



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

February 15, 2016

COLIFORM MONITORING RULE REVISED – ACTION REQUIRED

Subject: Revised Total Coliform Rule effective April 1, 2016 (Group A)

Dear Public Water System Owner:

This letter is to notify you that your public water system (PWS) will be affected by the Revised Total Coliform Rule (RTCR). The RTCR applies to all PWSs and its requirements will take effect **April 1, 2016**.

The RTCR will affect your system in the following ways (some of these requirements are the same as they were under the Total Coliform Rule (TCR)):

- You must have available for review an up-to-date coliform sample siting plan by April 1, 2016.
- You must collect routine total coliform samples according to your monitoring schedule and sample siting plan.
- If one or more of your routine total coliform samples tests positive for total coliform bacteria (i.e., TC+ sample), then you must collect three (3) repeat samples for each TC+ routine sample within 24 hours of being notified of the TC+ result.
- There is no increase in your routine sampling frequency the month following a total coliform positive sample.
- If any routine or repeat total coliform sample is TC+, the laboratory must also analyze that sample for E. coli.
- The total coliform maximum contaminant level (MCL) requirements have been replaced by treatment technique (TT) requirements. This is one of the most significant revisions to the TCR. Starting April 1, 2016, there will no longer be a total coliform MCL. Instead, there are thresholds that trigger additional actions by the water system if they are exceeded. The thresholds are referred to as “TT triggers” and are explained in the fact sheet accompanying this letter.
- If your PWS exceeds one of the TT triggers, you must complete either a Level 1 or Level 2 assessment, depending on which trigger was exceeded. You will also need to complete corrective action(s) to address any significant deficiencies that are identified during the assessment(s). For example, for systems taking < 40 samples/month a system must conduct a Level 1 assessment if it incurs two or more TC+ (routine and/or repeats samples) in one month.

An RTCR Fact Sheet and a Sample Siting Plan template are enclosed. The Fact Sheet explains the monitoring and corrective actions in more detail. In addition to these materials, please also refer to the Ohio EPA website at <http://epa.ohio.gov/ddagw/rtrcr.aspx> for upcoming training opportunities and additional guidance.

Please contact your district office representative if you have any questions about this letter or the RTCR and its effect on your PWS. We appreciate your attention to this request.

Enclosures: RTCR Large Noncommunity, Surface Water and Community PWS Fact Sheet
General Sample Siting Plan Template



The Revised Total Coliform Rule: Large Noncommunity, Surface Water and Community Public Water Systems

Important changes to total coliform bacteria monitoring take effect on April 1, 2016

This fact sheet intends to explain key requirements under the Revised Total Coliform Rule (RTCR) for all community public water systems (PWSs), all surface water PWSs, and noncommunity ground water PWSs serving more than 1,000 people.

What is the Revised Total Coliform Rule (RTCR)?

U.S. EPA issued a rule that changes the monitoring requirements for total coliform bacteria and the way that public water systems must respond when samples show that total coliform bacteria (TC) are present. Ohio EPA is required to adopt the new requirements, which take effect on April 1, 2016. Additional information is available at: <http://epa.ohio.gov/ddagw/rtrcr.aspx>

Who will be affected by the changes?

- All public water systems will be affected.
- All public water systems may be affected by “triggered” requirements (e.g., Level 1 and Level 2 Assessments).

24 Hour Deadline for Repeat Sampling

All public water systems must have repeat samples collected within 24 hours of notification of the positive result. Extensions of the 24 hour limit may be granted due to extenuating circumstances on a case-by-case basis. All extensions must be thoroughly documented.

Key Changes

- All systems must update their TC Sample Siting Plan by April 1, 2016. Templates are available at: <http://epa.ohio.gov/ddagw/rtrcr.aspx>
- Beginning April 1, 2016, seasonal public water systems that depressurize or partially-depressurize in the off-season are required to complete a Start-Up Checklist and submit a Start-Up Certification form every year. The start-up procedure includes the submission of at least one start-up special purpose sample.
- Systems must collect repeat samples within 24 hours of water system notification.
- Maximum Contaminant Level (MCL) for Total Coliform will be eliminated.
- New MCL for E. coli will trigger a more intensive assessment.
- TC+ samples may trigger an assessment to find and fix the cause.

