



## Testing of Per- and Polyfluoroalkyl Substances New Boston Space Force Station New Boston, New Hampshire

### INTRODUCTION

Air Force is initiating an environmental study of Per- and Polyfluoroalkyl Substances (PFAS) at the New Boston Space Force Station (NBSFS). This study will be conducted at locations at NBSFS where historic activities involving the use or storage of PFAS-containing Aqueous Film Forming Foam (AFFF) has been confirmed and, during previous studies, where PFAS has been detected in soil, groundwater, surface water and/or sediment. AFFF was formerly used at NBSFS for fire fighter training activities. The location of the sites included in the environmental study is provided in **Figure 1**.

The environmental study is necessary to (1) evaluate the total area and depth where PFAS is present in soil, groundwater, surface water, and sediment, (2) assess the potential risk/hazard to human health or the environment, as defined by the Comprehensive

Environmental Response, Compensation, and Liability Act (CERCLA) and United States Environmental Protection Agency (USEPA) risk assessment guidance, and (3) determine if an environmental cleanup is necessary to address PFAS.

At NBSFS, the Air Force Civil Engineer Center (AFCEC) acts as the lead agency in addressing environmental restoration at the base. USEPA Region I and the New Hampshire Department of Environmental Services (NHDES) are the federal and state agencies that provide regulatory oversight of environmental study and cleanup activities at NBSFS. The USEPA has ceded sole decision authority for regulatory oversight to NHDES. The United States Army Corps of Engineers (USACE) provides technical support to AFCEC for the current PFAS study activities at NBSFS.

This fact sheet provides information on PFAS and the planned PFAS study, as the planned actions once the results from the study are available.

