



Groundwater Rule

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The Groundwater Rule (GWR) built onto the Total Coliform Rule (TCR) by addressing the health risks of fecal contamination in groundwater sources used by public water systems. The Groundwater Rule remained intact with slight updates as the TCR was modified to the Revised Total Coliform Rule (RTCR), effective April 2016.

Who Is Affected?

The GWR applies to all Group A public water systems that:

- ◆ Rely on at least one or more groundwater source.
- ◆ Receive finished groundwater from another public water system.
- ◆ Mix groundwater with surface water sources; or groundwater under the direct influence of surface water. **Systems that combine all of their surface water and groundwater sources before treatment are exempt from the GWR.**

What Does the Rule Require?

The basic requirements of the Groundwater Rule include source water monitoring (triggered and assessment), compliance monitoring, sanitary surveys, corrective actions, and public notification.

Source Water Monitoring

Triggered Source Water Monitoring is required when one of your system's routine distribution samples collected under RTCR is total coliform positive. Within 24 hours of notification of the total coliform positive result, you must collect triggered source samples and have them tested for *E. coli*. You must sample each groundwater source (prior to treatment) that was in operation when you collected the routine sample.

If one of your triggered source samples is *E. coli*-positive you must distribute a public notice to all users within 24 hours of learning the sample result. You must also take corrective action as directed by the department. If not so directed, collect five additional source samples within 24 hours. If any of the five additional source samples is *E. coli*-positive, you must take corrective action. See pages 3 and 4 for corrective action details.

TIP: Your Coliform Monitoring Plan should have most of the information you need to submit a triggered source water monitoring plan.

If you have more than one groundwater source, you may be able to reduce the number of source samples you must collect by having an approved triggered source water monitoring plan (TSMP).

Your TSMP should be in your coliform monitoring plan (CMP). The TSMP must include justification to support your request to not have to sample every groundwater source for every

routine sample site. Such justification should include, but not be limited to, a system map that clearly identifies each source, routine coliform monitoring sites, and any distribution system features that help to identify the groundwater source associated with each sample site (such as pressure zones and isolation valves). The Department of Health (DOH) must approve your TSMP.

Assessment Source Water Monitoring may be required on a case-by-case basis to evaluate sources that the department determines may be at risk for fecal contamination. This usually requires you to collect one source sample per month and have it tested for *E. coli*. We will work with you to determine how long you should sample and if any further action is required based on your results.

Other Source Monitoring Details

Consecutive and Wholesale Systems: A consecutive system is a system that purchases water; the system that sells the water is a wholesaler. When a consecutive system has a routine distribution sample that is total coliform positive the system must notify their wholesaler within 24 hours.

The wholesale system is required to collect triggered source samples from all of their groundwater sources that were in operation on the date the consecutive system's positive routine sample was collected. All the above mentioned response requirements apply including notifying all consecutive systems, if any of the samples is *E. coli* positive. There may be exceptions to this monitoring, so we encourage wholesale systems to contact us as soon as they get notice from a consecutive system.

Sample Location and Size: You must collect all source water samples at the source prior to treatment. If you are unable to meet these conditions, contact us to request an alternative sample location. All *E. coli* samples must be at least 100 milliliters (mL) and analyzed by an accredited laboratory using EPA-approved methods.

Compliance Monitoring

Compliance monitoring confirms the effectiveness and reliability of disinfection treatment. If you provide 4-log treatment of viruses AND perform compliance monitoring, you won't have to meet the triggered source water monitoring requirements. DOH must approve your 4-log treatment system.

Compliance monitoring for chemical disinfection means that you must monitor the residual concentration daily before the first customer during peak flow, and continuously monitor if you serve more than 3,300 people. Your tests must confirm you are providing a chlorine residual high enough to maintain 4-log treatment. DOH must approve membrane and alternative treatment technologies, and you must follow our specifications for operations and maintenance.

You will be in violation if you fail to monitor, report, or provide adequate treatment. At a minimum, you must send public notification to your customers.

Systems providing 4-log treatment that is not the result of a corrective action or state mandate may choose to do triggered source water monitoring instead of compliance monitoring.

For more information on 4-log treatment or if you provide disinfection and are not sure if it meets 4-log inactivation, contact our regional office (see Page 5).

