ProVerde Environmental
Analytical PFAS Testing

# Technical Guide to PFAS Mitigation Options for Massachusetts Private Well Households

If your private well in Massachusetts has tested above the state's PFAS6 guideline of 20 ppt (or the EPA's 2025 MCLs, e.g., 4 ppt for PFOA/PFOS), point-of-use (POU) and point-of-entry (POE) treatment systems are effective household-scale solutions. These technologies—primarily granular activated carbon (GAC), reverse osmosis (RO), and ion exchange (IX)—can reduce PFAS by 80–99%, depending on the compound chain length (longer chains like PFOS remove more easily than short-chain like PFBA). However, no system is 100% effective for all 15,000+ PFAS variants; post-installation testing is essential.

This guide focuses on technical details for households: system types, performance metrics, pros/cons, cost breakdowns, and research resources. Costs are 2025 estimates in USD, including installation (DIY where possible) and annual maintenance; actuals vary by water usage (assume 100–200 gal/person/day) and PFAS loading. Always verify NSF/ANSI 53 (for PFOA/PFOS reduction to <20 ppt combined) or 58 (RO-specific) certifications via manufacturer data, as standards updated in 2023 to include more PFAS (e.g., PFHxS, PFNA).

## Understanding POU vs. POE Systems

- **POU**: Treats water at a single point (e.g., kitchen faucet for drinking/cooking). Ideal if ingestion is the primary concern (PFAS risks are mainly oral, not dermal/inhalation).
- **POE**: Treats all incoming water at the wellhead. Better for whole-home protection but overkill if PFAS is low and non-volatile.
- **Key Metric**: Breakthrough (when media saturates and PFAS passes through) occurs faster with higher inlet concentrations (>100 ppt shortens GAC life by 50%).

| Aspect | POU | POE |
|---|---|---|
| **Treatment Scope** | Single tap (e.g., 5–10 gal/day) | Entire home (500–2,000 gal/day) |
| **Flow Rate** | Low (0.5–2 gpm) | High (5–15 gpm) |
| **Installation** | DIY or plumber (1–2 hrs) | Professional (4–8 hrs; may need electrical/plumbing mods) |
| **Wastewater** | Minimal (RO: 3–4:1 ratio) | High for RO (not septic-compatible in MA Title 5) |
| **Best For** | Budget-conscious; renters | Families with children/elderly; high usage |

## Technology Options: Pros, Cons, and Performance

Select based on your PFAS profile (from lab report: e.g., EPA Method 537.1 tests 18 compounds). GAC/IX suit most; RO for broad-spectrum.

| Technology | Description & Performance | Pros | Cons | Typical Household Fit |
|---|---|---|---|---|
| **Granular Activated Carbon (GAC)** | Adsorbs PFAS onto porous carbon media. >95% removal for long-chain (PFOA/PFOS); 70–90% for short-chain. Capacity: 1,000–10,000 bed volumes (BV) before breakthrough. | Low energy; no wastewater; treats taste/odor too. NSF 53 certified options reduce to <20 ppt. | Saturates over time (replace every 6–24 months); less effective for short-chain PFAS; requires backwashing (POE). | POU: Pitchers/under-sink for low-flow. POE: Whole-home for moderate contamination (<500 ppt). |

*This resource was compiled by ProVerde Environmental LLC. to help Massachusetts families navigate PFAS concerns. We have no financial relationship with any company mentioned. All information comes from public sources (MassDEP, NSF, peer-reviewed studies, etc. as of November 2025). Please verify current pricing, certifications, and performance with providers and always have your water re-tested after installation.*

