

# Revised Total Coliform Rule Sample Siting Plan Requirements

## Purpose

The Revised Total Coliform Rule (RTCR) requires all public water systems to have a sample siting plan that identifies sampling sites where samples will be collected to demonstrate compliance with the rule. The selected sampling sites must be representative of water throughout the water system's distribution system. The public water system shall make the sample siting plan available to the department for review upon the request of the department and at the time of the system's sanitary survey. Public water systems shall collect all routine and repeat Total Coliform Rule compliance samples in accordance with its sample siting plan.

## Revised Total Coliform Rule (RTCR) Routine Monitoring Requirements

The tables below outline the routine and possible reduced monitoring schedules allowed by the RTCR.

System Type	Routine Requirement	Reduced Requirement	Month Following a Routine TC+
All PWS serving >1000	Monthly per table below	None	Normal Routine Schedule
Seasonal serving >1000	Monthly per table below	None	Normal Routine Schedule
Subpart H serving <1000	1/month	None	Normal Routine Schedule
GW CWS serving <1000	1/month	1/QT	3 routine samples if sampling quarterly
GW NC serving <1000	1/quarter	None	3 routine samples if sampling quarterly
Seasonal serving <1000	1/month	1/QT <sup>1</sup>	3 routine samples if sampling quarterly

<sup>1</sup> Seasonal systems must obtain approval to monitor quarterly by submitting an RTCR Sample Siting Plan to the Department.

Routine Monitoring Requirements for Water Systems Serving >1,000			
Population Served	Minimum Number of Samples Per Month	Population Served	Minimum Number of Samples Per Month
1,001 to 2,500	2	70,001 to 83,000	80
2,501 to 3,300	3	83,001 to 96,000	90
3,301 to 4,100	4	96,001 to 130,000	100
4,101 to 4,900	5	130,001 to 220,000	120
4,901 to 5,800	6	220,001 to 320,000	150
5,801 to 6,700	7	320,001 to 450,000	180
6,701 to 7,600	8	450,001 to 600,000	210
7,601 to 8,500	9	600,001 to 780,000	240
8,501 to 12,900	10	780,001 to 970,000	270
12,901 to 17,200	15	970,001 to 1,230,000	300
17,201 to 21,500	20	1,230,001 to 1,520,000	330
21,501 to 25,000	25	1,520,001 to 1,850,000	360
25,001 to 33,000	30	1,850,001 to 2,270,000	390
33,001 to 41,000	40	2,270,001 to 3,020,000	420
41,001 to 50,000	50	3,020,001 to 3,960,000	450
50,001 to 59,000	60	3,960,001 or more	480
59,001 to 70,000	70		

## Sample Siting Plan Requirements

1. A water system shall collect samples at regular time intervals throughout the month, except that a ground water system that serves 4,900 or fewer people may collect all required samples on a single day if the samples are taken from different sites. The water system's sample siting plan shall include written description of the system's routine sample collection schedule. For example, a system collecting 4 samples per month may indicate that samples will be collected on a weekly basis. Or a system collecting one sample per quarter may decide to collect the sample during the second month of each quarter.
2. A seasonal water system that monitors quarterly shall designate the time period or periods for monitoring based on site-specific considerations, such as monitoring during periods of highest demand or highest vulnerability to contamination in the sample siting plan. The water system's sample siting plan shall include the reason for selecting the time periods designated for monitoring based on site-specific considerations.
3. Sample sites may be located at a consumer's premise, dedicated sampling station, or other designated compliance sampling location.
4. A water system's sample siting plan shall include any sampling points necessary to meet the requirements of the Revised Total Coliform Rule.
5. **Routine (RT) total coliform and physical parameter sample sites.** A water system shall identify all locations for routine total coliform and physical parameter sampling in the sample siting plan. All routine sampling locations must be reported to the Department on the *Sample Point Inventory* form.
6. **Repeat (RP) total coliform sample sites.** A water system shall identify all alternative locations for repeat total coliform sampling in the sampling site plan. The system shall collect at least:
  - 1 repeat sample from the sampling tap where the original total coliform-positive sample was taken;
  - 1 repeat sample at a tap within 5 service connections upstream (U); and
  - 1 repeat sample at a tap within 5 service connections downstream (D) of the original sampling site.

