

October 2010

DOH 331-447  
Revised



# Groundwater Rule (GWR)

Effective November-1, 2010

Group A Public Water Supplies – Chapter 246-290 WAC

## Background

To improve public health and protect drinking water sources, the Department of Health adopted the federal Groundwater Rule (GWR) on October 1, 2010. The rule builds upon the Total Coliform Rule (TCR) by addressing the health risks of fecal contamination in groundwater sources used by public water system.

## Who is affected?

GWR applies to all Group A public water systems that:

- Rely entirely on one or more groundwater sources.
- Receive finished groundwater from another public water system.
- Mix surface water sources (or groundwater under the direct influence of surface water) with groundwater. *Systems that combine all of their sources before treatment are exempt from the rule.*

## How are they affected?

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 the TCR 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 test each source (prior to treatment) that was in operation at the time you collected the routine sample.

If one of your triggered source samples is *E. coli* positive, we will direct you to either take corrective action or take five additional source samples within 24 hours. If any of the five additional source samples is *E. coli* positive, you must take corrective actions described on pages 3 and 4.



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If you have more than one groundwater source, you may be able to reduce the number of source samples you must collect by submitting a **triggered source water monitoring plan**. This plan should include a system map that clearly identifies each source, routine coliform monitoring location, and any distribution system features that help identify the source associated with each sample location (such as pressure zones and isolation valves). We must approve this plan.



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

**Assessment Source Water Monitoring** may be required on a case-by-case basis to evaluate sources that 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**

**Small Systems:** If your system serves 1,000 people or fewer and you have to collect a triggered source water sample, you can use this sample as both a triggered source water sample AND a repeat sample to meet the requirements of the Total Coliform Rule. In this case, an *E. coli* positive source water sample would result in an Acute Coliform MCL violation under the Total Coliform Rule.

**Consecutive and Wholesale Systems:** Consecutive systems (systems that purchase water) that receive total coliform positive sample results from a routine distribution sample must notify their wholesaler (the system selling the water) within 24 hours.

The wholesale system is required to sample all of their sources that were in operation on the date the consecutive system's positive routine sample was collected. There may be exceptions to this monitoring, so wholesale systems are encouraged to contact the department 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, you may request an alternative sample location by contacting the department. 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 your system's 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. The treatment must be approved by the department and located before your first customer.

**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 notify the department you intend to exercise this option.

For chemical disinfection, 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. Membrane and alternative treatment technologies must be approved and be operated and maintained as specified by the department.

You will be in violation if you fail to monitor, report, or provide adequate treatment. At a minimum, you will be required to 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 trigger 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 your regional office listed on page 5.

### **Sanitary Surveys and Corrective Actions**

GWR increases the required frequency of sanitary surveys for community water systems from once every 5 years to once every 3 years. A community water system may be allowed to stay on a 5-year schedule if it meets one of the following criteria:

1. Provides 4-log treatment of viruses for all groundwater sources.
- OR
2. Has no total coliform MCL violations, has no more than one total coliform monitoring violation since the last survey, and has no unresolved significant deficiencies in the current survey.

For information on sanitary surveys, visit our website at [http://www.doh.wa.gov/ehp/dw/Programs/sanitary\\_survey.htm](http://www.doh.wa.gov/ehp/dw/Programs/sanitary_survey.htm)

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 defined as “a defect in the design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the department 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 may have the potential of causing a health risk to your customers. These deficiencies can occur at anytime, but more often they 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.

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 45 days to either complete corrective actions or comply with a corrective action plan.

### Public Notification

There are several situations and violations in the Groundwater Rule that require public notification. The table outlines these violations, the type of notification required, and the system type each apply to Consumer Confidence Report (CCR) requirements only apply to community systems:

Issue	Notification Required	System Type
<i>E. coli</i> positive groundwater source sample <sup>1</sup>	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 <sup>2</sup>	Special Notice in CCR (COMM) Special Notice (NCWS)	Community Noncommunity
Unaddressed <i>E. coli</i> positive groundwater source sample <sup>3</sup>	Special Notice in CCR	Community

<sup>1</sup> Consecutive systems served by the groundwater source must also notify the public.

<sup>2</sup> Systems must continue to notify the public annually until they correct the significant deficiency.

<sup>3</sup> Community systems must put a notice in the CCR annually until the positive source water sample has been addressed.

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

Wholesale systems who receive *E. coli* positive results must notify all consecutive systems who receive the source water and all of their customers within 24 hours. The consecutive system must then notify all of their customers within 24 hours of 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 our website at [http://www.doh.wa.gov/ehp/dw/fact\\_sheets/public\\_notification.htm](http://www.doh.wa.gov/ehp/dw/fact_sheets/public_notification.htm)

## Resources

EPA has 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: <http://www.epa.gov/safewater/disinfection/gwr/compliancehelp.html>
- Basic Information—includes several questions and answers: <http://www.epa.gov/safewater/disinfection/gwr/basicinformation.html>

The Office of Drinking has developed tools to help you as well:

- Groundwater Rule: Source Water Sample Taps (DOH 331-436): <http://www.doh.wa.gov/ehp/dw/Publications/331-436.pdf>

## For more information

Staff from our regional offices are available to provide technical assistance, especially with source water sampling and *E. coli* positive results. Please contact them at:

### Northwest Regional Office—Kent

Coliform Program: (253) 395-6775

Main Office: (253) 395-6750

### Southwest Regional Office—Tumwater

Coliform Program: (360) 236-3044

Main Office: (360) 236-3030

### Eastern Regional Office—Spokane Valley

Coliform Program: (509) 329-2134

Main Office: (509) 329-2100

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