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|---|---|---|---|---|
| **Reverse Osmosis (RO)** | Membrane (0.0001–0.001 µm pores) rejects PFAS ions. 95–99% removal across all chains; often non-detect. Rated for 75–300 gal/day. | Broad-spectrum (also removes salts/heavy metals); compact. NSF 58 certified to <5 ppt. | Wastes 2–5 gal per gal treated; slow flow (needs storage tank); mineral stripping (add remineralizer). | POU: Countertop/under-sink for drinking water only. Avoid POE due to waste volume. |
| **Ion Exchange (IX)** | Resin beads bind charged PFAS. 90–99% for anionic PFAS; regenerable with brine. Capacity: 500–5,000 BV. | High selectivity; regenerable (less waste). Complements GAC. | Brine discharge (environmental regs); less effective for neutrals; pH-sensitive. | Hybrid POU/POE: For high-PFAS wells (>1,000 ppt); pair with GAC. |

**Performance Notes**: Real-world efficacy drops 10–20% with high flow or competing organics (e.g., humics). Test effluent quarterly initially. MA-specific: RO concentrate can't discharge to septic (Title 5); haul off-site.

## Recommended Certified Systems for Households

Search NSF's database for latest certifications (updated Nov 2025). Below are top-rated examples from 2025 reviews; verify PFAS6 claims.

| System Type | Examples (NSF 53/58 Certified) | Upfront Cost | Annual Maintenance | Where to Research/Buy |
|---|---|---|---|---|
| POU Pitcher | ZeroWater 5-Stage ($35–50); Clearly Filtered ($90) | $20–100 | $50–100 (filters every 2–6 mo) | Amazon; NSF site for lab results. Pros: Portable. Cons: Low volume (40–150 gal/filter). |
| POU. Refrigerator Built-in Filter | GE XWFE ($40–60 OEM; Waterdrop WD-F32 $10–15 aftermarket); LG LT1000P ($40–50); Whirlpool EveryDrop Filter 4 (UKF8001, $40–50) | $10–60 (per filter; no install) | $40–100 (replace every 3–6 mo) | Amazon/Home Depot; NSF database for PFAS claims. Pros: Integrated for ice/dispensing (0.5–1 gpm). Cons: Limited volume (100–300 gal/filter); fridge-specific fit |
| POU Under-Sink | Aquasana AQ-5300+ ($200–300); Waterdrop G3 P800 ($400–500) | $200–600 (incl. install) | $100–200 (cartridges 6–12 mo) | Home Depot; Manufacturer specs for BV ratings. Pros: 1–2 gpm. Cons: Plumbing needed. |
| POU Countertop RO | AquaTru ($450); iSpring RCC7 ($200) | $200–500 | $50–150 (membranes 1–2 yrs) | aquatruwater.com; EPA filter guide for RO waste calcs. Pros: No install. Cons: Electricity use (50W). |
| POE GAC | SpringWell WS1 ($1,500–2,000); Culligan WH-HD200-C ($1,000) | $1,000–3,000 (pro install) | $200–500 (media 1–3 yrs) | cleanwaterstore.com; Breakthrough curves in studies. Pros: Whole-home. Cons: Space (2–4 ft tank). |
| POE RO/IX Hybrid | Pioneer PFAS POE ($2,500–4,000) | $2,000–5,000 | $300–600 (resin/media 2–5 yrs) | wqa.org database. Pros: Comprehensive. Cons: High waste; $0.05–0.10/gal operating cost. |

**Cost Breakdown Example (4-person household, 400 gal/day total, 50 gal drinking)**:

- POU RO: $400 upfront + $100/yr = ~$0.05/gal treated (drinking only).
- POE GAC: $2,000 upfront + $300/yr = ~$0.02/gal total water.
- Total 5-yr ownership: POU ~$900; POE ~$3,500. Grants may offset 20–100% (see below).

## Implementation Steps for MA Households

1. **Retest & Profile**: Use MA-certified lab (e.g., EPA 537.1; $300–500). Check MassDEP dashboard for local hotspots.
2. **Select & Size**: Match flow to usage; factor pH (6.5–8.5 optimal for GAC/IX). Consult plumber for pressure drop (<5 psi).
3. **Install & Monitor**: Professional for POE; test influent/effluent at 1, 3, 6 mo, then annually. Log BV to predict replacement.
4. **Maintenance**: Backwash GAC weekly; regenerate IX per manual. Dispose media as hazardous waste (MA DEP guidance).
5. **Waste Handling**: RO reject: Evaporate/store; GAC: Incinerate/regenerate (cost $0.50–1/lb).