Table A. Highlights for <33,001 Population Systems

1. All systems will stay on the same monthly monitoring schedule as they are on now.
2. Two or more TC+ samples in one month will trigger a Level 1 Assessment to find the cause and correct it. It is not a violation. Level 1 Assessment triggers are:
 - a) Two or more TC+ samples during the same month;
 - b) Failing to monitor with all required repeat samples following a TC+.
3. A combination of a TC+ sample and an E. coli-positive sample in a month is an E.coli MCL violation that requires a Level 2 Assessment and public notification.

Table B. Highlights for >33,000 Population Systems

1. All systems will stay on the same monthly monitoring schedule as they are on now.
2. Triggers for a Level 1 Assessment include:
 - a) The number of TC+ samples exceeds 5.0% of the total monthly samples;
 - b) Failing to monitor with all required repeat samples following a TC+.
3. A combination of a TC+ sample and an E. coli-positive sample in a month is an E.coli MCL violation that requires a Level 2 Assessment and public notification.

The Revised Total Coliform Rule: Large Noncommunity, Surface Water and Community Public Water Systems

What happens if we have a TC+ sample?

The basic response of taking repeat samples after a TC+ sample will be the same; however, there will be important changes:

- **Number** - **Three** (instead of four) repeat samples must be taken for each TC+ routine sample.
- **Timing** - **Must be taken within 24 hours of notification, unless an extension is justified.**
- **Locations** - Similar as in the past, as identified in your Sample Siting Plan:
 - One at the TC+ location and
 - One within five taps upstream and
 - One within five taps downstream.
- **Multiple Routine TC+** - Every routine TC+ sample **must** have a set of three repeat samples collected.

If all the repeat samples are TC-, do we just go back to normal routine monitoring?

- **Yes.**

What Is a Level 1 Assessment? Who has to do it?

- A Level 1 Assessment is a basic examination of the entire water system, including sampling practices, to try to identify the cause of TC+ samples.
- The water system is responsible for ensuring the assessment is completed. Contact Ohio EPA for assistance.
- Yes, the assessment must be documented!
- **Triggering a Level 1 Assessment is not a violation! However, not completing it within 30 days will be a violation.**

Level 1 Assessment Examines:

- 1) Sampling location and procedures
- 2) Operational practices
- 3) Distribution system – changes or upsets
- 4) Treatment system - changes or upsets
- 5) Source

What Is a Level 2 Assessment? Who has to do it?

- A Level 2 Assessment is a more in-depth examination of the entire water system usually done to identify the source of E.coli in the system.
- It may also be triggered to find the cause for repeated occurrences of TC+ samples.
- These will be done by Ohio EPA staff with participation by water system personnel.

This fact sheet is intended only to describe some key requirements under the Revised Total Coliform Rule. It is not a complete summary of the requirements.

Contact

For more information, visit: <http://epa.ohio.gov/ddagw/rtrcr.aspx> or contact your inspector in the appropriate District Office:

Northwest: 419-352-8461

Northeast: 330-963-1200

Central: 614-728-3778

Southwest: 937-285-6357

Southeast: 740-385-8501



RTCR General Sample Siting Plan Template

(Final 12/04/2015)

This template includes sample siting plan requirements under the Revised Total Coliform Rule (RTCR) for all community public water systems (PWSs), all surface water PWSs, and noncommunity PWSs serving more than 1,000 people.

SYSTEM INFORMATION		
System Name:		Date:
Address:		PWS ID #:
System Type: Community <input type="checkbox"/> Nontransient <input type="checkbox"/> Transient <input type="checkbox"/>		County:
Contact Information for the Water System		
The following people are thoroughly familiar with this sample siting plan and are authorized to implement all or part of the plan as necessary.		
Name	Address	Phone Numbers
		Office:
		Mobile:
		Office:
		Mobile:
		Office:
		Mobile:
Persons Responsible for collecting samples:		
Primary:		Phone:
Backup:		Phone:

CERTIFIED LABORATORY INFORMATION		
	Primary laboratory	Backup laboratory
Name		
Address		
Phone		
Lab Certification Number		
Days and times lab will accept samples		

Ohio EPA District Office Contact Name:		Phone:	
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ADDITIONAL INFORMATION FOR COMMUNITY PUBLIC WATER SYSTEMS	
Map(s) of the distribution system are located at: _____	
Copies of this plan, along with the Contingency Plan, are maintained at the following locations:	
1.	_____
2.	_____
3.	_____
4.	_____
5.	_____

ADDITIONAL INFORMATION FOR GROUND WATER SYSTEMS

Source Water Sampling

Following a total coliform-positive routine sample, ground water systems shall collect a source water sample (i.e., before any treatment) in addition to three repeat samples. If multiple wells are in use (e.g., lead-lag), a sample shall be collected from each well. If only one well is in use, then only one source water sample is required and shall be collected from the well in service at the time the total coliform-positive routine sample was collected.

