC and our CE personnel are developing long term plans, and will be constructing a new well. Well 4 will remain offline permanently due to PFOS/PFOA and nitrate contamination. Periodic sampling for PFOS/PFOA will continue to ensure the remaining wells are not impacted.							
Air Force - ACTIVE	New Boston AFS	New Hampshire	2	1	13-83 ppt (PFOS+PFOA)	Drinking water sampling and analysis. DW well above the EPA LHAs has been shut down. The AF is conducting quarterly sampling for the operational drinking water wells.	Project has been awarded to add Activated Carbon to impacted DW well to fix PFOS/PFOA. Quarterly testing will continue							



**Summary of PFOS/PFOA Testing of Drinking Water Systems for DoD Installations - AIR FORCE**

Summary of Testing for DoD Drinking Water Systems and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>														
DoD Component	Installation	State/ Territory/ Overseas Location	DoD Purveyor Drinking Water Systems					Non-DoD Purveyor Drinking Water Systems						
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/ PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested		Number that Tested above the EPA LHAs <sup>1</sup>		Results (PFOS/ PFOA) or Concentration Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
								Public DW Systems	Private DW Wells	Public DW Systems	Private DW Wells			
Air Force - ANG	New Castle ANGB (166th)	Delaware						1	0	1	0	140-1800 ppt (PFOS+PFOA)	Artesian Water Company discontinued the use of the wells where the contamination was identified.	Supplier took actions consistent with AF policy
Air Force - ANG	Pease ANGB (157th)	New Hampshire						1	0	1	0	2500 ppt (PFOS+PFOA)	City provides water to the ANG. During AF clean up activities May 2014, a drinking water well (Haven) tested above the provisional health advisory (at the time) and also above the current LHAs. The well was turned off by the City.	
Air Force - ACTIVE	Wright-Patterson AFB	Ohio	2	1	90-235 ppt (PFOS+PFOA)	Drinking water sampling and analysis. Bottled water was provided for Area A, where two drinking water wells and the treatment system were shut down. In the process of installing granular activated carbon filter system. Base officials are continuing to sample drinking water to ensure levels remain below the EPA LHAs.  <b>9-5-17:</b> GAC units were installed and went on line in Area A @ (EPs 001 and 004) on 2Jun17. Since that time, PFOS/PFOA results after GAC treatment at these entry points are BDL. Well #7, which is not treated by the GAC system has PFOA results of 5.0 - 6.6 ppt. Entry points 002 and 003 which are fed by Well 7 have PFOA results of 2.7-4.6 ppt. Wells 1 and 3 also have very small amounts of PFOA.	We are continuing monthly PFC monitoring at all 6 Area A wells and EP 001 per the GAC Plans Approval with OEPA. Area B wells are being monitored quarterly due to low levels of PFOA. CE is currently working on a back up plan for Area B in the event that the PFOA levels begin to increase to the Public Advisory Limit of 70ppt.							

**Footnotes:**  
 1: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).  
 2: Examples of actions taken include but are not limited to: sampling and analysis, retesting, shutting down a well(s), providing alternative drinking water, adding an activated carbon filter to the well, and blending water systems.