## Financial & Regulatory Assistance in MA (2025)

- **Grants/Loans**: EC-SDC Grant (up to $1M for disadvantaged areas; apply via MassDEP). Ipswich River PFAS Grant ($950K for basin towns). MCP sites: Polluter pays 100% (call 1-888-304-1133).
- **Loans**: Mass Clean Water Trust (0–2% interest for POE).
- **Low-Income Aid**: RCAP (free tech help; 1-800-488-1969).
- **Tax Credits**: Federal 30% for energy-efficient RO (IRA 2022).

## Key Resources for Research

Dive deeper with these for pros/cons, modeling tools, and peer-reviewed data:

| Resource | Focus | Link |
|---|---|---|
| NSF Certified Database | Searchable list of 100+ POU/POE systems; filter by PFAS reduction claims. | info.nsf.org/Certified/DWTU |
| EPA PFAS Filter Guide | Technical overviews, RO waste calcs, certified RO list. | epa.gov/water-research/identifying-drinking-water-filters-certified-reduce-pfas |
| PA DEP NSF 53 POU List (Nov 2025 PDF) | 50+ certified POU units with performance data (applicable to MA). | files.dep.state.pa.us/.../Point_of_Use_Devices_Certified_for_Reduction_of_PFAS_final.pdf |
| Penn State Extension Guide | Tables on costs, media life, tech comparisons; includes IX details. | extension.psu.edu/home-water-treatment-for-pfas |
| MassDEP/UMass POU Study (2021 Final) | Lab tests on 17 POU devices; 90%+ removal rates, throughput data. | mass.gov/doc/.../download |
| NC State POU/POE Study (2019) | 73 systems tested; % removal by PFAS type (Table S9). | pubs.acs.org/doi/10.1021/acs.est.9b00519 |
| ScienceDirect LCA Review (2024) | Meta-analysis of 22 studies; costs/climate impacts (0.1–70 kg CO2/g PFAS removed). | sciencedirect.com/science/article/pii/S0048969724069213 |

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| EPA Tech/Cost Report (2024) | Graphs for RO/GAC costs; POU RO at $0.10–0.50/gal. | epa.gov/system/files/documents/2024-04/2024-pfas-tech-cost_final-508.pdf |
| MassDEP Private Well FAQ | MA-specific treatment guidance, bottled water lists, lab finder. | mass.gov/info-details/pfas-in-private-well-drinking-water-supplies-faq |
| WQA Product Finder | Gold Seal certified alternatives to NSF; user reviews. | wqa.org/find-products |
| QualityWaterLab 2025 Picks | Expert scores on 5 top systems; flow/cost metrics. | qualitywaterlab.com/contaminants/water-filters-for-pfas |
| WaterFilterGuru 2025 Review | Lab-tested % removal for PFAS; Culligan/ZeroWater data. | waterfilterguru.com/best-water-filter-for-pfas |

For personalized advice, contact MassDEP (617-292-5770) or a certified water specialist. Retest annually—PFAS doesn't degrade. This guide is informational; consult pros for site-specific design.

## Companies Offering PFAS Mitigation for Residential/Private Wells in Massachusetts

Based on current (November 2025) resources, I've expanded the list of companies specializing in PFAS mitigation for private wells in Massachusetts. This focuses exclusively on residential services like testing (e.g., PFAS6 via EPA Methods 537.1/533), custom POU/POE installations (GAC, RO, IX systems), maintenance, and filter disposal. These providers often partner with MassDEP for compliance and can handle MCP-related cases where a responsible party covers costs.

