

EPA Region 8 Revised Total Coliform Rule

Sample Siting Plan Instructions

Why do I need to develop a Revised Total Coliform Rule (RTCR) sample siting plan?

The purpose of this plan is to specify where in the distribution system routine bacteriological samples will be collected to ensure they are representative of the water quality in your system. The original siting plan should be kept on-site for use by sampling personnel. Beginning April 1, 2016, under the RTCR, every water system will be required to collect bacteriological samples monthly. Prior to that date, your system will remain on the schedule as indicated in the annual Monitoring and Reporting Requirements list that EPA sends to your system.

The RTCR requires EPA to collect and review every public water system's RTCR sample siting plan prior to April 1, 2016, so please review, revise and submit your plan before that date. You will need to submit:

1. A list of sampling locations (a blank chart can be found in **Addendum C**):
 - You will need to indicate the sites for routine and repeat bacteriological monitoring in your distribution system; and
 - Any source water sampling sites if subject to the Ground Water Rule.

2. A map of the distribution system showing locations of your sample sites as described in the sample siting plan. You can use a diagram, distribution system map, aerial photo, etc. Clearly indicate if there are multiple distribution systems and if those distribution systems are connected to each other.

Where to submit your plan:

Send a copy of your RTCR sample siting plan via mail, e-mail, or fax to:

EPA Region 8
Drinking Water Program 8P-W-DW
1595 Wynkoop Street
Denver, CO 80202
Attn: RTCR Rule Manager
Fax: (877) 876-9101
Email: R8DWU@epa.gov

How to choose a laboratory:

Not all laboratories have been approved and certified to analyze for all the required drinking water contaminants. You must send your samples to a laboratory that is certified for the specific samples that you are submitting. For a list of certified labs, visit the EPA Region 8 website:

<http://www2.epa.gov/region8-waterops> and click the certified lab link.

General Requirements

Process for selecting sample sites and rotation:

Review the layout of your distribution system and choose RTCR sample sites that will represent each area of the distribution system if sampled on a monthly rotating basis throughout an entire year or open season. Be sure to take into account non-permanent sources (seasonal or interim). These sources need to be represented within your siting plan. If your water system has multiple (completely separated) distribution systems, you must select sample sites within each separate distribution system. Samples can be rotated among the different distribution systems in different months, or you can collect samples in each distribution system each month, even if that means collecting more samples than are required. See Addendum B, example 3.

The siting plan may need to be updated periodically to account for system changes (such as population changes, new sources, or change in treatment, etc). The plan should be reviewed annually and during your sanitary survey to incorporate any changes. Submit any revisions to the EPA regional office as soon as they occur.

Routine Monitoring Requirement

Unless otherwise specified in your monitoring and reporting requirements, most systems will be placed on the monitoring schedule seen in **Addendum A** of this document.

Use the chart below as an example for formatting the sample siting plan. The following must be included in the plan:

- Routine sampling location(s);
- Repeat sampling locations (only necessary if your routine sample is TC+);
- Ground Water Rule (GWR) source sample locations for systems using ground water sources. (GWR source samples are only required if your routine sample is TC+. You must sample every ground water source operating at the time of the TC+ routine sample).

Repeat Monitoring

After April 1, 2016 under the RTCR, systems must collect no fewer than three repeat samples for each TC+ routine sample. This requirement will apply to all systems.

- All repeat samples need to be taken within 24 hours of notification of a TC+ routine sample. If you cannot make this timeframe, be sure to contact EPA Region 8 as soon as possible;
- One repeat sample is required to be taken from the same tap as the original TC+ sample;
- One repeat sample should be taken within five taps upstream of the original TC+ sample, and one should be taken within five taps downstream;

Take note of your routine sample locations. Can you take proper repeats based on your current choices of routine sampling sites? If not, you will need to reevaluate your routine sites and choose another location. If you do not have a distribution system, upstream and downstream locations may not exist. In this case, you would need to collect multiple samples at the original location to count as repeat samples.

