# PFAS (Per- and Polyfluoroalkyl Substances) in Bottled Water

In 2022, Massachusetts Department of Public Health (MDPH) conducted a pilot surveillance program on PFAS in bottled water sold in Massachusetts. **All bottled water test results met state and federal drinking water standards for PFAS.**

PFAS are a group of ﬂuorinated organic chemicals that are used in many consumer products (e.g., non- stick cookware, textiles, and paper food packaging) and some ﬁre-ﬁghting foams. PFAS are persistent in the environment and may cause adverse human health eﬀects. For more information about PFAS, see [PFAS in drinking water.](https://www.mass.gov/service-details/per-and-polyfluoroalkyl-substances-pfas-in-drinking-water)

# PFAS in Bottled Water Pilot Program

In 2022, MDPH’s Food Protection Program (FPP) completed the ﬁrst phase of a bottled water PFAS sampling pilot program. In coordination with local boards of health, FPP purchased bottled water from retail stores throughout Massachusetts. FPP collected 287 bottled water samples representing 9 brands from out-of-state bottling plants.

In 2023, FPP competed the second phase of the bottled water testing program by collecting samples during routine inspections of in-state bottling plants. FPP collected 30 bottled water samples representing 3 brands from in-state bottling plants.

All bottled water samples collected in 2022 and 2023 were shipped to a commercial laboratory and analyzed for 18 PFAS using an [EPA approved method (537.1).](https://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=343042&Lab=NERL)

# Results of PFAS Testing in Bottled Water

All bottled water test results met the Massachusetts Department of Environmental Protection’s (MassDEP’s) drinking water standard and the U.S. Environmental Protection Agency’s (EPA’s) proposed draft drinking water standard. In Massachusetts, MassDEP has established a maximum contaminant level (MCL; which is an enforceable standard) for six PFAS (PFAS6) that is safe for daily exposure, for a lifetime. EPA has also proposed an MCL for six other PFAS. For the latest information on drinking water standards see [MassDEP’s PFAS site.](https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas)

No samples had quantiﬁable levels of PFAS (>2 ppt for most PFAS). Laboratory results can be seen in Tables 1 and 2. Table 1 shows the results of the PFAS6 and Table 2 shows the results of the remaining 12 PFAS. PFAS were detected but not quantiﬁable in a few samples. If a contaminant is detected but not quantiﬁable, this means that the instrument could detect the presence of the contaminant, but the concentration of the contaminant was below the level that the laboratory’s instrument can accurately and precisely quantify (> 2 ppt for most PFAS).

Table 1 ‐ All tests of bottled water were below the Massachusetts Department of Environmental Protection drinking water standard's maximum contaminant level of 20 parts per trillion (ppt) for the sum of the concentrations of six PFAS.

