FACT SHEET
PFOS/PFOA

As of 7 November 2016

Background – What are PFOS and PFOA?

Perfluorooctanesulfonic acid, PFOS, and perfluorooctanoic acid, PFOA, are synthetic fluorinated organic compounds used in many industrial and consumer products such as nonstick cookware, stain-resistant fabric and carpet, some food packaging and specialized foam.

Commonly grouped with other synthetic fluorinated chemicals using the umbrella term Perfluourinated Compounds — or PFCs — PFOS and PFOA are the only two compounds with established health advisories for drinking water.

- In 1970, the Air Force began using the firefighting agent Aqueous Film Forming Foam, or AFFF, which contains both PFOS and PFOA.
- AFFF is the most efficient extinguishing method for petroleum-based fires and is widely used across the firefighting industry, to include all commercial airports, to protect people and property.
- On May 19, 2016, the Environmental Protection Agency established lifetime health advisory levels of 70 parts per trillion for PFOS and PFOA in drinking water. Both compounds are classified as emerging contaminants due to evolving regulatory standards.

AFFF Replacement

The Air Force began replacing legacy AFFF with a new, environmentally responsible firefighting foam in August 2016. The replacement foam, Phos-Chek 3 percent, six carbon chain AFFF is PFOS-free and contains only trace amounts of PFOA.

- The Air Force will complete legacy AFFF replacement in fire trucks by 2017, excluding four remote installations that will be complete, weather permitting, in spring 2017.
- The Air Force is no longer using AFFF (new or legacy) for firefighting training, and will continue to test the new C6 AFFF before incorporating it into training procedures. Under current Air Force policy, AFFF will be used only in emergency/life-saving circumstances.
- The Air Force is retrofitting 806 fire trucks with an Eco-Logic system that bypasses the tank containing AFFF and, instead, flows water through the extinguishing system and the cart, gathering data readings and discharging water from the vehicle's turret. Retrofitting will be complete by January 2018.

AF Action – Identify » Respond » Prevent

The Air Force is working with the EPA, as well as state and local regulators, to address potential PFOS/PFOA contamination at active, Reserve, Air National Guard and closed Air Force installations. The Air Force's three-step approach systematically identifies, responds, and prevents potential PFOS/PFOA drinking water contamination related to the service's use of firefighting foam. The following chart outlines Air Force actions.

Air Force Response Chart

IDENTIFY	RESPOND	PREVENT
❖ The Air Force has identified approximately 200 installations where PFOS/PFOA-containing firefighting foam may have been released. ❖ The Air Force is conducting enterprise-wide sampling of drinking water to ensure Airmen and supporting communities have access to safe drinking water. ❖ The Air Force is sampling groundwater to determine whether releases may have occurred and if PFOS/PFOA are present in groundwater. ❖ Groundwater/soil sampling at sites are based on probability of contamination, possible pathway for the contaminant to reach drinking water sources and proximity to groundwater.	❖ If the Air Force identifies a drinking water source that could be contaminated, it will be tested. ❖ When drinking water sample results indicate PFOS/PFOA levels exceed the EPA's health advisory, the Air Force determines an appropriate mitigation action such as, providing an alternate drinking water source, filtration system and/or providing bottled water. ❖ When PFOS/PFOA are detectable but below the HA level in drinking water, the Air Force may conduct well monitoring as needed to track level changes and determine if further action is needed.	❖ The Air Force is replacing legacy AFFF with a new firefighting foam agent, Phos-Chek 3 percent, (C6 AFFF) which contains only trace amounts of PFOA. ❖ In July 2015, the Air Force directed all installations to stop training and testing the foam systems on all fire vehicles and only use foam for emergency response. Testing with the new foam will not commence until further tests are conducted and containment strategies are assessed. ❖ The Air Force is retrofitting fire trucks with a system that supports environmentally responsible system tests.

Air Force PFOS/PFOA Narrative:

In May of 2016 the Environmental Protection Agency changed its recommended health advisory levels for Perfluorooctanesulfonic acid and Perfluorooctanoic acid, otherwise known as PFOS and PFOA, in drinking water. These chemicals are commonly found in everyday products such as fast-food wrappers and are components of Aqueous Film Forming Foam, or AFFF, a firefighting foam used by the military and commercial airports since the 1970's in order to put out aircraft fires, protecting people and property.

The Air Force's priority is protecting human health and drinking water sources. Upon the announcement of the change of the health advisory levels, to 70 parts-per-trillion in drinking water, the Air Force directed the testing of drinking water on all of its Active Duty, Guard, Reserve and closed bases. There were 10 bases with drinking water results above the health advisory level and they have all undergone some form of mitigation to provide alternative drinking water.

The Air Force also began preliminary assessments, essentially a series of investigations to look through data and conduct interviews to learn where AFFF may have been used. Based on the preliminary assessments we have scheduled site inspections where we believe AFFF may have been discharged to discover what the levels of PFOS/PFOA may be in ground water and if there are any pathways to additional sources of drinking water.

Where we find levels in drinking water above the EPA's established health advisory and we have reasonable belief that we are the source, or part of the source, we will immediately take action to provide alternate drinking water. This may include bottled water, filtration systems or establishing connections to a different water source.

Sites that contain PFOS and PFOA fall under the Comprehensive Environmental Response, Compensation, and Liability Act, also known as CERCLA. The Air Force is following the prescriptive CERCLA process for assessment, inspection, investigation, and where necessary, clean-up. Until a site inspection report is complete, we do not know what the next step of the process will be. The process is the same CERCLA process being implemented at all PFOS/PFOA investigation sites. All steps of the process require regulatory input, review and often approval before proceeding to the next step. The Preliminary Assessment/Site Inspection stage takes approximately 1-2 years, and if required, the Remedial Investigation/Feasibility Study stage takes an additional 3-5 years.

So far, the Air Force has spent $152.5m on our PFOS/PFOA efforts. Currently we have begun 207 preliminary assessments at 39 BRAC, 94 Active Duty and Reserve bases and 74 Air National Guard bases. Of those 207 preliminary assessments 194 are complete and there are approximately 23 bases undergoing some form of drinking water mitigation efforts. As we continue to move forward in our investigations those numbers will change. There is a public website off of the Air Force Civil Engineer Center page where people can learn more. That can be found at www.afcec.af.mil

Additionally, in the summer of 2016, once a new firefighting foam that met Military Specifications was made available, the Air Force awarded a $6.2 million contract for 418,000 gallons of Phos-Chek 3

percent, six carbon chain AFFF. Delivery began in August 2016. AFFF contained in fire protection systems in hangars will be replaced in conjunction with hangar renovations. Unlike mobile fire trucks, AFFF in hangars are contained to a stationary location — a more controlled environment.

Again, where we find drinking water above the EPA established health advisory level due to Air Force operations we will promptly, at no cost to the resident, provided alternative drinking water to those impacted.