

3745-81-21

Coliform monitoring requirements.

(A) Public water systems shall collect total coliform routine samples at sites which are representative of water throughout the distribution system according to a written sample siting plan. Such plans are subject to review and revision by the director. Samples for determination of compliance with this chapter shall be analyzed in a laboratory holding valid certification to analyze drinking water for microbiological contaminants under Chapter 3745-89 of the Administrative Code. The samples shall be analyzed by one or more of the approved methods listed in rule 3745-81-27 of the Administrative Code.

(1)

(a) The minimum monitoring frequency for total coliforms for community water systems is based on the population served by the community water system, except as provided for in paragraphs (A)(1)(b) and (A)(4) of this rule, as follows:

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| Population served | Minimum number of samples per month |
|-----------------------------|-------------------------------------|
| Less than or equal to 1,000 | 1 |
| 1,001 to 2,500 | 2 |
| 2,501 to 3,300 | 3 |
| 3,301 to 4,100 | 4 |
| 4,101 to 4,900 | 5 |
| 4,901 to 5,800 | 6 |
| 5,801 to 6,700 | 7 |
| 6,701 to 7,600 | 8 |
| 7,601 to 8,500 | 9 |
| 8,501 to 12,900 | 10 |
| 12,901 to 17,200 | 15 |
| 17,201 to 21,500 | 20 |
| 21,501 to 25,000 | 25 |
| 25,001 to 33,000 | 30 |
| 33,001 to 41,000 | 40 |
| 41,001 to 50,000 | 50 |
| 50,001 to 59,000 | 60 |
| 59,001 to 70,000 | 70 |
| 70,001 to 83,000 | 80 |
| 83,001 to 96,000 | 90 |
| 96,001 to 130,000 | 100 |
| 130,001 to 220,000 | 120 |
| 220,001 to 320,000 | 150 |
| 320,001 to 450,000 | 180 |
| 450,001 to 600,000 | 210 |
| 600,001 to 780,000 | 240 |
| 780,001 to 970,000 | 270 |

| | |
|------------------------|-----|
| 970,001 to 1,230,000 | 300 |
| 1,230,001 to 1,520,000 | 330 |
| 1,520,001 to 1,850,000 | 360 |
| 1,850,001 to 2,270,000 | 390 |
| 2,270,001 to 3,020,000 | 420 |
| 3,020,001 to 3,960,000 | 450 |
| 3,960,001 or more | 480 |

- (b) A community water system using a surface water source, in whole or in part, serving fewer than three thousand three hundred one persons shall monitor at regular intervals for total coliforms no less than four times per month.

(2)

- (a) A non-community water system using only ground water or purchased water and serving not more than one thousand persons shall monitor with at least one sample each calendar quarter that the non-community water system provides water to the public.
- (b) A non-community water system using only ground water and serving more than one thousand persons during any month shall monitor at the same frequency as a community water system serving the same number of persons, as specified in paragraph (A)(1)(a) of this rule.
- (c) A non-community water system using a surface water source, in whole or in part, and serving a population of greater than four thousand one hundred persons shall monitor at the same frequency as a community water system serving the same number of persons, as specified in paragraph (A)(1)(a) of this rule. A non-community water system using surface water, in whole or in part, serving a population of fewer than four thousand one hundred one persons shall monitor at least four times per month for any month the non-community water system serves water to the public.
- (3) Public water systems shall monitor with samples taken at regular time intervals throughout the month in accordance with the system's sample siting plan.
- (4) Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, shall not be used to determine compliance with the maximum contaminant level for total coliforms as set forth in rule 3745-81-14 of the Administrative Code. The special purpose samples shall be marked as such before analysis. Repeat samples taken pursuant to paragraph (B) of this rule are not considered special purpose samples, and shall be used to determine compliance with the maximum contaminant level for total coliforms as set forth in rule 3745-81-14 of the Administrative Code.
- (5) Based on the results of a sanitary survey, the director may increase the frequency of total coliform monitoring. On the basis of subsequent sanitary surveys, the increased monitoring frequency may be reduced. Under no circumstances shall the required monitoring be less than that prescribed by this rule.

