YARMOUTH WATER DEPARTMENT
FULL SCALE DEMONSTRATION WITH FLUORO-SORB® ADSORBENT

BACKGROUND:
Yarmouth Water Department in Massachusetts serves drinking water to the coastal community at an average rate of 4 MGD. This region fluctuates in population seasonally, with rouglhy 20,000 people in the cold season and up to 40,000 people in the warm months. With the fluctuation in demand, the district has a drought action plan to ensure sufficient drinking water supply for during peak months, which includes blending source water from various wells within the district.

CHALLENGE:
Per- and polyfluoroalkyl substances (PFAS) exceeding the MassDEP PFAS 6 and U.S. EPA maximum contaminants levels were detected in wells 4 and 5, which contributes 0.8 MGD to the water department during periods of high demand. Influent PFAS included PFBS, PFHxA, PFHxS, PFHpA, PFOA, and PFOS at concentrations ranging from 1.8 to 9 ng/L. A full-scale demonstration using FLUORO-SORB® Adsorbent was designed by Kleinfelder Engineering that utilized WaterPOD mobile water systems procured from AdEdge™ Water Technologies. Two pods contain iron and manganese treatment (Fe/Mn) and two contain PFAS treatment vessels. Each PFAS treatment WaterPOD contained six vessels (5 ft) with FLUORO-SORB Adsorbent in three lead/lag pairs. This system was installed in early 2024.

Figure 1. (Top) WaterPOD containing filtration vessels, manufactured by AdEdge™ Water Technologies at the treatment facility for Yarmouth Water Department. (Bottom) Cross section of a WaterPOD mobile water unit housing vessels containing FLUORO-SORB Adsorbent oriented in 3 lead / lag pairs

RESULT:

This system has treated approximately 95,000 bed volumnes to date and remains in operation. Treated water samples were collected from wells 4 and 5 roughly every 45 days, from February 2024 until April 2026. Treated samples were evaluated with U.S. EPA method 537.1, where the reporting limit of individual PFAS was 1.8 ng/L. The water department reports that PFAS removal remains sufficient to date and test results will continue to be published in 2026. PFAS concentrations in influent from wells 4 and 5 as well as the method reporitng limits (RL) are displayed in Figure 2 as reported by the Massachusetts Energy and Environmental Affairs Drinking Water Data Portal (*https://eeaonline.eea.state.ma.us/Portal/#!/search/drinking-water*) .

Key Take-Away: No PFAS regulated by the U.S. EPA or MassDEP have been detected in treated drinking water since the installation of FLUORO-SORB® Adsorbent.

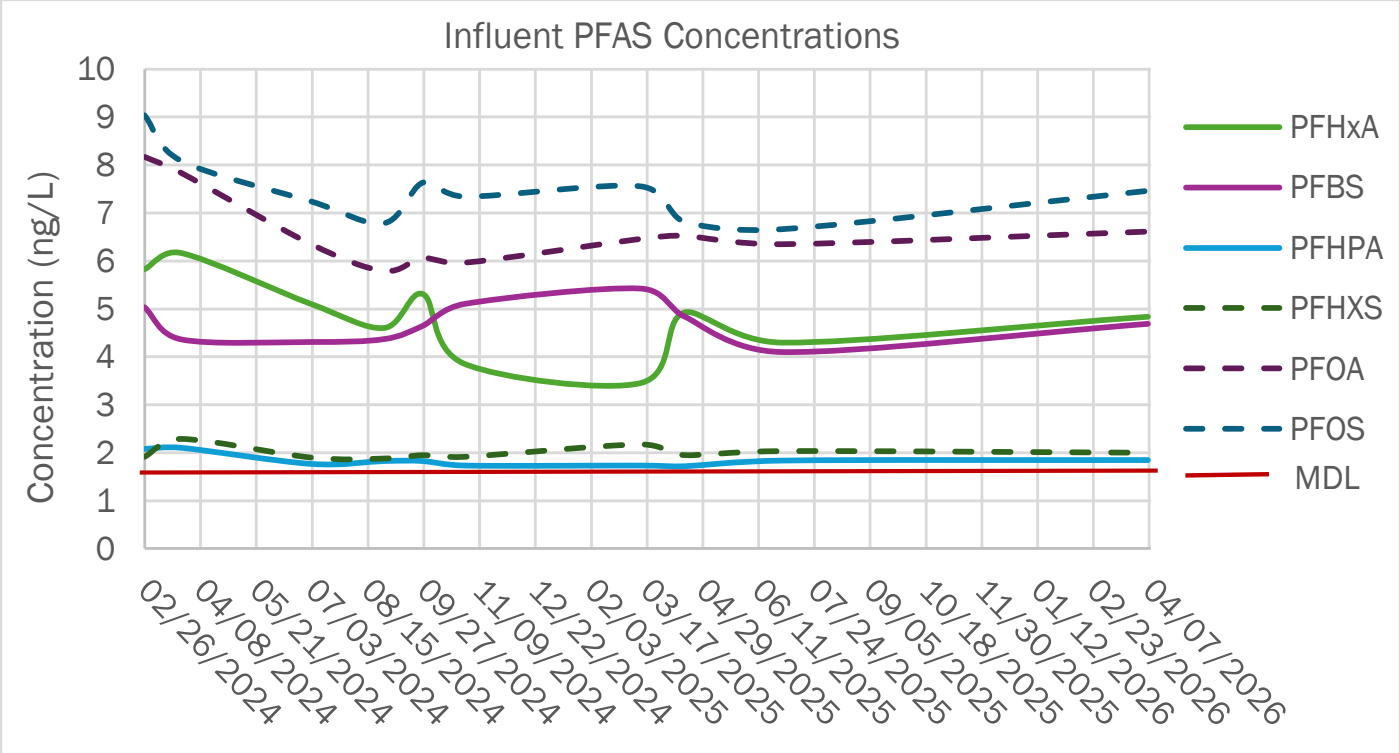

Figure 2. Influent PFAS sampling results for PFBS, PFHxA, PFHxS, PFHpA, PFOA, and PFOS. Screening of influent samples concluded in June 2025, data beyond this time was extrapolated from the average influent levels during screening.

No PFAS regulated by the U.S. EPA or MassDEP have been detected in treated drinking water since installation (95,000 Bed Volumes, 2 years + 2 months of installation)

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