The expansion draws from state directories, vendor sites, and recent grants/projects. No exhaustive official list exists, but these are vetted for MA operations and private well expertise. Costs typically range $200–$1,000 for POU testing/installs and $1,500–$5,000 for POE (plus $100–$500/year maintenance); many offer free quotes and NSF-certified options. Always verify certifications and get multiple bids.

| Company | Services | MA-Specific Notes | Contact/Website |
|---|---|---|---|
| **SafeWell** | PFAS testing (PFAS6, full scans), custom POU (under-sink) and POE (whole-house) GAC/RO systems, annual maintenance, spent filter disposal. >95% removal certified. | Largest MA tester (2,000+ wells/year); statewide installs for private homes; trained for MassDEP sampling. Serves all regions, including high-risk areas like Cape Cod. | safewell.us/pfas-contamination; (800) 684-0979. Free consults. |
| **ThinkPure** | NSF 53-certified whole-home filtration, PFAS-specific GAC/RO designs, testing, install, and monitoring. | Eastern MA focus (e.g., North Shore, MetroWest); 1,000+ residential installs since 2011; integrates with private well pumps. | thinkpurewater.com; (978) 927-8383. Free water analysis. |
| **H2O Care** | Residential water testing (PFAS6+), custom filtration (GAC, RO, softeners), | 12,000+ MA customers; specializes in private wells with PFAS/iron issues; | h2ocare.com; (800) 550-1990. In-home testing available. |

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| | POE/POU installs, maintenance plans. | serves Central/Western MA (e.g., Worcester, Springfield). | |
| **Endless Energy (Atlas Filtri Systems)** | Tailored whole-home RO/GAC systems for PFAS, testing, install; targets town-specific contaminants. | MA statewide; focuses on private wells in PFAS hotspots (e.g., Hyannis, Lowell, Marlborough); rebates for sensitive groups. | goendlessenergy.com; (800) 311-9233. Custom quotes via zip code. |
| **Aqualite US** | Advanced residential filtration (UV, RO, carbon for PFAS), testing, whole-home/POU setups. | Northeast focus including MA private wells; addresses PFAS alongside bacteria/heavy metals; quick installs. | aqualiteus.com; (800) 453-4203. NSF-certified products. |
| **Culligan of Greater Boston** | PFAS-specific POU/POE (e.g., Aqua-Cleer systems), free testing, rental/purchase options, maintenance. | Boston/MetroWest branches; 70+ years in MA residential; partners with MassDEP for well owners. | culligan.com/locations/ma/boston; (617) 472-3090. Free site visits. |
| **Kinetico New England** | Non-electric RO/GAC systems for PFAS removal, private well testing, lifetime warranties on installs. | Serves Greater Boston, South Shore, Cape; specializes in well water; >90% PFAS reduction guaranteed. | kinetico.com/dealers/new-england; (800) 944-9283. Free analysis. |
| **Tighe & Bond** (Residential Arm) | Consulting/testing for private wells, POE installs (GAC/IX), grant navigation; LSP oversight. | Western/Central MA (e.g., Princeton projects); provides bottled water/POET for MCP sites; free initial assessments. | tighebond.com; (413) 733-4725. Focus on disadvantaged areas. |

**Key Notes**

- **How to Choose**: Start with testing ($200–$500; some free via local health boards). Prioritize NSF 53/58-certified systems for >90% PFAS6 reduction to <20 ppt. For high levels (>100 ppt), opt for POE; low levels suit POU.
- **Financial Help**: If near a known site (e.g., airports), the polluter funds via MCP—contact MassDEP (1-888-304-1133). EC-SDC grants cover up to $1M for private well connections/treatments in eligible towns. Low-income aid via RCAP (1-800-488-1969).
- **Additional Resources**:
    - MassDEP Private Well FAQ: Testing/treatment guidance mass.gov/pfas-private-wells.
    - UMass Amherst POU Study: Real-world performance data mass.gov/umass-pfas-study.
    - NSF Database: Certified devices info.nsf.org/Certified/DWTU.
    - Local Boards of Health: Town-specific providers (search "[Your Town] MA PFAS private well").

Contact your local Board of Health first—they often recommend vetted locals. Retest post-install to confirm efficacy. For urgent cases, bottled water (MDPH-tested list) is a stopgap.

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