A source water sample will be collected from: _____
Describe source water location 1

A source water sample will be collected from: _____
Describe source water location 2 (if applicable)

A source water sample will be collected from: _____
Describe source water location 3 (if applicable)

A source water sample will be collected from: _____
Describe source water location 4 (if applicable)

ADDITIONAL INFORMATION FOR SEASONAL PUBLIC WATER SYSTEMS

Start-Up Special Purpose Samples

- As part of the Start-Up Checklist, depressurized and partially-depressurized seasonal systems are required to collect **at least one** special purpose sample at the service connection considered to be most susceptible to contamination for total coliform (TC) analysis. The service connection farthest from the entry point is often the appropriate location. Multiple TC samples are recommended especially in distribution systems that are large or split into different sections.
- For each start-up special purpose sample, write “**Start-Up**” in the comments section on the laboratory Sample Submission Report.
- The sample must be TC-negative before the system may open. If the sample is TC-positive, repeat the disinfection and flushing procedure (See instructions in the Start-Up Checklist). Following flushing, collect 2 special purpose samples at least 24 hours apart. Both samples must be TC-negative before the system can serve water to the public.

<p>1) _____ Location 1</p>	<p>2) _____ Location 2</p>	<p>3) _____ Location 3</p>
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SEASONAL SYSTEM DEFINITIONS

The Revised Total Coliform Rule (RTCR) requires different start-up and monitoring requirements depending on the type of seasonal system. The three types of seasonal public water systems include:

- 1. Depressurized Seasonal:**
The entire water system is depressurized (all of the waterlines are drained) for a period of time each year.
- 2. Partially-Depressurized Seasonal:**
The water system is partially-depressurized (some of the waterlines are drained) for a period of time each year.
- 3. Fully-Pressurized Year-Round Seasonal:**
The entire system stays fully-pressurized (none of the waterlines are drained), but no one has access to the water for a period of time during the year (must be more than 90 consecutive days).

ROUTINE SAMPLING

Using the table provided below, designate sampling locations for each routine sample required and the associated 3 repeat sampling locations. One of the repeat locations must be the same as routine location.

Number of routine total coliform samples required per month: _____			
Purpose		Tap Name & Location	Phone Number
1.	Routine sample location		
a.	Repeat sample at routine sample location.		
b.	Repeat sample location within 5 service connections upstream of the routine sample site.		
c.	Repeat sample location within 5 service connections downstream of the routine sample site.		
2.	Routine sample location		
a.	Repeat sample at routine sample location.		
b.	Repeat sample location within 5 service connections upstream of the routine sample site.		
c.	Repeat sample location within 5 service connections downstream of the routine sample site.		
3.	Routine sample location		
a.	Repeat sample at routine sample location.		
b.	Repeat sample location within 5 service connections upstream of the routine sample site.		
c.	Repeat sample location within 5 service connections downstream of the routine sample site.		
4.	Routine sample location		
a.	Repeat sample at routine sample location.		
b.	Repeat sample location within 5 service connections upstream of the routine sample site.		
c.	Repeat sample location within 5 service connections downstream of the routine sample site.		

A blank sheet for more sample tap locations is available on page 7.

INSTRUCTIONS

All public water systems are required to collect routine and repeat total coliform samples at sites that are representative of water throughout the distribution system according to a written sample siting plan.¹ The purpose of this document is to provide you (the system) with a template you may use to prepare your sample siting plan to comply with the Revised Total Coliform Rule (RTCR). This template is tailored to the needs of a large system. Please contact your Ohio EPA District Office representative with any questions.

Your existing sample siting plan must be updated **before April 1, 2016** when new requirements take effect. Annual verification of information is recommended.

Although your laboratory is required to provide Ohio EPA with the results of your tests for total coliform, occasionally errors may occur and a laboratory may fail to report these results. It remains your responsibility to **ensure Ohio EPA receives a copy of your total coliform test results**. You are required to keep copies of these results for 5 years.²

You are required to develop a written sample siting plan and sample accordingly. Keep an up-to-date sampling plan (the plan is to be updated annually) at your facility where it can be easily reached by people responsible for collecting samples. If you contract with a laboratory to collect your samples for you, provide the laboratory with a copy of your completed sample siting plan.