**Summary of PFOS/PFOA Testing to Determine Impact to Drinking Water Systems Off-Installation - AIR FORCE**

Summary of DoD Testing of Drinking Water Systems Off-Installation and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>														
DoD Component	Installation	State/ Territory/ Overseas Location	DoD Purveyor Drinking Water Systems					Off-base Public and Private Drinking Water Wells						
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested		Number that Tested above the EPA LHAs <sup>1</sup>		Results (PFOS/PFOA) or Concentration Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
								Public DW Systems	Private DW Wells	Public DW Systems	Private DW Wells			
Air Force - ACTIVE	Dover AFB	Delaware						1	19	0	1	91 ppt (PFOS + PFOA)	Installed whole-house activated carbon filtration system at one residence as a permanent solution.	Sampling and analysis to verify filtration system is working as intended; filter changes as needed.
Air Force - ACTIVE	Eielson AFB	Alaska						0	174	0	169	83 - 2222 ppt (PFOS+PFOA)	Installed 163 water systems (remaining six are due to owner delays) to include: 96 water tank (2,000 gal) delivery systems , 65 granulated activated carbon (GAC) systems, 2 water carboy (5-gal) delivery systems.	Complete Interim Proposed Plan to determine final remedy for a long-term drinking water supply for the community of Moose Creek, AK, by Nov 2017. Preferred Alternative anticipated to be connection to the City of North Pole water system. Final Record of Decision to be completed by Aug 2018. Implementation of selected remedy programmed for FY19.
Air Force - ACTIVE	Ellsworth AFB	South Dakota						0	1	0	1	182 ppt	Alternate DW water source provided in January 2017. Two properties, sharing one (1) private DW well, were connected to the existing Base-operated potable waterline. The waterline has provided alternate water since the 1990s to other off-base residents affected by trichloroethene contamination.	Response provided as of 31 August 2017 is the permanent/final mitigation solution.
Air Force - ACTIVE	Fairchild AFB	Washington						2	104	1	43	75-5700 ppt (PFOS+PFOA)	Public DW water system taken off line. Bottled water provided to all private residences with DW wells above LHA.	Negotiate MOU with local municipality; potentially install GAC filtration on public DW water system; ECD - to be determined. Install whole house filtration systems in residences with affected private DW wells; ECD Jan 2018.
Air Force - BRAC	Former KI Sawyer AFB	Michigan						4	9	0	1	202 - 3651 ppt (PFOS+PFOA)	Testing showed exceedance of the LHA. Provided bottled water and cooler.	Complete signing of access agreement. Installation of carbon filtration treatment system planned for September 2017. Conduct monitoring of system to ensure filtration operation is below the LHA.
Air Force - BRAC	Former March AFB	California						4	4	1	2	70 - 168 ppt (PFOS+PFOA)	Supplied two (2) residences with bottled water while working connection to municipal water service. Public DW well shut off and AF reimbursing for the incremental cost increase of purchasing replacement water.	Complete Cooperative Agreement with DW purveyor to fund treatment for impacted municipal DW well.
Air Force - BRAC	Former Mather AFB	California						2	6	1	0	193 ppt (PFOS+PFOA)	Public DW well with exceedance of LHA was taken out of service in 2015 for reasons not related to PFOS/PFOA. DW well remains off-line.	Water purveyor has identified the AF as a potential responsible party, but has not determined future use of the DW well and has not made any request for assistance/action.