Follow this same format but expand as necessary if your system would need to take more than one sample per month. (Seasonal systems only have to sample during their operating season). See **Addendum B** for examples and **Addendum C** for blank pages.

1 sample/month	<u>Routine sample location</u>	<u>Repeat sample locations</u>	<u>GWR sample location (any ground water sources operating at the time of a routine TC+)</u>
January	1)	1) (same as routine location)	
	(within 5 taps upstream)	2)	
	(within 5 taps downstream)	3)	
February	1)	1) (same as routine location)	
		2)	
		3)	
March	1)	1) (same as routine location)	
		2)	
		3)	

E. coli Testing and E. coli MCL Compliance Determination

Any TC+ sample result is automatically analyzed for *E. coli* (EC) by your lab. Any EC+ repeat sample or any total coliform-positive repeat sample following an EC+ routine sample constitutes an *E. coli* MCL violation. All *E. coli* MCL violations are situations that require you to contact EPA Region 8 immediately and distribute public notice including a boil order to your customers.

Disinfectant (chlorine) residual monitoring:

If you chlorinate, your system may need to conduct residual disinfectant monitoring in the distribution system for the Disinfection By-Product Rule and/or the Surface Water Treatment Rule. Review your Monitoring and Reporting Requirements sheet to verify if disinfectant monitoring is necessary. If you need to conduct this monitoring, keep the following in mind:

- The residual disinfectant must be measured at the same time and the same location as each total coliform bacteria sample.
- These measurements must be conducted in the field by a certified operator (or under the direction of the certified operator).
- Residual disinfectant measurements must be written on each total coliform sample slip when it is submitted to the laboratory.
- Ask your laboratory to forward this information to EPA along with the sample results.

Depending on the disinfectant used in the distribution system, ensure you are measuring the proper disinfectant residual:

- ❖ If chlorine is used, the disinfectant residual must be measured as free, total, or combined chlorine
- ❖ If chloramines are used, the disinfectant residual must be measured as total chlorine

Ground water source sampling:

Triggered Source Water Monitoring Requirement

Your system may need to conduct triggered source water sampling if you use a ground water source and have a TC+ routine sample result. Review your Monitoring and Reporting Requirements sheet to verify if source water monitoring is necessary. If you need to conduct this monitoring, keep the following in mind:

- Within 24-hours of notification that a *routine* Total Coliform Rule distribution system sample is TC+, you must collect a raw water sample from each groundwater source that was in use at that time for every routine TC+ sample (e.g. if you have three routine TC+ samples, you will need to collect three source samples from *each* ground water source). This sample must be analyzed for E. coli.
- You will need to report this data using the “Source Water Sampling-Triggered Source Monitoring Sample Collection and Reporting Form” found on our website at: <http://www2.epa.gov/region8-waterops/wyoming-and-tribal-triggered-groundwater-source-sampling-form>
- If you need further assistance on the Ground Water Rule and the required steps after a routine TC+ sample, please consult: <http://www2.epa.gov/region8-waterops/epa-region-8-drinking-water-unit-tech-tips-follow-unsafetotal-coliform-positive>

If the system received EPA Region 8 approval to use a sampling site that represents more than one groundwater source, please indicate that on the sample collection and monitoring form mentioned above that is submitted with your samples.

Addendum A: Required number of monthly routine samples under the Revised Total Coliform Rule

Sampling requirements for all water systems:

Population served/day	Routine Samples/Month	Population served/day	Routine Samples/Month
25-1,000	1	8501-12900	10
1001-2500	2	12901-17200	15
2501-3300	3	17201-21500	20
3301-4100	4	21501-25000	25
4101-4900	5	25001-33000	30
4901-5800	6	33001-41000	40
5801-6700	7	41001-50000	50
6701-7600	8	50001-59000	60
7601-8500	9	59001-70000	70

Addendum B: Examples of RTCR Sample Siting Plans

- 1) Your water system is a town serving 550 people year around. One routine TCR sample per month is required. Repeating the same set of three rotating locations every quarter is acceptable. Repeat this pattern to finish the monitoring year.

