



## Groundwater Rule: Source Water Sample Taps

The Groundwater Rule (GWR) requires all Group A water systems with groundwater sources to sample each groundwater source for *E. coli* within 24 hours after a distribution system sample is unsatisfactory for total coliform, unless they routinely:

- Disinfect to meet the standard of 4-log virus inactivation (99.99 percent).
- Complete the associated daily compliance monitoring.



Operators must collect these samples as close to the source as possible and before any treatment facilities, pressure tanks, or storage tanks.

To meet these monitoring requirements, the Department of Health Office of Drinking Water (DOH) expects all water systems to have properly installed sample taps at each groundwater source.

### What is the difference between a “GWR source sample tap” and a “chemical source monitoring sample tap”?

The GWR source sample tap is located as close to the source as possible and before any treatment. A chemical source monitoring sample tap is located after all treatment but prior to the first distribution connection.

### Where should I install a GWR source-water sample tap?

Install GWR source sample taps as close to the source as possible and prior to all treatment facilities, pressure tanks, and storage tanks.

Poorly installed GWR sample taps make it difficult to use proper sampling techniques and increase the risk of contaminating a sample during collection.

### GWR sample taps should:

- **Point downward.**
- **Be in a clean, accessible location.** Fecal matter may contaminate samples collected at sites with animal infestations such as bats, birds, or rodents. Sample taps buried in wood chips or wrapped in loose insulation can become contaminated.
- **Be at least 12 inches above the floor or ground level.** When taps are lower than that, water containing coliform bacteria is more likely to backsplash into the sample bottle.
- **Be located where water from flushing the tap for 5 minutes can easily drain away.**



### What type of GWR source-water sample taps do I need?

If you have to install new GWR sample taps, select a smooth-nosed model with no interior or exterior threads, and no screen, aerator, or other attached appurtenances. Use the following information to evaluate whether existing source-water sample taps are adequate.

- A source-water sample tap should not be a swivel faucet, hot-and-cold mixing faucet, frost-free sillcock, petcock, plastic sample tap, drinking fountain, janitorial sink, fire hydrant, or blow-off.
- Do not use a yard hydrant. See discussion below on wells with pitless units.
- Avoid swinging faucets and faucets with risers.

### Where do I install a GWR source-sample tap for a well with a pitless unit?

**Consult with your DOH regional office for the best way to locate a GWR sample tap for your well with a pitless unit.** A well with a pitless unit may have a frost-free yard hydrant installed next to the wellhead. In general, you should avoid all yard hydrants for coliform sample collection. Regular frost-free yard hydrants have weep holes that drain the water from the riser. These same holes can allow contaminated water into the hydrant. Although “sanitary” hydrants do not have weep holes, you should not use them for bacteriological sampling.

### Can I locate a GWR sample tap after treatment that is not disinfection?

You should install the GWR source sample tap prior to all treatment facilities if possible, including water softeners, cartridge filters, carbon filters, chemical injection points, and so on. DOH may allow samples after treatment on a case-by-case basis and only if the treatment will have no impact on microbial quality of the source water and it is not possible to directly sample the untreated water. You must have prior approval from the department before collecting samples after treatment.

You need to understand how your water system plumbing functions to be sure you install the tap where it will definitely sample the source water. This is especially important if there are multiple sources and complex treatment-control systems. DOH may approve of bypassing a treatment system to collect a source water sample, but you should avoid that if possible.

### **Can I install a GWR source sample tap near a bladder pressure tank?**

It is not ideal to do so. If that it is your only choice, take special care when using the tap. Pressure tanks are a potential source of contamination from sediment build-up, damaged bladders, biofilm growth, or stagnant water. If you collect a sample from a tap located near a pressure tank while the well pump is not operating, the sample will actually be from the water in the tank rather than the source water.

### **What should I do if I don't have an ideal GWR sample site or sample tap?**

Now is the time to install the best type of GWR sample tap possible in the best location.

If a system's configuration does not allow for sampling at the source itself, DOH may approve a different sampling location if it will provide samples that represent the quality of that groundwater source.

### **How do I locate a GWR sample tap for a well field or spring field?**

You must install a faucet on the common manifold before any treatment. This will allow you to collect a raw-water source sample that represents a blend of all the operating wells in the well field or the operating springs in a spring field.

### **How do I locate a GWR source sample tap for a well with a hand pump?**

There is no discharge piping associated with hand pumps, so you will have to collect a source sample directly from the discharge of the hand pump.

### **Does the condition of the GWR sample tap make a difference?**

Yes. Dirty or leaking sample taps increase the risks of an unsatisfactory result that may not represent the true quality of the source water. Sample taps should not be dripping faucets or faucets that leak around the valve stem or base.



### **How do I ensure the GWR source sample tap will actually sample source water?**

The person who will use the GWR source sample tap must know how the system operates. If there are multiple sources or complicated treatment-control systems, that person also must ensure that it is possible to sample each source individually. Even with a simple one-well system, it is possible to sample the wrong water.

The key to successfully using a GWR source sample tap is to **make sure the well pump is operating when you collect the sample**. If the well pump is not operating, the sample will be from the distribution system, a pressure tank, or a storage tank instead of source water.

### For more information

Call your DOH regional office:

**Eastern Region:** Spokane Valley (509) 329-2100

**Northwest Region:** Kent (253) 395-6750

**Southwest Region:** Tumwater (360) 236-3030



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