Depending on the results of your total coliform sampling, **you may be required to post a public notice** explaining those results.³ If this occurs, your district office representative will send you a letter that includes the appropriate public notice.

ROUTINE SAMPLING

- 1. Collect Samples.** Collect your total coliform routine samples at the locations designated in your sample siting plan. Follow the instructions for total coliform sample collection located in Appendix A.
- 2. Check Chlorine Residual.** Are you a community or non-transient non-community public water system that adds chlorine or chloramines as a disinfectant? Yes No (check one)

If so, before you take the routine or repeat total coliform sample(s), measure the total chlorine residual using a DPD colorimetric test kit with a digital display and a precision of 0.1 mg/L or another analytical method as described in Ohio Administrative Code rule 3745-81-27(C)(1). Allow the tap to run for 3 to 5 minutes before measuring the residual. Then disinfect the tap and proceed with total coliform sampling.

- 3. Complete Sample Submission Form.** You will need to provide your laboratory with the following information for each sample or your samples will not be analyzed. Clearly mark each sample as **routine**.
 - Facility Name
 - PWS ID #
 - Sample collection date/time
 - Sample collector
 - Address/tap location
(include **DS000** for "Sample ID")

- 4. Have Samples Analyzed.** All of your total coliform bacteria routine samples must be analyzed within 30 hours of collection at a laboratory certified by Ohio EPA or the results will not be valid. In this case you may have to collect more samples if the monitoring period has not expired or you will have a monitoring violation if the monitoring period has expired.⁴

REPEAT SAMPLING

- 5. Collect Repeats within 24 Hours.** If a routine sample result is **total coliform positive** you must take repeat samples and ground water systems (categorized as Ground Water Rule Substantial Treatment) must collect a raw source sample within 24 hours of notification.⁵ Consecutive ground water systems must notify their supplier to collect the raw source sample.

- a. Measure total chlorine before taking total coliform samples, if required (see Step 2).
- b. Collect a set of 3 repeat samples from the taps designated as repeat locations in your Sample Siting Plan.
- c. Mark each sample as **“REPEAT”**. Be sure to include the sample number of the original routine positive sample in the space provided on the SSR.
- d. **Source Water Sample for Ground Water Rule Substantial Treatment Systems.** Collect a raw sample from the well in operation at the time the positive sample was collected. If it is not known which well was in operation, a composite of all wells may be used.

Mark the raw sample as **“SPECIAL”**. In Street Address/Tap Location, include **“GWR001”**. In the Comments Section, enter the well(s) # sampled.

Ohio EPA must receive all repeat sample results **no later than the next business day** after the result was obtained.⁶ Your system will be required to complete a Level 1 Assessment if Ohio EPA does not receive all repeat sample results as required. The 24 hour deadline **may** be extended on a case-by-case basis.⁷

- e. A public water system is in violation of the maximum contaminant level (MCL) for Escherichia coli (E. coli) when any of the following conditions occur:⁸
 - i. The public water system has an E. coli-positive repeat sample following a total coliform-positive routine sample.
 - ii. The public water system has a total coliform-positive repeat sample following an E. coli-positive routine sample.
 - iii. The system fails to collect all required repeat samples following an E. coli-positive routine sample.
 - iv. The system fails to test for E. coli when any repeat sample is total coliform-positive.

A public water system in violation of the E. coli MCL shall notify the public using Tier 1 notification requirements in accordance with rule 3745-81-32 of the Administrative Code.

- 6.** If any of the repeat samples are total coliform positive, contact your district office representative immediately for additional instructions.

Ohio Administrative Code references for requirements:

¹Ohio Administrative Code rule 3745-81-50(B)

²Ohio Administrative Code rule 3745-81-55(B)

³Ohio Administrative Code rule 3745-81-32

⁴Ohio Administrative Code rule 3745-81-27(D)

⁵Ohio Administrative Code rules 3745-81-52(A) and 3745-81-42(A)

⁶Ohio Administrative Code rule 3745-81-52(B)

⁷Ohio Administrative Code rule 3745-81-52(A)

⁸Ohio Administrative Code rule 3745-81-54(A)

Use copies of this sheet as necessary to identify additional monitoring sites for your Sample Siting Plan.