**Summary of PFOS/PFOA Testing to Determine Impact to Drinking Water Systems Off-Installation - AIR FORCE**

Summary of DoD Testing of Drinking Water Systems Off-Installation and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>														
DoD Component	Installation	State/ Territory/ Overseas Location	DoD Purveyor Drinking Water Systems					Off-base Public and Private Drinking Water Wells						
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested		Number that Tested above the EPA LHAs <sup>1</sup>		Results (PFOS/PFOA) or Concentration Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
								Public DW Systems	Private DW Wells	Public DW Systems	Private DW Wells			
Air Force - BRAC	Former Pease AFB	New Hampshire						11	37	1	4	72 - 870 ppt (PFOS+PFOA)	Public DW well shut off May 2014. Installed carbon filtration systems for three (3) private DW well owners. Provide bottled water for Fish and Wildlife Service seasonal use facility. AF has agreement with the City of Portsmouth to install a treatment system on the Public well. Installed interim groundwater mitigation system to prevent migration of groundwater above the LHA to private water wells. Developed design plan to install interim mitigation system to prevent migration of groundwater above the LHA to the public DW wells.	Fund City of Portsmouth actions to install treatment system. Negotiate with private well owners to connect to public water supply in the next 18 months. Operate installed groundwater mitigation systems.
Air Force - BRAC	Former Plattsburgh AFB	New York						0	53	0	4	90 - 412 ppt (PFOS+PFOA)	Installed carbon filtration systems for three (3) private DW well owners. Provided bottled water to one (1) private DW well owner because of physical constraints preclude installation of home treatment system.	Connection of private DW water well owners to public water supply planned for fall 2017 or spring 2018.
Air Force - BRAC	Former Wurtsmith AFB	Michigan						2	67	0	1	2923 ppt (PFOS+PFOA)	Connected private well owner to public water supply.	Complete retesting of private well to ensure level is below LHA.
Air Force - ANG	Horsham AGS (AGS) (111th)	Pennsylvania						2	152	2	59	82-1870 ppt (PFOS+PFOA)	Public Wells: Seven (7) impacted DW wells taken offline. Carbon filtration under design/construction for all seven. Municipalities purchasing make up water from neighboring suppliers. Private Wells: Bottled water delivery by ANG until municipal connect complete.	Public Wells: Carbon filtration construction completion and potability permits expected Summer 2018. Private Wells: Water connections expected to be complete Spring 2018.
Air Force - ACTIVE	Joint Base Cape Cod	Massachusetts						9	73	2	22	73 - 488 ppt (PFOS+PFOA)	Sampling and analysis, retesting, two (2) public DW wells taken offline; bottled water provision for 74 residences, carbon filtration system installed at 13 residences, municipal water connections.	Wellhead treatment on public DW water supply well (funding anticipated FY18 Q1); additional carbon filtration systems, bottled water provision, and/or municipal water connections to be determined based on results of ongoing outreach.
Air Force - ACTIVE	Joint Base McGuire-Dix-Lakehurst	New Jersey						2	175	0	3	152 - 1688 ppt (PFOS + PFOA)	Bottled water provided to three (3) properties with private DW wells where results exceeded the LHAs. Subsequently installed 2 point-of-entry (POE) GAC systems and 1 point-of-use (POU) RO system and discontinued bottled water. System monitoring and O&M ongoing for the 3 treatment systems.	Engage with local municipality, connect to existing municipal water service, and extend water line as permanent solution to replace installed POE GAC systems at 2 properties; ECD May 2018. Conduct one year of monitoring at 1 property with installed RO Unit to determine if initial exceedance is valid (subsequent confirmation samples have been ND). Conduct minimum of one year of quarterly monitoring at 19 properties with PFOS/PFOA detections below the LHAs.

**Summary of PFOS/PFOA Testing to Determine Impact to Drinking Water Systems Off-Installation - AIR FORCE**

Summary of DoD Testing of Drinking Water Systems Off-Installation and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>														
DoD Component	Installation	State/ Territory/ Overseas Location	DoD Purveyor Drinking Water Systems					Off-base Public and Private Drinking Water Wells						
			Total Number Tested	Number that Tested above the EPA LHAs <sup>1</sup>	Results (PFOS/PFOA) or Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA	Total Number Tested		Number that Tested above the EPA LHAs <sup>1</sup>		Results (PFOS/PFOA) or Concentration Range above EPA LHAs (ppt)	Actions Taken as of August 31, 2017 <sup>2</sup>	Actions Planned after August 31, 2017, and Timeline to Implement the Actions to Reduce PFOS/PFOA Below LHA
								Public DW Systems	Private DW Wells	Public DW Systems	Private DW Wells			
Air Force - ACTIVE	Peterson AFB	Colorado						5	83	5	39	70 - 7910 ppt (PFOS+PFOA)	Private well owners provided under-sink (kitchen) reverse osmosis (RO) units. Bottled water is being provided to employees of a shopping center. Low-flow granular activated carbon (GAC) systems installed at one (1) mobile home park and one (1) farm house. One local church was connected to city water. Bottled water is being provided to 52 units in another mobile home park. Five (5) water districts are impacted. Three (3) water districts turned off their wells and are purchasing surface water from another source; the Air Force installed additional piping to convey surface water and an Ion Exchange (IX) system. One water district installed two 500-gpm GAC systems and another water district installed a 300-gpm IX system. One water district remains on bottled water.	Negotiate MOU or Cooperative Agreements with three local municipality; install Ion Exchange filtration systems on public water system or pipe additional wells to existing treatment systems in Summer 2018. Continue to sample wells just below the LHA. Continue to provide bottled water to the 8 homes and the shopping center. Continue to maintain private well treatment systems. Work on more effective system for small mobile home park and farm. Because there are over 30 municipal wells impacted we are still working on making the determination of what the current need is for two of the water districts. The other three water districts should be good by Sep 2018.