(B)

- (1) When a routine sample is determined to be total coliform-positive, the public water system shall monitor with a set of four repeat samples within twenty-four hours of being notified of the positive result. Upon a request from a public water system, the director may extend the twenty-four-hour limit on a case-by-case basis when the public water system has a logistical problem collecting the repeat samples within twenty-four hours which is beyond the control of the public water system. When an extension is granted by the director, the director shall specify how much time the public water system has to monitor with repeat samples.
- (2) The public water system shall monitor with at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. The fourth repeat sample shall be collected within five service connections upstream or downstream of the original sampling site. When a total coliform-positive sample was taken at an end of the distribution system or one service connection away from an end of the distribution system, the director may waive the requirement to monitor with at least one repeat sample upstream or downstream of the original sampling site.
- (3) Public water systems shall collect all total coliform repeat samples on the same day.
- (4) When one or more repeat sample(s) in the set is total coliform-positive, the public water system shall continue to monitor with an additional set(s) of repeat samples in the manner specified in paragraphs (B)(1) to (B)(3) of this rule until total coliforms are not detected in one complete set of repeat samples or the system determines that the maximum contaminant level for total coliforms in rule 3745-81-14 of the Administrative Code has been exceeded and notifies the director no later than the end of the next business day after the public water system learns of the violation.
- (5) Failure to monitor and report required repeat samples is a monitoring and reporting violation, for which public notification shall be issued in accordance with rule 3745-81-32 of the Administrative Code.
- (6) Public notification issued as a result of a violation in paragraph (C) of rule 3745-81-14 of the Administrative Code or paragraph (B)(5) of this rule, and which may cause an acute risk to human health, shall remain in effect until total coliforms are not detected in one complete set of repeat samples.
- (7) When a public water system monitoring with fewer than five routine samples per month has one or more total coliform-positive samples, the public water system shall monitor with at least five routine samples during the next month that the public water system provides water to the public. The director shall not waive the

requirement for a public water system to collect repeat samples in paragraphs (B)(1) to (B)(4) of this rule.

- (8) After a public water system monitors with a routine sample and before the public water system learns the results of the analysis of that sample, when the public water system collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the public water system may consider the subsequent sample(s) as a repeat sample(s) instead of as a routine sample(s).
 - (9) When a routine or repeat total coliform sample is analyzed by a membrane filter technique and produces a high background count (HBC) or confluent growth, the HBC or confluent growth culture shall be further analyzed for total coliforms in accordance with a method included in the membrane filter techniques referred to in paragraph (D) of rule 3745-81-27 of the Administrative Code. Gas production of any amount in the inner fermentation tube of brilliant green lactose bile broth indicates a positive coliform test. When an HBC or confluent growth culture is analyzed for total coliforms and none are found, the sample shall be considered invalid and the public water system shall monitor with a replacement sample within twenty-four hours of being notified of the invalid sample. Upon a request from a public water system, the director may extend the twenty-four-hour limit on a case-by-case basis when the public water system has a logistical problem collecting the repeat samples within twenty-four hours which is beyond the control of the public water system. When an extension is granted by the director, the director shall specify how much time the public water system has to monitor with repeat samples.
- (C) If any routine or repeat sample is total coliform-positive, that total coliform-positive culture shall be further analyzed to determine if fecal coliforms are present, except that the culture may be tested for *Escherichia coli* in lieu of fecal coliforms. If fecal coliforms or *E. coli* are present, the system shall notify the director by the end of the day when the system is notified of the test result, unless the system is notified of the result after the director's office is closed, in which case the system shall notify the director before the end of the next business day. All repeat sample results shall be submitted no later than the end of the next business day following analysis.
- (D) Failure to comply with a coliform monitoring requirement, as set forth in this rule, is a monitoring violation. A public water system which has failed to comply with a coliform monitoring requirement, as set forth in this rule, shall report the monitoring violation to the director within ten days after the public water system discovers the violation, and notify the public in accordance with rule 3745-81-32 of the Administrative Code.

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