4-log Treatment

Systems that provide 4-log treatment of viruses can avoid taking triggered source water monitoring samples by conducting compliance monitoring. You must let us know that you intend to exercise this option.

Sanitary Surveys

The GWR increases the required frequency of sanitary surveys for community water systems from once every five years to once every three years. A community water system may qualify for a five-year schedule if it meets the following criteria.

1. Provides 4-log treatment of viruses for all groundwater sources or,
2. Since the last sanitary survey, has no *E. coli* MCL or treatment technique violation, has no violation under the TCR through March 2016, has no more than one total coliform monitoring violation, and has no unresolved significant deficiencies in the current survey

For information on sanitary surveys, visit us online at

doh.wa.gov/CommunityandEnvironment/DrinkingWater/RegulationandCompliance/SanitarySurveys.aspx.

Corrective Actions

The GWR requires you to take corrective action when you have a significant deficiency or when a source water sample is *E. coli*-positive.

A significant deficiency is "a defect in the design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that DOH determines to be causing, or have the potential for causing, the introduction of contamination into the water delivered to consumers." If left unaddressed, a significant deficiency could cause a health risk to

your customers. These deficiencies can occur at any time, but most often are detected during a sanitary survey.

Corrective actions can involve one or more of the following:

- ◆ Correct all significant deficiencies.
- ◆ Provide an alternative source of water.
- ◆ Eliminate the source of contamination,
- ◆ Provide 4-log treatment of viruses.

Your sanitary survey report will identify any deficiencies you need to address. If the report doesn't identify specific actions needed to correct the problem, you must contact us within 30 days to determine corrective actions. Your system has 120 days per WAC 246-290-453(1)(c) either to complete corrective actions or to comply with a corrective action plan.

Several situations and violations in the Groundwater Rule require public notification. This table outlines these violations, the type of water system the violation applies to, and the type of notification required.

Issue	Notification Required	System Type
<i>E. coli</i> -positive groundwater source sample ¹	Tier 1 PN, CCR, Special Notification	Community and Noncommunity
Failure to take corrective action within 120 days of notification	Tier 2 PN, CCR, Special Notification	Community and Noncommunity
Failure to maintain at least 4-log treatment of viruses	Tier 2 PN, CCR	Community and Noncommunity
Failure to meet monitoring requirements	Tier 3 PN, CCR	Community and Noncommunity
Uncorrected significant deficiency ²	Special Notice in CCR	Community
	Special Notice	Noncommunity
Unaddressed <i>E. coli</i> -positive groundwater source sample ³	Special Notice in CCR	Community

¹ Consecutive systems served by the groundwater source must also notify the public.

² Systems must continue to notify the public annually until they correct the significant deficiency.

³ Community systems must put a notice in the CCR annually until they address the positive source water sample.

Systems that receive an *E. coli*-positive result in a source water sample must notify their customers within 24 hours after getting their results.

Wholesale systems that receive an *E. coli*-positive result in a groundwater source sample must notify all their customers and the consecutive systems that receive their water within 24 hours. The consecutive system must then notify all of their customers within 24 hours after receiving notification from the wholesale system.

It is important to contact us as soon as possible if you receive an *E. coli*-positive sample result. For more information on public notification requirements and resources, visit us online at doh.wa.gov/CommunityandEnvironment/DrinkingWater/DrinkingWaterEmergencies/PublicNotification.aspx.

Resources

EPA developed several guidance documents and fact sheets to assist water systems with the requirements of the rule.

- ◆ Compliance Help—includes quick reference guides, fact sheets, and full guidance manuals. epa.gov/safewater/disinfection/gwr/compliancehelp.html
- ◆ Basic Information—includes several questions and answers. epa.gov/safewater/disinfection/gwr/basicinformation.html

The Office of Drinking developed the following publication to help you.

- ◆ Groundwater Rule: Source Water Sample Taps (DOH 331-436): doh.wa.gov/portals/1/Documents/pubs/331-436.pdf.

For more information

Staff from our regional offices can provide technical assistance, especially with source water sampling and *E. coli*-positive results.

Northwest Regional Office—Kent

Coliform Program: 253-395-6775 Main Office: 253-395-6750

Southwest Regional Office—Tumwater

Coliform Program: 360-236-3045 Main Office: 360-236-3030

Eastern Regional Office—Spokane Valley

Coliform Program: 509-329-2134 Main Office: 509-329-2100



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