**Footnotes:**  
 1: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).  
 2: Examples of actions taken include but are not limited to: sampling and analysis, retesting, shutting down a well(s), providing alternative drinking water, adding an activated carbon filter to the well, and blending water systems.

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-Active	Altus AFB	Oklahoma	12	11	190–290,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-Active	Beale AFB	California	4	3	80–200,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-Active	Cape Canaveral AFS	Florida	11	8	74–53,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-Active	Dover AFB	Delaware	67	36	77–2,800,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-Active	Eglin AFB	Florida	6	6	4,300–280,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-Active	Eielson AFB	Alaska	25	18	95–2,000,000 ppt PFOS+PFOA	9	0		Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-Active	Ellsworth AFB	South Dakota	46	43	72–551,000 ppt PFOS+PFOA	12	10	150-33,900 ppt PFOS+PFOA	Completed a limited Preliminary Assessment/Site Inspection for PFOS and PFOA received regulatory concurrence on the findings. Initiated a Remedial Investigation at the former fire training area and completed the first phase of fieldwork in Summer 2017. Initiated a base-wide Site Inspection.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-Active	FE Warren AFB	Wyoming	1	1	1,100 ppt PFOS	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-Active	Hill AFB	Utah	13	12	73–930 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-Active	Joint Base Cape Cod (Massachusetts Military Reservation)	Massachusetts	113	31	71–21,800 ppt PFOS+PFOA	26	13	90-3,200 ppt PFOS+PFOA	Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA. Continued sampling and analyses, retesting, bottled water provision, and installation of carbon filtration systems.	An expanded SI will be conducted at the SI sites except for the tanker truck rollover where the site has proceeded to an RI since PFOS+PFOA greater than the LHA has been detected off base in private wells.
Air Force-Active	Joint Base Langley-Eustis	Virginia	43	41	110–2,200,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-Active	Joint Base San Antonio - Lackland, Randolph, Ft Sam Houston, Camp Bullis	Texas	20	14	83–680,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.



**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-Active	Moody AFB	Georgia	34	22	590–375,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-Active	Patrick AFB	Florida	28	28	71–4,300,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-Active	Peterson AFB	Colorado	14	8	79–88,400 ppt PFOS+PFOA	10	2	130–980 ppt PFOS+PFOA	Submitted request for Expanded SI funds. Conducted mitigation efforts, as reported in Drinking Water Data Call	Expanded SI Field work and continued mitigation on private and public drinking water wells
Air Force-Active	Robins AFB	Georgia	5	3	150–1,400 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-Active	Tinker AFB	Oklahoma	19	15	73–170,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-Active	Travis AFB	California	12	12	89–40,000 ppt PFOS+PFOA	0			Completed the base-wide Preliminary Assessment and received regulatory concurrence on the findings. Initiated a base-wide Site Inspection for PFOS and PFOA.	Continue following the CERCLA process through investigation, cleanup, and long-term monitoring. Perform mitigation activities when impacts to human health are determined.
Air Force-ANG	Horsham	Pennsylvania	106	100	75–297,200 ppt PFOS+PFOA				Continued sampling, carbon added to supply wells on-base and off-base municipal wells, impacted municipalities blending water while carbon under construction, alternate water supplied to impacted private well owners until municipal connections complete	Continue using the Base supply wells that have carbon filtration. Follow the CERCLA process for future investigative and cleanup activities.