Purpose		Tap Name & Location	Phone Number
	Routine sample location		
a.	Repeat sample at routine sample location.		
b.	Repeat sample location within 5 service connections upstream of the routine sample site.		
c.	Repeat sample location within 5 service connections downstream of the routine sample site.		
	Routine sample location		
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b.	Repeat sample location within 5 service connections upstream of the routine sample site.		
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c.	Repeat sample location within 5 service connections downstream of the routine sample site.		
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b.	Repeat sample location within 5 service connections upstream of the routine sample site.		
c.	Repeat sample location within 5 service connections downstream of the routine sample site.		

APPENDIX A

Collection of Drinking Water Samples for Total Coliform Bacteria Analysis

The following is the approved procedure for the collection of drinking water samples for analysis of total coliform, as detailed in the methods approved in Ohio Administrative Code rule 3745-81-27. The following procedure should be followed **in detail** to ensure a valid laboratory analysis.

1. Select the sampling tap.
 - a. A tap, such as faucet or small valve, is preferable. Do not sample from hoses or drinking water fountains.
 - b. Avoid taps with a leak at the stem or taps with a swivel joint.
 - c. Aerated or screened nozzles may harbor bacteria. The aerator or screen must be removed before collection of the sample.
 - d. Use/install a smooth nosed sample tap.

2. Place all carbon filters, sediment filters and water softeners on bypass unless operated by the public water system.

3. Sanitize the nozzle of the tap with a chlorine solution.
 - a. Use a 6% sodium hypochlorite solution, such as household liquid bleach. **Do not use chlorine solutions with special scents.** To prepare a sanitizing solution, add one ounce of bleach to one gallon of water (or 1 tablespoon per half-gallon). Store the mixed solution in a tightly closed screw-capped container. The solution should be discarded and remade 6 months after preparation. Stronger solutions can be used; however, some faucet discoloration may result.
 - b. Flush the sample tap to waste for 1 minute. Close the valve.
 - c. Apply the sanitizing solution (prepared in step a.) to the nozzle. This can be accomplished by either using a spray bottle or a plastic bag.
 - i. Using a spray bottle, saturate the tap opening with sanitizing solution then wait at least 2 minutes before proceeding, or
 - ii. Place a bag over the nozzle and hold the top of the bag tightly on the tap. Alternately squeeze and release the bag to flush the solution in and out of the tap. Do this for 2 minutes. A fresh solution and bag must be used to sanitize each tap.

4. Flush the tap.

The sample to be collected is intended to be representative of the water in the main. The tap must be opened fully and the water run to waste for at least 3-5 minutes to allow for adequate flushing of the piping between the tap and water main.

5. Reduce the flow from the tap to the width of a pencil to allow the sample bottle to be filled without splashing.
6. Open the sample bottle.
 - a. Grasp the bottom of the same bottle.
 - b. Remove the cap and hold the exterior of the cap between your fingers while filling the sample bottle. Do not lay the cap down. Take care to not touch the mouth of the sample bottle or the inside of the cap with fingers as the sample could become contaminated.
 - c. The sample bottle must be open only during the collection of the sample.
7. Fill the sample bottle.
 - a. Do not rinse out the sample bottle before collecting the sample. Do not remove any pills, powder, or liquid from the sample bottle. The sample bottle contains a small amount of sodium thiosulfate to neutralize any chlorine in the water.
 - b. Do not touch the rim or mouth of the sample bottle during collection of the sample.
 - c. Do not overfill the sample bottle. Fill the sample bottle to within ½" to 1" of the top or to the indicator line on the sample bottle.
8. Immediately recap the sample bottle tightly.
9. If there is any question as to whether a sample has become contaminated during collection, it must be discarded and a new one collected in a new sample bottle.
10. Deliver the sample to the laboratory as soon as possible.
11. Samples should be kept cool after collection and during transport to the laboratory. The laboratory must receive the sample so that analysis can be initiated within 30 hours after collection. Allow the laboratory adequate time to analyze the sample. Certified laboratories will not test samples greater than 30 hours old because the results will be invalid.

Additional information

- A bacteriological sample report form is supplied with each sample bottle. The top half of the form is to be filled out in a legible manner using an indelible pen, rubber stamp, or typewriter. Do not use a fountain pen or other pens having water soluble ink.
- Samples must be collected in sample bottles supplied by the certified laboratory.
- Bacteriological sample report forms that have not been properly completed, including the name of the water system, PWS ID#, address, date and time of collection, sample type and location (specific tap) and signature of collector will not be accepted for bacteriological examination.