



U.S. ARMY CORPS OF ENGINEERS

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OVERVIEW

This fact sheet describes investigations and response actions for per- and polyfluoroalkyl substances (PFAS) detected at the former Fort Devens property. This work is being undertaken by the U.S. Army under the Base Realignment and Closure Program (BRAC) with support from the U.S. Army Corps of Engineers (USACE).

BACKGROUND

The former Fort Devens was established in 1917 to support soldiers during World War I. After the war, the base continued to operate as a military post until it was identified for closure in 1991 as part of the Defense BRAC Program.

Under the Defense Environmental Restoration Program (DERP), the Department of Defense (DoD) is responsible for identifying, evaluating, and where appropriate, remediating contamination from DOD activities. Environmental contamination at sites that have been closed under the BRAC program are addressed under DERP by the Army. The Army's BRAC Environmental Restoration Program is a comprehensive program for identifying, investigating, and cleaning up contamination at closing and realigning installations with transferrable property.

In 1991, the Army and the U.S. Environmental Protection Agency (EPA) signed a Federal Facility Agreement which named the Army as the lead agency and the EPA as the lead regulatory agency to provide oversight. The Massachusetts Department of Environmental Protection (MassDEP) was named as a participant. The Army also works with several stakeholders to address input on the environmental cleanup and is responsible for the Community Involvement Plan.

PFAS are a diverse group of man-made compounds that are resistant to heat, water, and oil. PFAS were previously referred to as perfluorinated compounds (PFCs).

For decades these substances have been used in hundreds of industrial applications and common household products such as non-stick pots and pans, carpeting, apparel, upholstery, food paper wrappings, and fire-fighting foams. PFAS can be found in well-known name-brand products that are heat-, stain-, grease- and water-resistant. The Army's most frequently used PFAS-containing product was Aqueous Film-Forming Foam (AFFF), which was used to fight petroleum fires. Military use of AFFF began in the 1970s including Former Fort Devens. It was most widely used at DoD installations with airfields.

In May 2016, EPA issued guidance for evaluating the safety of drinking water which specified a Lifetime Health Advisory (LHA) concentration of 70 parts per trillion (ppt) for the combination of two PFAS compounds: perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). Many states have since issued similar, or stricter, standards for PFAS contamination.

In December 2019, MassDEP proposed a maximum contaminant level (MCL) for drinking water of 20 ppt for the sum of the following six PFAS compounds:

- PFOS
- PFOA
- perfluorononanoic acid (PFNA)
- perfluorohexanesulfonic acid (PFHxS)
- perfluoroheptanoic acid (PFHpA)
- perfluorodecanoic acid (PFDA)

In 2020, MassDEP also established a cleanup standard of 20 ppt for those six PFAS compounds in groundwater as well as additional standards for PFAS in soil.

PFAS INVESTIGATIONS

In 2016, the Army detected PFAS in groundwater at some locations within the former Fort Devens property. At that time, PFAS was also detected in municipal water supply wells at Devens and the town of Ayer, Massachusetts. As discussed above, the

Army is currently conducting investigations under the DoD's DERP in accordance with the provisions of the U.S. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, Executive Orders 12580 and 13016, and the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), in order to identify the extent of PFAS and determine appropriate response actions to protect human health and the environment.

In accordance with CERCLA, the Army first conducted a Preliminary Assessment to identify potential Areas of Contamination (AOCs) where there was a potential for the use, storage, or disposal of PFAS-containing products at Fort Devens. Refer to the Attached Figure. The subsequent Site Inspection confirmed the presence of PFAS in groundwater, soil, surface water, and/or sediment at several study areas and AOCs.

Environmental activities relating to PFAS are currently in the Remedial Investigation (RI) phase. The purpose of the RI is to determine the nature and extent of PFAS contamination at Fort Devens. The RI also examines the fate and transport of PFAS contamination and evaluates the associated risks to human health and the environment.

Data and documents associated with the PFAS investigations are available for public review on the Fort Devens Environmental Restoration Program website (link provided at the bottom of the page).

After completion of the RI, the Army will conduct a Feasibility Study to help select Remedial Action(s) that will be selected in a formal Record of Decision to be signed by the Army and EPA.