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-BRAC	Former Bergstrom AFB	Texas	5	5	472 - 9,970 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.
Air Force-BRAC	Former Castle AFB	California	7	3	281 - 2,502 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.

**Department of the Air Force**

**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-BRAC	Former Chanute AFB	Illinois	58	38	162 - 2,098,000 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment. Upgraded existing groundwater treatment systems with granulated activated carbon to mitigate PFOS/PFOA discharges.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.
Air Force-BRAC	Former England AFB	Louisiana	8	8	4,351 - 10,970,000 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-BRAC	Galena Forward Operating Location	Alaska	6	3	1,868 - 146,400 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and received regulatory concurrence on the findings. Initiated Site Inspections of AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.
Air Force-BRAC	General Mitchell Air Reserve Station	Wisconsin	6	5	88 - 10,830 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Areas. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.
Air Force-BRAC	Former George AFB	California	22	14	87 - 5,396 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Areas. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-BRAC	Former Griffiss AFB	New York	9	9	641 - 61,233 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.
Air Force-BRAC	Former Grissom AFB	Indiana	18	16	74 - 132,000 ppt PFOS+PFOA	5	0		Completed basewide Preliminary Assessment and site inspection. Received regulatory concurrence on the findings. All drinking water well sampling results below LHA.	Conduct one year of quarterly sampling of the private drinking water wells. Follow the CERCLA process for future investigative and cleanup activities.
Air Force-BRAC	Former Kelly AFB	Texas	4	4	8,950 - 35,800 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Perform groundwater investigations of AFFF release areas in conformance with State requirements.

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-BRAC	Former K.I. Sawyer AFB	Michigan	12	8	479 - 58,210 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Areas. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Perform delineation of PFOS/PFOA in groundwater along the pathways to drinking water identified receptors.
Air Force-BRAC	Former Loring AFB	Maine	55	29	84 - 5,861 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area and other AFFF areas. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.
Air Force-BRAC	Former March AFB	California	12	12	76 - 9,666 ppt PFOS+PFOA	4	4	553 - 3,195 ppt PFOS+PFOA	Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination. Perform delineation of PFOS/PFOA in groundwater along the pathways to drinking water identified receptors.

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-BRAC	Former Mather AFB	California	10	9	73 - 16,800 ppt PFOS+PFOA	11	10	79 - 672 ppt PFOS+PFOA	Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Areas. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment. Installed granulated activated carbon to existing fire training area groundwater treatment system to mitigate PFOS/PFOA discharges.	Complete Site Inspection including determination whether drinking water supplies are impacted. Perform delineation of PFOS/PFOA in groundwater along the pathways to drinking water identified receptors. Installation of granulated activated carbon underway on Main Base groundwater treatment system to mitigate PFOS/PFOA.
Air Force-BRAC	Former McClellan AFB	California	17	8	90 - 348 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.



**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-BRAC	Former Myrtle Beach AFB	South Carolina	9	9	7,504 - 2,640,00 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Areas. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.
Air Force-BRAC	Former Pease AFB	New Hampshire	229	137	70 - 479,500 ppt PFOS+PFOA	12	10	73 - 31,800 ppt PFOS+PFOA	Completed basewide Preliminary Assessment and completed the site inspection. Received regulatory concurrence on the findings. Interim modification of existing Fire Training Area groundwater treatment systems with granulated activated carbon to mitigate PFOS/PFOA discharges. Designed groundwater treatment systems for a Fire Training Area and aircraft crash site to prevent migration of groundwater above the LHA to drinking water wells.	Perform delineation of PFOS/PFOA in groundwater along the pathways to drinking water identified receptors. Install interim groundwater mitigation systems at Fire Training Area site and aircraft crash site to prevent migration of groundwater above the LHA to drinking water wells.