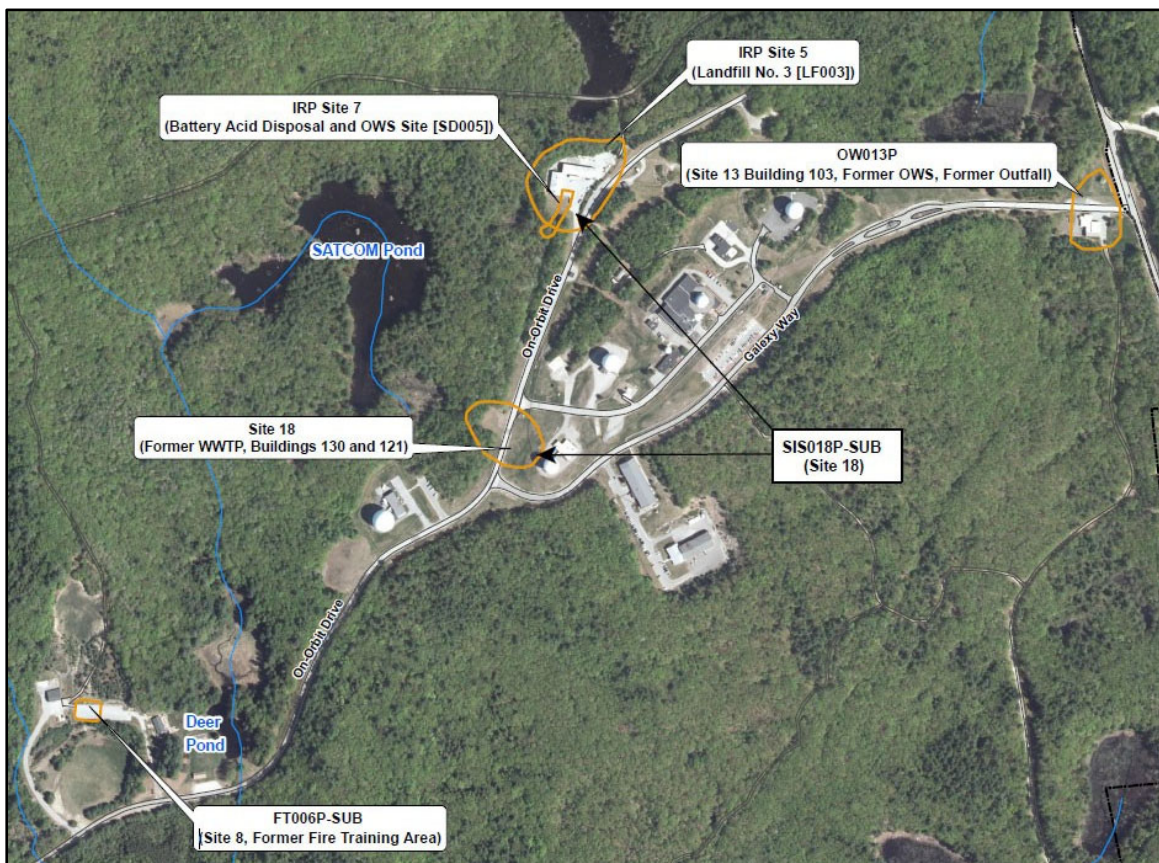


Figure 1 – Location of PFAS Phase I Remedial Investigation Sites

## ABOUT PFAS

PFAS are man-made chemicals and have been used since the 1950s in many household and industrial products because of their stain and water repellent properties. PFAS are present virtually everywhere in the world because of the large amounts that have been

manufactured and used over the decades. Once these compounds are released to the environment they break down very slowly, and thus, are present in much of the natural environment today. A conceptual schematic of the PFAS cycle is provided in **Figure 2**.

The regulation of PFAS is evolving rapidly at the state and federal levels as new science becomes available.

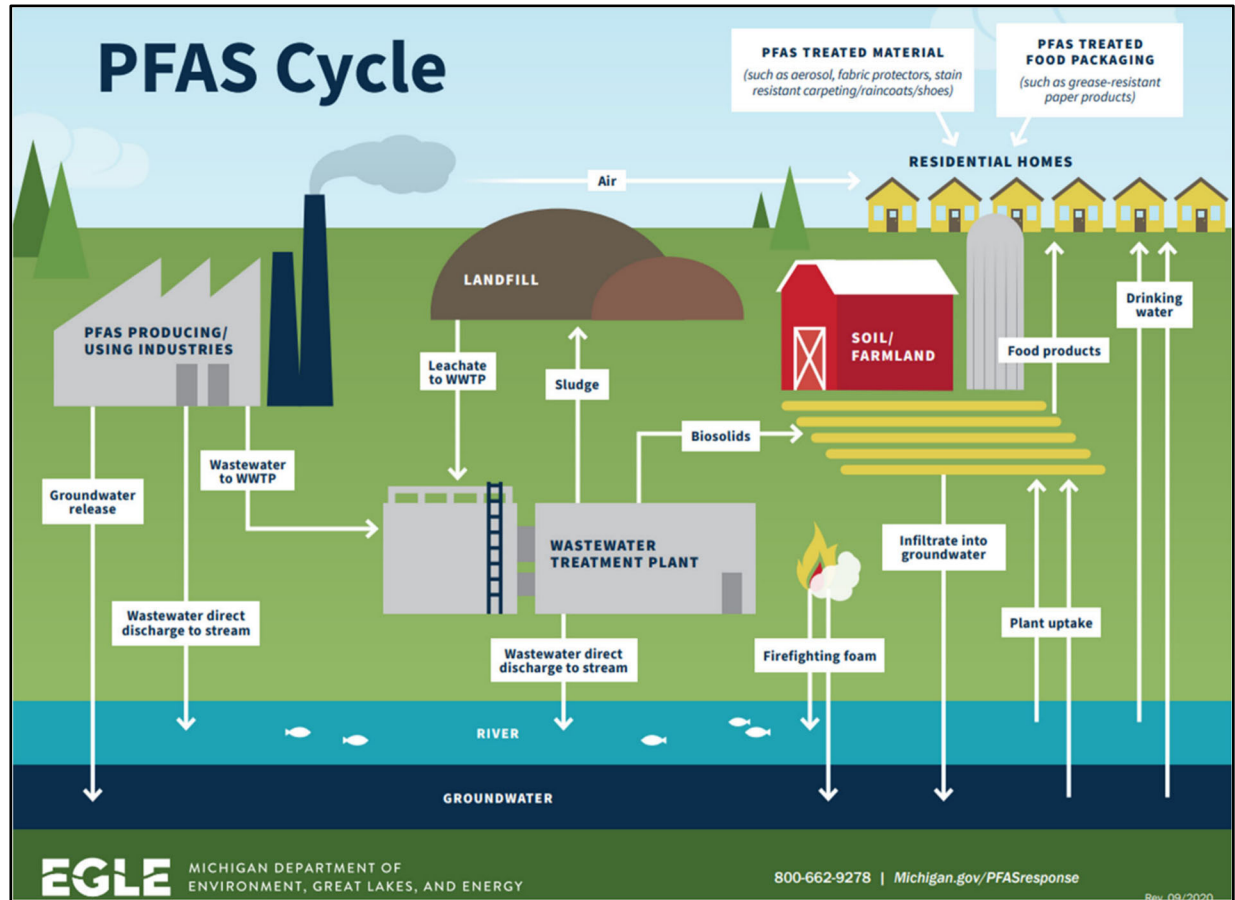


Figure 2 –PFAS Cycle (from Michigan Department of Environment, Great Lakes and Energy)