### **Standard Repeat Sampling Locations**

If the water system plans to collect repeat total coliform samples from within 5 service connections upstream and 5 service connections downstream, the water system does not have to identify each individual service connection on the sampling site plan. All water systems have standard upstream and downstream repeat sampling points added to their sampling point inventory as follows:

STANDARD REPEAT SAMPLING LOCATIONS	
Sampling Point ID	Sampling Point Description
UPSTREAM	WITHIN 5 SERVICE CONNECTIONS UPSTREAM
DOWNSTREAM	WITHIN 5 SERVICE CONNECTIONS DOWNSTREAM

Water systems should use the sampling point IDs listed above when reporting results from all repeat sampling locations within 5 service connections upstream or downstream of all original routine sampling locations.

### **Alternative Fixed Repeat Sampling Locations**

A water system may also choose to identify alternative fixed locations for repeat sampling. If the system submits alternative fixed locations for repeat sampling, the system must provide a justification that the alternative monitoring locations are representative of a pathway for contamination of the distribution system and that the sample siting plan remains representative of the water quality in the distribution system. *For example, a water system may determine that a storage tank may be a more appropriate upstream sampling location than a location within 5 service connections due to the way water flows through the system. The water system could designate the storage tank as an upstream repeat sampling site for a routine sample location.* **All Sample Siting Plans that designate alternative repeat sampling locations must be submitted to the Department on the *Sample Siting Plan with Alternative Repeat Sampling Locations* form for review and approval prior to sampling.**

### **Source Water Monitoring Locations as Alternative Fixed Repeat Sampling Locations**

A ground water system serving 1,000 or fewer people with a single well that is required to conduct triggered (TG) source water monitoring under the Ground Water Rule may collect 1 of the repeat samples at the source water monitoring location if the source water monitoring location remains representative of water quality in the distribution system (i.e. the water is not treated). This sample will typically replace the upstream repeat sample. The water system must provide justification that the sample siting plan remains representative of water quality in the distribution system. The ground water system shall not use the result of a sample taken at the source water monitoring location to meet both the repeat monitoring requirements of the Revised Total Coliform Rule and the triggered source water monitoring requirements of the Ground Water Rule until the ground water system has received department approval to do so. **All Sample Siting Plans that designate source water monitoring locations as alternative repeat sampling locations must be submitted to the Department on the *Sample Siting Plan with Alternative Repeat Sampling Locations* form for review and approval prior to sampling.**

Please note that the following requirements will apply when using a source water monitoring location as a repeat sampling location:

- (I) If the repeat sample taken at the source water monitoring location is E. coli-positive, the water system has violated the E. coli MCL and shall also comply with the requirements to collect 5 additional source water samples and/or propose corrective action under the Ground Water Rule. If the water system takes more than 1 repeat sample at the monitoring location required for triggered source water monitoring, the water system may reduce the number of additional (CO) source water samples required by the number of repeat samples taken at that location that were not E. coli-positive.
- (II) If such ground water system takes more than 1 repeat sample at the source water monitoring location and more than 1 repeat sample is E. coli-positive, the water system has violated the E. coli MCL and shall also propose corrective action under the Ground Water Rule.
- (III) If all repeat samples taken at the source water monitoring location are E. coli negative and a repeat sample taken at a monitoring location other than the source water monitoring location is E. coli-positive, such ground water system has violated the E. coli MCL, but is not required to collect 5 additional (CO) source water samples.

