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OVERVIEW

This fact sheet describes the sampling of private drinking water wells in the vicinity of the former Fort Devens for per- and polyfluoroalkyl substances (PFAS). 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. 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 and by local fire departments specifically to extinguish roadside vehicle fires.

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.

Effective as of October 2020, MassDEP set a maximum contaminant level (MCL) for public drinking water systems 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)

Earlier 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.

PRIVATE/COMMUNITY WELL SAMPLING

In 2018, the Army identified private wells located within a 1-mile radius from known PFAS detection in groundwater at the former 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. The Army worked with the local board of health to identify private wells to be sampled and obtained approvals from property owners.

To date, the Army has sampled 138 private well locations in the towns of Ayer, Shirley, and Harvard, Massachusetts and 7 community wells at housing facilities and local businesses in the towns of Harvard and Lancaster, including Vanguard Medical, Foxglove Apartments, Shaker Place, the Massachusetts Correctional Institution (MCI) Shirley, Harvard Green Condominiums, Ayer Road Properties, and Appleworks. Community wells are regulated by MassDEP whereas private wells are regulated by the local board of health.



SUMMARY OF RESULTS

None of the sampled private wells had PFAS detections exceeding the EPA LHA of 70 ppt; however, a few had PFAS detections that exceeded the MassDEP standard of 20 ppt for the sum of 6 PFAS compounds (see summary tables). In June 2020, the Army resampled many of the private wells that had previously exceeded the 20 ppt benchmark in order to verify the results. It is not yet known if the PFAS detected in 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 under a CERCLA remedial investigation to understand groundwater flow and transport of the PFAS compounds and their related sources.



Presented below are the result summaries by street location of the most recent 2019/2020 sample activities conducted in Ayer, Shirley, and Harvard,

Massachusetts. The results are based on the sum of 6 PFAS compounds.

Ayer/Shirley Private Well PFAS Results Summary				
Location	Number of Wells Sampled	Number Exceeding 20 ppt	Number Detects <20 ppt	Number of Non-Detects
Groton Shirley Rd	8	0	4	4
James Brook Way	3	0	2	1
Great Rd	2	1	1	0
Subtotals	13	1	7	5

Harvard Private Well PFAS Results Summary				
Location	Number of Wells Sampled	Number Exceeding 20 ppt	Number Detects <20 ppt	Number of Non-Detects
Myrick Lane	21	0	7	14
Ayer Rd	18	3	8	7
Old Mill Rd	27	0	14	13
Blanchard Rd	22	11	9	2
Cedar Ledge Rd	2	0	1	1
Lancaster Cty Rd	12	3	7	2
Old Shirley Rd	1	0	0	1
Depot Rd	19	1	9	9
Prospect Hill Rd	3	0	0	3
Subtotals	125	18	55	52

Presented below are the results summaries by town of the community well sampling. The specific community well PFAS results are available through the MassDEP data portal at the following address: <https://eeonline.eea.state.ma.us/portal#!/home>.

Community Well PFAS Results Summary				
Location	Number of Wells Sampled	Number Exceeding 20 ppt	Number Detects <20 ppt	Number of Non-Detects
Harvard	6	2	2	2
Lancaster	1	0	1	0
Subtotals	7	2	3	2

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

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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

The Army is continuing to investigate PFAS contamination associated with past operations at the former Fort Devens. The Army will continue to keep the public informed about the status of the ongoing PFAS investigations. A virtual Restoration Advisory Board (RAB) meeting that is open to the public is planned for November 19, 2020 at 6:30 PM. A Zoom link will be posted on the Army's Fort Devens website for public attendance to the Virtual RAB meeting.

For more information 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.