Max PPT in 10 bottles **Total**

**Brands Tested in 2022** PFDA PFHpA PFHxS PFNA PFOA PFOS **PFAS6**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Acadia Spring Water | ND | ND | ND | ND | ND | ND | **ND** |
| Acqua Panna Natural Spring Water | ND | ND | ND | ND | ND | ND | **ND** |
| Aquafina | ND | ND | ND | ND | ND | ND | **ND** |
| Aquafina (16.9 oz) | ND | ND | ND | ND | ND | ND | **ND** |
| Big Y Alkaline | ND | ND | ND | ND | ND | ND | **ND** |
| Big Y Spring Water (16.9 oz) | ND | ND | ND | ND | ND | ND | **ND** |
| Body Armor Alkaline | ND | ND | ND | ND | ND | ND | **ND** |
| Bowl & Basket Spring Water | ND | ND | ND | ND | ND | ND | **ND** |
| Boxed Water is Better | ND | ND | 0.638 | ND | ND | ND | **0.64** |
| CORE Hydration | ND | ND | 0.54 | ND | ND | ND | **0.54** |
| Crystal Geyser Natural Alpine | ND | ND | ND | ND | ND | ND | **ND** |
| Dasani | ND | ND | ND | ND | ND | ND | **ND** |
| Essentia Ionized Hydration | ND | ND | 0.468 | ND | ND | ND | **0.47** |
| Eternal Spring Water | ND | ND | 0.625 | ND | ND | ND | **0.63** |
| Evian Spring Water | ND | ND | ND | ND | ND | ND | **ND** |
| FIJI | ND | ND | 0.552 | ND | ND | ND | **0.55** |
| Gerber Pure | ND | ND | ND | ND | ND | ND | **ND** |
| Great Value Purified DW | ND | ND | ND | ND | ND | ND | **ND** |
| Just Water | ND | ND | 0.479 | ND | ND | ND | **0.48** |
| KEWL Alkaline | ND | ND | 0.902 | ND | ND | ND | **0.90** |
| LifeWtr (23.7 oz) | ND | ND | ND | ND | ND | ND | **ND** |
| LifeWtr pH Balanced | ND | ND | ND | ND | ND | ND | **ND** |
| Nestle Pure Life | ND | ND | ND | ND | ND | ND | **ND** |
| Poland Spring | ND | ND | 0.683 | ND | 0.666 | ND | **1.35** |
| PurAqua Purified Water | ND | ND | 0.51 | ND | ND | ND | **0.51** |
| PurAqua Spring Water | ND | ND | ND | ND | ND | ND | **ND** |
| Sam's Purified | ND | ND | ND | ND | ND | ND | **ND** |
| SmartWater | ND | ND | 0.502 | ND | ND | ND | **0.50** |
| TJ Alkaline Water | ND | ND | 0.468 | ND | ND | ND | **0.47** |
| TJ Natural Spr Wtr | ND | ND | 0.483 | ND | ND | ND | **0.48** |
| WF 365 Spring Water | ND | ND | 0.47 | ND | ND | ND | **0.47** |
| WF Italian Mineral Wtr (7 bottles) | ND | ND | 0.582 | ND | ND | ND | **0.58** |

**Brands Tested in 2023**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Aquafina (16.9 oz) | ND | ND | ND | ND | ND | ND | **ND** |
| Big Y Spring Water (16.9 oz) | ND | ND | ND | ND | ND | ND | **ND** |
| LifeWater (23.7 oz) | ND | ND | ND | ND | ND | ND | **ND** |

ND = Non‐detect

= Detected, Not Quantifiable

Table 2 ‐ No bottled water tested had measurable levels of PFAS (> 2 ppt)

Max PPT in 10 bottles

**Brands Tested in 2022**

11Cl‐PF3OUdS

9Cl‐PF3ONS

HFPO‐DA (GenX)

NaDONA

NEtFOSAA

NMeFOSAA

PFBS

PFDoA

PFHxA

PFTreA

PFTriA

PFuNA

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acadia Spring Water | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Acqua Panna Natural Spring Water | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Aquafina | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Big Y Alkaline | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Body Armor Alkaline | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Bowl & Basket Spring Water | ND | ND | ND | ND | 1.13 | 1.05 | ND | ND | ND | ND | ND | ND |
| Boxed Water is Better | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| CORE Hydration | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Crystal Geyser Natural Alpine | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Dasani | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Essentia Ionized Hydration | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Eternal Spring Water | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Evian Spring Water | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| FIJI | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Gerber Pure | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Great Value Purified DW | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Just Water | ND | ND | ND | ND | ND | ND | 0.901 | ND | ND | ND | ND | ND |
| KEWL Alkaline | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| LifeWtr pH Balanced | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Nestle Pure Life | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Poland Spring | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| PurAqua Purified Water | ND | ND | ND | ND | ND | ND | 1.29 | ND | ND | ND | ND | ND |
| PurAqua Spring Water | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Sam's Purified | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| SmartWater | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| TJ Alkaline Water | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| TJ Natural Spr Wtr | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| WF 365 Spring Water | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| WF Italian Mineral Wtr | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

**Brands Tested in 2023**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aquafina (16.9 oz) | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Big Y Spring Water (16.9 oz) | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| LifeWtr (23.7 oz) | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |

ND = Non‐detect

= Detected, Not Quantifiable