

Total Coliform Rule: A Quick Reference Guide

Overview of the Rule

Title	Total Coliform Rule (TCR)
Purpose	Improve public health protection by reducing fecal pathogens to minimal levels through control of total coliform bacteria, including fecal coliforms and <i>Escherichia coli</i> (<i>E. coli</i>).
General Description	Establishes a maximum contaminant level (MCL) based on the presence or absence of total coliforms, modifies monitoring requirements including testing for fecal coliforms or <i>E. coli</i> , requires use of a sample siting plan, and also requires sanitary surveys for systems collecting fewer than five samples per month.
Utilities Covered	The TCR applies to all public water systems.

Public Health Benefits

Implementation of the TCR has resulted in . . .	<ul style="list-style-type: none"> ▶ Reduction in risk of illness from disease causing organisms associated with sewage or animal wastes. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and associated headaches and fatigue.
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What are the Major Provisions?

ROUTINE Sampling Requirements

- ▶ Total coliform samples must be collected at sites which are representative of water quality throughout the distribution system according to a written sample siting plan subject to state review and revision.
- ▶ Samples must be collected at regular time intervals throughout the month except groundwater systems serving 4,900 persons or fewer may collect them on the same day.
- ▶ Monthly sampling requirements are based on population served (see table on next page for the minimum sampling frequency).
- ▶ A reduced monitoring frequency may be available for systems serving 1,000 persons or fewer and using only ground water if a sanitary survey within the past 5 years shows the system is free of sanitary defects (the frequency may be no less than 1 sample/quarter for community and 1 sample/year for non-community systems).
- ▶ Each total coliform-positive routine sample must be tested for the presence of fecal coliforms or *E. coli*.
- ▶ If any routine sample is total coliform-positive, repeat samples are required.

REPEAT Sampling Requirements

- ▶ Within 24 hours of learning of a total coliform-positive ROUTINE sample result, at least 3 REPEAT samples must be collected and analyzed for total coliforms:
 - ▶ One REPEAT sample must be collected from the same tap as the original sample.
 - ▶ One REPEAT sample must be collected within five service connections upstream.
 - ▶ One REPEAT sample must be collected within five service connections downstream.
 - ▶ Systems that collect 1 ROUTINE sample per month or fewer must collect a 4th REPEAT sample.
- ▶ If any REPEAT sample is total coliform-positive:
 - ▶ The system must analyze that total coliform-positive culture for fecal coliforms or *E. coli*.
 - ▶ The system must collect another set of REPEAT samples, as before, unless the MCL has been violated and the system has notified the state.

Additional ROUTINE Sample Requirements

- ▶ A positive ROUTINE or REPEAT total coliform result requires a minimum of five ROUTINE samples be collected the following month the system provides water to the public unless waived by the state.





Public Water System ROUTINE Monitoring Frequencies

Population	Minimum Samples/ Month	Population	Minimum Samples/ Month	Population	Minimum Samples/ Month
25-1,000*	1	21,501-25,000	25	450,001-600,000	210
1,001-2,500	2	25,001-33,000	30	600,001-780,000	240
2,501-3,300	3	33,001-41,000	40	780,001-970,000	270
3,301-4,100	4	41,001-50,000	50	970,001-1,230,000	300
4,101-4,900	5	50,001-59,000	60	1,230,001-1,520,000	330
4,901-5,800	6	59,001-70,000	70	1,520,001-1,850,000	360
5,801-6,700	7	70,001-83,000	80	1,850,001-2,270,000	390
6,701-7,600	8	83,001-96,000	90	2,270,001-3,020,000	420
7,601-8,500	9	96,001-130,000	100	3,020,001-3,960,000	450
8,501-12,900	10	130,001-220,000	120	≥ 3,960,001	480
12,901-17,200	15	220,001-320,000	150		
17,201-21,500	20	320,001-450,000	180		

*Includes PWSs which have at least 15 service connections, but serve <25 people.

What are the Other Provisions?

Systems collecting fewer than 5 ROUTINE samples per month . . .	Must have a sanitary survey every 5 years (or every 10 years if it is a non-community water system using protected and disinfected ground water).**
Systems using surface water or ground water under the direct influence of surface water (GWUDI) and meeting filtration avoidance criteria . . .	Must collect and have analyzed one coliform sample each day the turbidity of the source water exceeds 1 NTU. This sample must be collected from a tap near the first service connection.

** As per the IESWTR, states must conduct sanitary surveys for community surface water and GWUDI systems in this category every 3 years (unless reduced by the state based on outstanding performance).

How is Compliance Determined?

- ▶ Compliance is based on the presence or absence of total coliforms.
- ▶ Compliance is determined each calendar month the system serves water to the public (or each calendar month that sampling occurs for systems on reduced monitoring).
- ▶ The results of ROUTINE and REPEAT samples are used to calculate compliance.

A Monthly MCL Violation is Triggered if:

A system collecting fewer than 40 samples per month . . .	Has greater than 1 ROUTINE/REPEAT sample per month which is total coliform-positive.
A system collecting at least 40 samples per month . . .	Has greater than 5.0 percent of the ROUTINE/REPEAT samples in a month total coliform-positive.

An Acute MCL Violation is Triggered if:

Any public water system . . .	Has any fecal coliform- or <i>E. coli</i> -positive REPEAT sample <u>or</u> has a fecal coliform- or <i>E. coli</i> -positive ROUTINE sample followed by a total coliform-positive REPEAT sample.
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What are the Public Notification and Reporting Requirements?

For a Monthly MCL Violation	▶ The violation must be reported to the state no later than the end of the next business day after the system learns of the violation.
For an Acute MCL Violation	▶ The violation must be reported to the state no later than the end of the next business day after the system learns of the violation.
Systems with ROUTINE or REPEAT samples that are fecal coliform- or <i>E. coli</i> -positive . . .	Must notify the state by the end of the day they are notified of the result or by the end of the next business day if the state office is already closed.