

WATER SAMPLE COLLECTION

E. coli & Total Coliform

SM 9223B · Colilert-18 · Presence/absence and Quanti-Tray MPN

KIT CHECK BEFORE YOU LEAVE

- | | | |
|---|--|---|
| ☐ Sterile 120 mL bottle, thiosulfate | ☐ Plain bottle for unchlorinated source | ☐ Alcohol wipes or torch |
| ☐ Chlorine residual test kit | ☐ Gloves, pen, CoC form | ☐ Cooler, gel packs, courier label |

01 Choose the tap

- Cold water, from a fixed spout. Avoid swivel taps, aerated spouts, leaking taps, and any tap with a hose attached.
- Do not sample through a filter or softener unless that is the point of the sample.
- Public water systems: follow the sample siting plan. Where you sample matters as much as how.

02 Prepare the tap

- Remove the aerator or screen.
- Disinfect the outlet with an alcohol wipe or a brief flame.
- Flush 2 to 3 minutes at moderate flow to clear the service line.
- This is the opposite of lead sampling. Lead needs stagnation; bacteria need flushing. Do not mix the two protocols.

03 Collect

- Open the bottle at the last moment. Do not set the cap down and do not touch the inside of the cap or the bottle neck.
- Fill to the 100 mL line and leave the headspace. The bottle has to be shaken at the bench.
- Do not rinse the bottle. The sodium thiosulfate powder is supposed to stay in it.
- Recap immediately and firmly.

04 Record on the chain of custody

- Date and time of collection. Hold time is measured from this moment, so an approximate time is not good enough.
- Sample location, system or PWS identification, and whether this is a routine or repeat sample.
- Free and total chlorine residual, and the source type: public water system, private well, recreational, or other.
- Collector name and signature.

05 Chill and ship

- Hold between 0 and 10 degrees C. Do not freeze.
- Public water system compliance: no more than 30 hours from collection to the start of incubation.
- Recreational and ambient samples have a much shorter window. Call before you sample.
- Ship the same day, overnight.

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Quick reference · What to avoid, what a positive means, what to expect

ALWAYS

- + Remove the aerator and disinfect the outlet.
- + Flush 2 to 3 minutes before collecting.
- + Fill only to the 100 mL line.
- + Write the exact collection time on the CoC.
- + Record the chlorine residual.
- + Chill immediately and ship the same day.

NEVER

- x Never flush 'for LCRR'. That is a lead protocol, not a bacteriological one.
- x Never sample from a leaking, swivel or aerated spout.
- x Never rinse out the sample bottle.
- x Never fill to the brim.
- x Never touch the bottle mouth or the inside of the cap.
- x Never hold a sample overnight at room temperature.
- x Never ship without a recorded collection time.

WHAT A POSITIVE ACTUALLY MEANS (REVISED TOTAL COLIFORM RULE)

Total coliform	There is no MCL for total coliform. The 2016 revision replaced it with a treatment technique. A positive routine sample requires three repeats within 24 hours of notification.
Level 1 assessment	Triggered by more than one positive in a month for systems taking fewer than 40 samples, or more than 5 percent for larger systems. Complete and submit within 30 days.
E. coli MCL	Trigger-based, not a single result. A routine positive requires repeat sampling before a violation is determined. A violation is acute: Tier 1 public notification within 24 hours.
Private wells	SDWA does not apply. No MCL, no public notification tier, no repeat obligation. In New Jersey the Private Well Testing Act and the local health department govern instead.

CHOOSING THE FORMAT

Presence / absence	Sufficient for public water system compliance monitoring; a density determination is not required. Also the right choice for routine private well screening.
Quanti-Tray MPN	Needed where criteria are written as counts: recreational and ambient water, source investigations, and tracking a remediation back to baseline.
Turnaround	Colilert-18 reads at 18 hours. Most samples are reported within 24 to 48 hours of receipt.

IF A RESULT IS POSITIVE

Public water systems: collect the required repeats within 24 hours of notification and contact your primacy agency. Whether a violation exists depends on the repeat results, so do not issue public notification before that determination unless your agency directs it. Private wells: stop using the water for drinking, cooking and brushing teeth, and contact your local health department. Boiling is an interim measure. The next step is finding the defect, not re-testing until a clean result appears.