**Department of the Air Force**

**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

<b>Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs<sup>1</sup></b>										
<b>DoD Component</b>	<b>Installation</b>	<b>State/Territory</b>	<b>On-base Groundwater Monitoring Wells</b>			<b>Off-base Groundwater Monitoring Wells</b>			<b>Actions Taken as of August 31, 2017<sup>2</sup></b>	<b>Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA</b>
			<b>Total Number Sampled</b>	<b>Number that Tested above the EPA LHAs<sup>1</sup></b>	<b>Range of Results above EPA LHAs (ppt)</b>	<b>Total Number Sampled</b>	<b>Number that Tested above the EPA LHAs<sup>1</sup></b>	<b>Range of Results above EPA LHAs (ppt)</b>		
Air Force-BRAC	Former Plattsburgh AFB	New York	22	31	258 - 1,045,000 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Perform delineation of PFOS/PFOA in groundwater along the pathways to drinking water identified receptors.
Air Force-BRAC	Former Richards-Gebaur AFB	Missouri	4	4	3,103 - 372,300 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment.	Complete Site Inspection including determination whether drinking water supplies are impacted. Follow the CERCLA process for future investigative and cleanup activities.

Department of the Air Force

Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
Air Force-BRAC	Former Wurtsmith AFB	Michigan	63	5	88 - 810,000 ppt PFOS+PFOA				Completed basewide Preliminary Assessment and completed the site inspection at the Fire Training Area. Received regulatory concurrence on the findings. Initiated Site Inspections of other AFFF areas identified in Preliminary Assessment. Installed groundwater treatment system to mitigate PFOS/PFOA discharges into Clark's Marsh, mitigating fish tissue accumulation in accordance with State requirements.	Complete Site Inspection including determination whether drinking water supplies are impacted. Perform delineation of PFOS/PFOA in groundwater along the pathways to drinking water identified receptors. Add granulated activated carbon to existing groundwater treatment systems to mitigate PFOS/PFOA discharges.
<b>Totals:</b>			<b>933</b>	<b>670</b>		<b>89</b>	<b>49</b>			

**Department of the Air Force**  
**Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHAs for PFOS/PFOA**

Air Force Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>2</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		

**Footnotes:**

1: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).

2: Examples of actions taken include but are not limited to: sampling and analysis, retesting, shutting down a well(s), providing alternative drinking water, adding an activated carbon filter to the well, and blending water systems.

Defense Logistics Agency

Summary of DoD Testing of Groundwater Monitoring Wells and Actions Taken where Results were above the EPA LHA for PFOS/PFOA

Defense Logistics Agency Installations where DoD Sampled Groundwater Monitoring Wells and Actions Taken where Results were Above the EPA LHAs <sup>1</sup>										
DoD Component <sup>2</sup>	Installation	State/Territory	On-base Groundwater Monitoring Wells			Off-base Groundwater Monitoring Wells			Actions Taken as of August 31, 2017 <sup>3</sup>	Key Actions Planned for FY 2018 to Reduce PFOS/PFOA Below LHA
			Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)	Total Number Sampled	Number that Tested above the EPA LHAs <sup>1</sup>	Range of Results above EPA LHAs (ppt)		
DLA Energy	DFSP Newington <sup>4</sup>	New Hampshire	11	9	90-1270 ppt	0	N/A	N/A	N/A	Actions under development in coordination with regulators
DLA Energy	DFSP Verona <sup>4</sup>	New York	9	5	86-1300 ppt	0	N/A	N/A	N/A	Actions under development in coordination with regulators
<b>Footnotes:</b>										
1: The EPA Lifetime Health Advisories (LHAs) for PFOS and PFOA are 70 parts per trillion (individually or combined).										
2: DLA Energy plans, programs, budgets, and executes investigation and cleanup of fuel releases through Defense Working Capital Fund.										
3: Examples of actions taken include but are not limited to: sampling and analysis, retesting, shutting down a well(s), providing alternative drinking water, adding an activated carbon filter to the well, and blending water systems.										
4: DLA Energy is working to close this site and return property to Air Force										