

Total Coliform Sample Collection Guidance for Community Public Water Systems

An MDH approved bacteriological sample site plan must be in place and followed in accordance with the Revised Total Coliform Rule [40 CFR 141.853]. These site plans will be reviewed and approved during Sanitary Survey inspections. Be sure to notify your MDH District Engineer when updates are made to your list of sample sites. The number of samples required is based on the population your public water system serves. See a summary of the rule at [Revised Total Coliform Rule And Total Coliform Rule \(https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliformrule\)](https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliformrule).

Sample Site Selection Guidance

Collect total coliform samples at sites that are representative of water quality throughout the distribution system. Sample sites must be approved by MDH. Contact MDH for assistance if needed.

- **Use easily accessible sites**, such as sites with 24/7 access, if possible.
- **Do not take samples from sources (wells) or from the system entry point (pumphouse/treatment plant)**. Only sample sites from the distribution system.
- **Select sites that best represent water served to customers throughout the distribution system.**
 - Divide your system into segments and choose sites from within each area.
 - Use sites in different pressure zones.
 - Use sites at locations that serve sensitive populations (e.g. immunocompromised, elderly people).
 - Use sites supplied by different finished water sources and storage tanks.
- **Use sites that have available upstream and downstream sites within 5 service connections.** These sites will be used for repeat sampling in the event of a total coliform positive sample.
- **Do not use sites that have point of use such as reverse osmosis or other filtration devices.** Avoid locations with water softeners unless no other sites are available.
- **Sample from taps that are not susceptible to contamination.** Avoid bathrooms, outside taps, or taps close to the ground.
- **Use sites that get regular use.** Use caution when sampling from seasonal sites or large diameter service connections that have low or no use.
- If you chlorinate, measure total chlorine residual at each location. Keep this information in your records to track changes and inform any needed adjustments; and

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- Remember to **Run water until the temperature has stabilized** before collecting the sample. See: [Total Coliform Sample Collection Guidance for Community Public Water Systems \(PDF\)](https://www.health.state.mn.us/communities/environment/water/docs/sampproc/totalcolifomsp.pdf) (<https://www.health.state.mn.us/communities/environment/water/docs/sampproc/totalcolifomsp.pdf>).

When to Take Samples

- Collect samples at regular time intervals throughout the month. If your system serves less than 4,900 persons and only uses groundwater: You may collect all required samples on a single day. The samples must be taken from different sites.
 - Systems serving 4,900 or more persons and using groundwater: You are required to collect samples during at least two different days within each month. You may use the same site location more than once a month on dates at least a week apart.
 - Systems using surface water: You are required to collect samples during at least two different days within each month, on dates at least one week apart.
- You can collect more samples than required by the federal Safe Drinking Water Act. The required number is considered the minimum to represent the distribution system.

Use this general guideline for the number of sample sites to list on your plan. Note that more sample sites allow for greater flexibility in site accessibility and in representation of the entire distribution system:

Sample Sites

Population	Number of Samples you Take	Recommended Number of Sites to Use for Sampling
Up to 1,000	1 sample/quarter	4 sites
1,001 – 4,900	2-5 samples/month	5+ sites
4,901 – 12,900	6-10 samples per month	6 - 10 sites
12,901 – 21,500	11-20 samples per month	10 - 20 sites
21,501 – 50,000	21-50 samples per month	10 - 50 sites
50,001 and above	50+ samples per month	25+ sites

PWS Site Plans Approved by MDH

All bacti site plans must include the following:

- List of identified sites for routine monitoring.
 - Number and location of sites as described above.
 - Site identifier must be physical address or other specific location identifier.

2. And either
 - a. List of identified upstream and downstream sample sites for each original site; or
 - b. Written Standard Operating Procedure (SOP) that includes repeat sample collection procedures. The SOP must state the PWS will collect repeat samples at:
 - i. The original positive location;
 - ii. A minimum of one upstream and one downstream of the original positive location within five service connections, or other representative locations;
 - iii. A minimum of one additional distribution sample from another location; and
 - iv. All sources that influenced the original positive result.

If an MDH approved sample site is unavailable on the day of sample collection, an alternate site may be used if it meets the following criteria:

- The alternate site represents the same area of the distribution system as the inaccessible site.
- The alternate site meets the site selection criteria above; and
- The alternate site is approved and added to the sample site plan. Contact the MDH district engineer for the PWS or MDH RTCR compliance engineer for approval.

Revised Total Coliform Rule Violations

- Tier 1 - E. coli violation for when there is any combination of E.coli positive sample result with a routine or repeat total coliform positive sample result. Failure to collect repeat samples following an E. coli sample is also a violation.
- Tier 2 - Treatment Technique Violation for failure to conduct a Level 1 or Level 2 Assessment or for failure to take corrective action.
- Tier 3 - Failure to collect routine samples, to analyze for E. coli following a total Coliform positive sample, to submit monitoring reports or assessments and failure to report an E. coli positive sample are Monitoring and Reporting violations.
- E. coli violations and Level 1 or Level 2 Assessments must be included in the annual Consumer Confidence Reports.

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To obtain this information in a different format, call: 651-201-4700.