## HEALTH INFORMATION

According to the Center of Disease Control (CDC) Agency for Toxic Substances and Disease Registry (ATSDR):

*During production and use, PFAS can migrate into the soil, water, and air. Most PFAS (including PFOA and PFOS) do not break down, so they remain in the environment. Because of their widespread use and their persistence in the environment, PFAS are found in the blood of people and animals all over the world and are present at low levels in a variety of food products and in the environment. Some PFAS can build up in people and animals with repeated exposure over time.*

*Many scientific articles have been published about PFAS exposure and health effects. While it is difficult to show that substances directly cause health conditions in humans, scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful*

*health effects in humans and animals. More research is needed to better understand the health effects of PFAS exposure.*

The USEPA's Office of Water has issued health advisory levels for four PFAS, perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), perfluorobutanesulfonic acid (PFBS), and hexafluoropropylene oxide-dimer acid (HFPO-DA). Health advisory levels are not regulatory standards. They are health-based concentrations above which the USEPA recommends action should be taken to reduce exposure.

On March 14, 2023, USEPA issued proposed regulatory standards or Maximum Contaminant Level (MCLs) for PFOS, PFOA, PFBS, HFPO-DA, perfluorohexane sulfonic acid (PFHxS), and perfluorononanoic acid (PFNA).

New Hampshire has drinking water standards for four PFAS: PFOS, PFOA, PFHxS and PFNA.



## PFAS AT NBSFS

### **DoD STATEMENT REGARDING PROPOSED USEPA PFAS MCLS**

*The Department of Defense (DoD) respects and values the public comment process on this proposed nationwide drinking water rule and looks forward to the clarity that a final regulatory drinking water standard for PFAS will provide. In anticipation of the final standard that USEPA expects to publish by the end of 2023, the Department is assessing what actions DoD can take to be prepared to incorporate USEPA's final regulatory standard into our current cleanup process, such as reviewing our existing data and conducting additional sampling where necessary. In addition, DoD will incorporate nationwide PFAS cleanup guidance, issued by USEPA and applicable to all owners and operators under the federal cleanup law, as to when to provide alternate water when PFAS are present.*

The most common historic Air Force use of PFAS has been during activities involving AFFF. At NBSFS, PFAS-containing AFFF may have been used in years past for fire-fighting training. PFAS-containing AFFF releases could also be associated with AFFF storage or associated with general fire station activities, such as vehicle-washing. Due to historical base activities, residual PFAS-containing AFFF may have been routed to the former on-base wastewater treatment plant. There are no known records of the method or location of how drums associated with fire training activities were disposed. There is no evidence that they were disposed at former on-base landfills, but the potential for this is being further investigated. In addition, as PFAS have been detected in on-base water supply wells, the potential for PFAS to be routed to present-day base leach fields is also being further investigated.

Based on the results of the preliminary environmental study conducted at NBSFS for PFAS, four areas are targeted for further study: (1) former fire training area (FT006P-SUB), (2) Hilltop Fire Station (OW013P), (3) the former wastewater treatment plant (SS0018P-SUB) and (4) areas near Building 141 (SS018P-SUB). These were selected because PFAS related to AFFF use has been detected in soil, groundwater, surface water and/or sediment at concentrations that may impact health of the environment.

### **FORMER FIRE TRAINING AREA (FT006P-SUB)**

The former fire training area is located near the present-day NBSFS Community Center, west of the Operations

Area, and north of On-Orbit Drive. The source of PFAS at this site is fire training activities, where AFFF was likely discharged to the ground. Fire training activities consisted of ignition of small quantities of petroleum, oil, and lubricants, including gasoline, within half of a 55-gallon drum. The exercises took place on a monthly basis from 1974 to 1985. AFFF of variable quantities were the suppressants used in the fire training activities. In previous studies, PFAS have been detected in soil, groundwater, surface water, and sediment.

### **FIRE STATION (OW013P)**

The Fire Station is at Building 103, located at the southwest intersection of Chestnut Hill Road and Galaxy Way. The fire station is sometimes referred to as Hilltop Fire Station and is still utilized by the New Boston Fire Department. There have been no documented AFFF releases at this site. Potentially, releases could be associated with AFFF storage or associated with general fire station activities (e.g., vehicle-washing, cleaning off equipment/gear after a fire or fire-training exercises) that may have used AFFF for on-site or off-site activities.