1 sample/month	<u>Routine sample location</u>	<u>Repeat sample locations</u>	<u>GWR sample location (any sources running at the time of a routine TC+)</u>
January	1) Town Hall	1) (same as routine location)	Well #1
	(within 5 taps upstream)	2) Senior Center	Well #2
	(within 5 taps downstream)	3) Big A Truck Stop	
February	1) 123 Main St	1) (same as routine location)	Well #1
		2) Oskar’s Bar	Well #2

		3) Fire Station	
March	1) 456 Center St.	1) (same as routine location)	Well #1
		2) 789 Center St.	Well #2
		3) 1010 Grand Ave	
April	1) Town Hall	1) (same as routine location)	Well #1
		2) Senior Center	Well #2
		3) Big A Truck Stop	
May	1) 123 Main St	1) (same as routine location)	Well #1
		2) Oskar's Bar	Well #2
		3) Fire Station	
June	1) 456 Center St	1) (same as routine location)	Well #1
		2) 789 Center St.	Well #2
		3) 1010 Grand Ave	

2) You have a seasonal campground/RV park open from June to August that serves 50 people per day but has two separate distribution loops (one for the campground and one for the RV section). Your system would only be required to monitor one sample per month. You could rotate the single sample each month between the two distribution loops, but we recommend collecting a sample from each section each month to ensure both loops are functioning properly. If you opt to take a secondary sample in addition to your routine sample, be sure to label that as “special” when submitting to the lab:

1 sample/month	<u>Routine sample location</u>	<u>Repeat sample locations</u>	<u>GWR sample location (any sources running at the time of a routine TC+)</u>
June	1) CG Loop Tent #1	1) (same as routine location)	Resort Well #1
	2) Optional RV loop sample (special)	2) Shower House	
		3) Rec Room	
July	1) RV loop Space #6	1) (same as routine location)	Resort Well #1
	2) Optional CG loop sample (special)	2) RV loop Space #1	
		3) RV loop Space #10	
August	1) CG Loop Tent #1	1) (same as routine location)	Resort Well #1
	2) Optional RV loop sample (special)	2) Shower House	
		3) Rec Room	

3) You have a system that serves 7,000 people per day. A total of eight samples are required per month and should be collected at regular time intervals throughout the month. For example, you might opt to take a set of four samples on the 1st and 3rd weeks of each month.

First week of the month:

- Sample 1) Senior Center
- Sample 2) Hospital
- Sample 3) 789 Old Hwy
- Sample 4) 123 Main St.

Third week of the month:

- Sample 1) Senior Center
- Sample 2) Hospital
- Sample 3) 789 Old Hwy
- Sample 4) 123 Main St.

Use the sample siting form to indicate the repeat locations and any required source water sample locations for each sample site.

Addendum C: Example forms. Expand the following table as necessary. Feel free to detach and use this example form:

	<u>PWS NAME:</u>	<u>PWS ID #:</u>	<u>GWR sample location (any sources running at the time of a routine TC+)</u>
(1 sample/mo)	<u>Routine sample location</u>	<u>Repeat sample locations</u>	
January	1)	1) (same as routine location)	
		2)	
		3)	
February	1)	1) (same as routine location)	
		2)	
		3)	
March	1)	1) (same as routine location)	
		2)	
		3)	
April	1)	1) (same as routine location)	
		2)	
		3)	
May	1)	1) (same as routine location)	
		2)	
		3)	
June	1)	1) (same as routine location)	
		2)	

		3)	
July	1)	1) (same as routine location)	
		2)	
		3)	
August	1)	1) (same as routine location)	
		2)	
		3)	
September	1)	1) (same as routine location)	
		2)	
		3)	
October	1)	1) (same as routine location)	
		2)	
		3)	
November	1)	1) (same as routine location)	
		2)	
		3)	
December	1)	1) (same as routine location)	
		2)	
		3)	