PUBLIC WATER SUPPLY WELLS

In 2018, the town of Ayer shut down Well #8 at the Grove Pond Wellfield due to PFAS contamination. The Army's initial phase of the RI suggested that groundwater containing PFAS from historical Army operations was migrating from former Fort Devens and impacting Ayer's Water Supply Well #8 at a concentration above regulatory standards. Therefore, in July 2019, the Army installed a temporary treatment system (carbon filter) at Well #8 as a "Time-Critical Removal Action" under CERCLA. A permanent water treatment facility designed to remove PFAS from Grove Pond wells is planned to be completed in the fall 2020.



FIGURE: Grove Pond Temporary Treatment System

The Devens Utilities Division of MassDevelopment has implemented measures to treat Devens public supply well water independently from the actions taken by the Army for Ayer's Grove Pond wells. In 2017, the Devens Water Division identified PFAS levels above the MassDEP Office of Research and Standards 2018 Guideline for the sum of 5 for PFAS, but below the EPA LHA in the MacPherson supply well. In February 2018, the MacPherson supply well was taken out of service. The Devens Water Division relied on two other wells, the Shabokin and Patton Wells, while the MacPherson well was offline. However, sampling conducted at the Shabokin and Patton wells had also shown PFAS exceeding the MassDEP 2018 guideline of 20 ppt, but below the EPA LHA of 70 ppt in both the Shabokin and Patton wells. MassDevelopment initially supplied bottled drinking water to its customers and subsequently installed treatment systems (carbon filters) at the MacPherson well in June 2019, with re-activation of the well occurring in August 2019, and on the Shabokin well in July 2019, with treatment beginning in August 2019. The Patton supply well was taken out of service in October 2019 and re-activated with carbon filters in March 2020.



FIGURE: MassDevelopment Shabokin Well Treatment System

The Army continues to sample the town of Ayer's public water supply wells at Grove Pond and Spectacle Pond on a quarterly basis. MassDevelopment similarly samples the MacPherson, Patton, and Shabokin drinking water supply wells. Drinking water currently being delivered to Ayer and Devens public water supply customers meets state and federal PFAS standards.

PRIVATE WELLS

In 2018, the Army prepared an inventory of private wells located within a 1-mile radius of known PFAS contamination at Fort Devens. Although there was no known hydrogeologic connection to Fort Devens groundwater, the Army sampled many of these private wells out of an abundance of caution.



To date, the Army has sampled 150 private wells in the towns of Ayer, Shirley, and Harvard, MA. This includes wells located at private residences, housing facilities, and local businesses. No wells had PFAS detections above the EPA LHA. Only 13 of the 150 sample locations had PFAS detections greater than

the MassDEP 2020 guideline of 20 ppt for the total sum of the 6 PFAS compounds and no wells were greater than the EPA LHA. It is not yet known if the PFAS detected in some of these wells is related to

the past use of PFAS at the former Fort Devens or if it is due to another source. Further work is being conducted as part of the RI to understand groundwater flow and transport of the PFAS compounds and their related sources.

HEALTH INFORMATION

Exposure to PFAS is a global concern due to its widespread use in both household and industrial products. Studies have found PFAS in blood samples of the general population worldwide. Studies on exposed populations indicate that PFOS and/or PFOA may cause elevated cholesterol levels and low infant birth weight. Exposure to certain PFAS compounds may also cause a variety of health effects including developmental effects in fetuses and infants, and effects on the thyroid, liver, kidneys, certain hormones, and immune system. Some studies suggest a cancer risk may also exist in people exposed to higher concentrations of some PFAS compounds. Scientists and regulators are continuing to work to better understand the health risks posed by exposure to PFAS.

NEXT STEPS FOR PFAS INVESTIGATIONS

The Army is continuing to investigate PFAS contamination believed to be associated with past operations at the former Fort Devens. Upcoming PFAS sampling efforts under the RI will include groundwater sampling, the installation of bedrock wells, and a thorough review of the RI data collected to date with the BRAC Cleanup Team (BCT).

The filtration (removal) of PFAS from the municipal water supply wells will continue at Ayer's Grove Pond Well #8 and MassDevelopment's MacPherson, Patton, and Shabokin wells.

The Army will continue to keep the public informed about the status of the ongoing PFAS investigations. The Army will be issuing an update to the Community Involvement Plan this summer. A virtual Restoration Advisory Board (RAB) meeting that is open to the public is being considered for fall 2020.

For more information on the ongoing PFAS RI at the former Fort Devens, please contact the Devens Environmental Base Realignment and Closure (BRAC) Coordinator, Mr. Robert Simeone at 978-615-6090 or visit the former Fort Devens Environmental Restoration Program website listed at the bottom of this page.

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