

Before You Fill That Bottle

How to avoid common mistakes when collecting a private well water sample

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FIRST RULE: Use the instructions supplied by your testing laboratory. Different tests require different collection methods, bottles, preservatives, flushing times and delivery deadlines.

Why the way you take the sample matters

A laboratory can measure what is in a bottle with great sensitivity. But a careful laboratory cannot fix a poorly collected sample. Bacteria living on a faucet screen, dirty hands, a touched bottle cap, or the wrong sampling location can distort the result. Proper collection helps you make decisions using information you can trust.

Routine bacteria sample: practical checklist

- **1. Call your lab first.** Obtain its sterile bacteria sampling bottle, instructions and delivery deadline. Ask where to collect the sample and whether the faucet should be disinfected.
- **2. Choose an appropriate cold-water tap.** Avoid leaking or swivel faucets, hose attachments and outlets downstream of treatment unless the lab specifically wants post-treatment water.
- **3. Remove the aerator or screen, when directed.** Look at the buildup. Sediment, slime or mineral deposits can be useful clues, but their appearance alone cannot identify bacteria or establish water safety.
- **4. Prepare the end of the faucet.** If your lab instructs disinfection, follow its approved bleach or other disinfection procedure. Maine guidance for routine coliform sampling describes briefly dipping the faucet end in a capful of bleach as an optional best practice. Keep bleach out of your sample and follow with the required flush.
- **5. Flush with cold water as directed.** For routine coliform sampling, Maine guidance specifies at least 5 minutes, then reducing the flow and running it gently another minute. The purpose is to obtain fresh, representative water rather than water sitting in the plumbing.
- **6. Handle the bottle as if the inside is untouchable.** Open it only when ready. Never touch the inside of the cap, bottle, rim or threads. Never rinse a sterile bottle or empty any material already inside it. If the cap falls into the sink or becomes contaminated, ask the lab for a replacement kit.
- **7. Fill to the laboratory mark.** Reduce splashing, keep the bottle away from faucet contact, close promptly, label clearly and record the actual collection time.
- **8. Deliver promptly.** Follow the laboratory's exact instructions for cooling, transport and maximum holding time. Arrange drop-off before taking the sample, especially near weekends.

A true example of a common error

A homeowner receives a positive bacteria result and immediately worries that the well is contaminated. One of the first questions to ask is: **Was the faucet aerator removed?** A dirty screen can introduce contamination during collection. The result must still be taken seriously, but a carefully collected follow-up sample can help determine the right next steps.

Important exceptions: not every test uses this procedure

Lead and copper first-draw sampling may require leaving the aerator in place and allowing water to stand before collection. **Radon and volatile organic tests** often require special bottles and little or no air space. **Chemical tests** may include preservatives. Always use the test-specific kit and instructions. Never apply the bacteria checklist indiscriminately.

What if the bacteria result is positive?

Do not assume the result is just a collection mistake. Contact the lab or your state drinking-water/public-health program about the type of bacteria detected, drinking-water precautions and follow-up sampling. If *E. coli* or fecal contamination is detected, prompt action is particularly important. Do not declare water safe based on a suspected sampling error.

Before you submit a sample, ask yourself

- Did I use the correct bottle and collect at the correct location?
- Did I follow the test-specific faucet preparation, flushing and filling instructions?
- Did I avoid touching or rinsing the inside of the sterile container?
- Can I get it to the laboratory within its specified time and temperature requirements?

Need help interpreting your results?

The Water Eagle offers a \$49 written review of existing laboratory results with practical next steps, normally delivered within 3 business days after complete information is received.

Contact: admin@eagleoutdoorcompany.com

Sources and scope: Maine CDC Drinking Water Program, "Instructions for Collecting Compliance Water Samples" (routine total-coliform collection section), maine.gov/dhhs/mecdc/healthy-living/health-and-safety/drinking-water-safety/drinking-water-operators/instructions-for-collecting-compliance-water-samples. This is homeowner education adapted from sampling principles; public-system compliance requirements do not automatically apply to every private-well sample. Confirm private-well requirements with your accredited laboratory.

Educational information only. Not laboratory testing, a guarantee of safety, or a substitute for guidance from the laboratory or public health agency.

Arsenic Speciation: A Different Kind of Water Sample

A routine **total arsenic** result tells you how much arsenic was measured. **Arsenic speciation** separates chemical forms, particularly arsenite (As III) and arsenate (As V), which can behave differently during treatment. It is a separate laboratory service, not something a standard arsenic sample automatically provides.

Why special handling matters

Arsenic forms can change after collection through exposure to oxygen or light and reactions with iron and manganese. Incorrect filtration, preservation, transport or delay can change the measured proportions. Even a carefully filled ordinary bottle may not give a dependable speciation result.

Before collecting: ask the laboratory

- Confirm that the lab specifically performs **arsenic speciation** (As III/As V), not merely total arsenic. Ask whether it recommends this test for your decision.
- Obtain the lab-supplied **speciation kit and written procedure**. Ask whether field filtration or separation is required, and whether a trained sampler should perform it.
- Confirm the **sampling location** (raw well water or after treatment), bottle type, preservative, light protection, temperature requirements and holding time.
- Arrange delivery with the lab before sampling. Record the date, time, location, treatment status and who collected the sample.

Do NOT improvise

Do not add household bleach, acids, preservatives or filtering steps to a speciation bottle unless the laboratory explicitly instructs you. **The bleach-on-faucet bacteria procedure is not a universal speciation procedure**. Some methods require prompt field processing and method-specific preservatives. Let the laboratory supply the correct materials and instructions.

When does this test make sense?

Speciation can help answer treatment-design questions when arsenic is detected, especially if a treatment professional needs to assess oxidation or adsorption performance. It is **not a substitute for routine total-arsenic testing** or for action on an elevated total-arsenic result. Ask the lab or qualified water professional what testing is needed.

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Need help deciding which test to order or understanding the results? Ask about The Water Eagle's \$49 written laboratory review. Email admin@eagleoutdoorcompany.com.

Technical references: USGS National Field Manual, Arsenic Speciation (2012), https://pubs.usgs.gov/twri/twri9a5/twri9a5_5.6.4.A_v.2.0.pdf ; USGS, Stetson et al. (2021), <https://pubs.usgs.gov/publication/70217116>. Procedures vary by analytical method and sample chemistry. Laboratory instructions always control.