### **General sampling requirements for total coliform**

1. A water system shall collect total coliform samples in accordance with the water system's sample siting plan.
2. A water system shall measure the residual disinfectant concentration at the same point and at the same time as the water system collects total coliform samples. The presence of a residual disinfectant concentration in a water system's sample when the system does not have department approval to use continuous chlorination shall invalidate the sample. A sample invalidated by the department does not count toward meeting the minimum Total Coliform Rule monitoring requirements.
3. A water system shall take at least the minimum number of required samples even if the water system has had an E. coli MCL violation or has exceeded the coliform treatment technique triggers before the end of the monitoring compliance period.
4. A water system may take more than the minimum number of routine samples required to investigate potential problems in the distribution system and use this monitoring as a tool to assist in uncovering problems.
  - a. A system shall include the results of such samples in calculating whether any coliform treatment technique triggers have been exceeded if:
    - i. The system collected the samples in accordance with the system's sample siting plan; and
    - ii. The system collected the samples from sites that are representative of water throughout the distribution system.
  - b. If any of the results of such samples are total coliform-positive, the system shall collect repeat samples at the repeat sampling locations identified in the water system's sampling site plan.

5. **Special purpose (SP) samples.** A special purpose sample is a sample that is taken to determine whether disinfection practices are sufficient following routine maintenance work, such as pipe placement, replacement, or repair, on the distribution system and that is not collected in accordance with a system's sampling plan. A system shall not use special purpose samples for compliance to determine whether any coliform treatment technique triggers have been exceeded. Repeat samples are not considered special purpose samples, and shall be used to determine whether any coliform treatment technique triggers have been exceeded.

## **Seasonal Systems**

A Seasonal System is defined as a non-community water system that is not operated as a public water system on a year-round basis and starts up at the beginning and shuts down by depressurizing and dewatering all or a portion of its distribution system at the end of each operating season.

### **Seasonal System Types**

The RTCR requires different start-up procedures depending on the type of seasonal system. The three types of seasonal public water systems include:

1. **Depressurized Seasonal (NPAY):** The entire water system is depressurized (i.e. all of the waterlines are drained) for a period of time each year. This type of system is required to submit a certification that the required start-up procedures were completed prior to opening.
2. **Partially-Depressurized Seasonal (PPAY):** The water system is partially-depressurized (i.e. some of the waterlines are drained) for a period of time each year. This type of system is required to submit a certification that the required start-up procedures were completed prior to opening.
3. **Fully-Pressurized Year-Round Seasonal (APIO):** The entire system stays fully-pressurized (i.e. none of the waterlines are drained), but no one has access to the water for a period of time during the year (must be at least an entire calendar quarter). This type of system is not required to complete the required start-up procedures prior to opening.

### **Seasonal System Monitoring Requirements**

The standard routine monitoring frequency for seasonal systems is monthly however seasonal systems are allowed to remain on their existing quarterly schedule when transitioning to the new RTCR monitoring requirements, effective April 1, 2016. After this date, a seasonal system on a quarterly monitoring frequency shall begin monthly monitoring in the month after it experiences any of the events below:

- Triggers a level 2 assessment or 2 level 1 assessments in a rolling 12-month period;
- Has an E. coli MCL violation;
- Has a coliform treatment technique violation;
- Has two monitoring violations under this subsection in a rolling 12-month period; or
- Has 1 monitoring violation under this subsection and 1 level 1 assessment under the provisions of subdivision (9) of this subsection in a rolling 12-month period.

As part of a Seasonal System's Sample Siting Plan, a Seasonal System that monitors quarterly must designate the time period or periods for monitoring based on site-specific considerations. Such considerations include monitoring during periods of highest demand or highest vulnerability to contamination or prior to major events that may draw more consumers. These designations must be reviewed and approved by the Department. **All Seasonal Systems that monitor quarterly must submit the time period(s) for monitoring to the Department on the *Sample Siting Plan for Seasonal Public Water Systems Monitoring Quarterly* form for review and approval.**

### **Sample Siting Plan Template**

The Department has developed a Sample Siting Plan Template that can be used by public water systems to create a sampling siting plan that meets these minimum requirements.