From 1976 to 1994, fire vehicle wash water was discharged to a National Pollutant Discharge Elimination System outfall (i.e., the stormwater ditch across Galaxy Way to the north of Building 103). In 1994, a 350-gallon oil-water separator and 1,000-gallon holding tank were installed east of the building. The oil-water separator and holding tank received fire station vehicle wash water through former floor trenches until they were removed in 2001. Discharge from the former oil-water separator was trucked to the former wastewater treatment plant during system operation (1994-2001). During the oil-water separator removal project in 2001, the floor trenches in the vehicle bay of Building 103 were filled with concrete and the oil-water separator inlet pipe was capped. In previous studies, PFAS have been detected in soil, groundwater, surface water, and sediment.

### **FORMER WASTEWATER TREATMENT PLANT (SS0018P-SUB)**

The former wastewater treatment plant is near the intersection of Galaxy Way and On-Orbit Drive. One potential source of PFAS is oil-water separator discharge from Building 103. Oil-water separator discharge contained Fire Station related vehicle-wash water which was trucked to the wastewater treatment plant for disposal (1994-2001). Wastewater treatment plant effluent was discharged via a National Pollutant Discharge Elimination System outfall associated with the plant. Other sources of PFAS may have been released via the NDPES outfall given the fact that the wastewater treatment plant served the entire Operations

Area; however, no specific sources have been identified. In previous studies, PFAS have been detected in soil, groundwater, surface water, and sediment.

### **BUILDING 141 (SS0018P-SUB)**

Building 141 is in the base Operations Area adjacent to On-Orbit Drive. The source of PFAS here is not known. Building 141 was a former motor pool and overlaps former Landfill No. 3, which was a construction debris landfill operated from 1960 to approximately 1974. In previous studies, PFAS have been detected in groundwater, soil, surface water and sediment have not been sampled for PFAS near Building 141.

### **PREVIOUS DRINKING WATER WELL SAMPLING**

In 2017 and 2018, NHDES sampled off-base wells near NBSFS for PFAS. PFAS concentrations in all wells, except one, were below New Hampshire's PFAS water quality standards. The one well where PFAS were detected above New Hampshire's PFAS water quality standards is located upgradient of NBSFS and the presence of PFAS is unrelated to NBSFS activities.

PFAS has been detected in some NBSFS water-supply wells. NBSFS water-supply wells PW-1 and PW-2 are both in the vicinity of Building 141. They have been sampled periodically for PFAS from 2016 through present. Since 2020, results have been compared to New Hampshire's PFAS drinking water standards; PFAS have been detected, but no results to date have exceeded the New Hampshire drinking water standards.

PFAS were detected at the water-supply well that serves the NBSFS community center (PW-3) at concentrations above the 2016 USEPA health advisory level of 70 nanograms per liter (ng/L) and above the current NHDES drinking water standards (PFOA – 12 ng/L; PFOS – 15 ng/L; PFHxS – 18 ng/L; PFNA 11 ng/L). A water treatment system was installed to treat PFAS at this well in 2017 due to exceedances of the 2016 USEPA health advisory level.

### **NEXT STEP – PHASE I REMEDIAL INVESTIGATION**

Under Air Force's Environmental Restoration Program, PFAS studies will continue on-base. Our first priority is to conduct what's called a "Phase I Remedial Investigation", which is a study to determine where and how much PFAS is present at areas on the NBSFS property where AFFF may have been released. The Air Force will evaluate the data collected to help determine the potential need for off-base sampling.

### **POTENTIAL ACTIONS BASED ON RESULTS**

Results from the initial steps of the Phase I Remedial Investigation are expected in Spring 2024, and results from the complete investigation are expected by 2025. Air Force and NHDES may modify the sampling program based on the results of the initial steps of the investigation. Air Force will notify the community if follow on actions are necessary via the outreach tools listed in the Community Involvement Plan, which can be accessed on the Administrative Record at <https://ar.afcec-cloud.af.mil>. These could include mailings, advertisements and/or public meetings.

### **FOR MORE INFORMATION**

For answers to questions you may have on the sampling program, please contact Brett Dubner, AFCEC Remedial Project Manager, at 508-968-4670 x3001 or via email at [brett.dubner.1@us.af.mil](mailto:brett.dubner.1@us.af.mil).