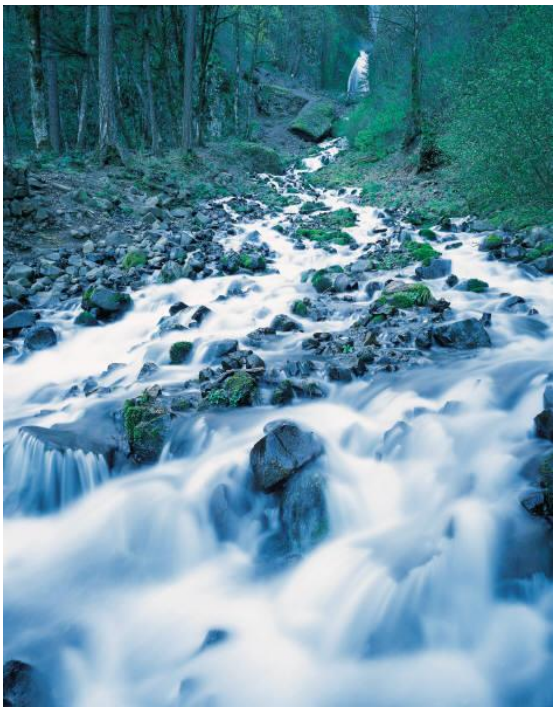
January 2017
DOH 331–317
Revised

Emergency Drinking Water Sources

Requirements for using emergency sources safely

Emergency sources are wells, springs, or other water sources drinking water systems use when their primary and seasonal sources are insufficient to meet consumer demands. Emergency sources can be a viable means of resolving a water supply shortage if the water system plans for it and communicates about it properly.



Water systems use emergency sources only during extreme, mostly unpredictable circumstances. A water system must issue a health advisory to its customers before it starts using an emergency source, unless it operates the source under conditions we specifically approve.

State rule defines emergency water sources as:

- Intended for emergency purposes only.
- Not used for routine or seasonal water demands.

Include emergency sources in your Emergency Preparedness and Response Plan

State rule requires water systems with emergency sources to maintain the following information in the system's Emergency Preparedness and Response Plan:

- Source name, number, capacity, and location.
- The engineering design approval status of the source.
- The conditions in which the utility will activate the emergency source and use it to supply the distribution system.
- The person in authority who will decide to activate the emergency source and begin supplying the distribution system.
- The operational steps the utility will take before activating the emergency source and using it to supply the distribution system.
- The water quality sampling the utility will perform on an on-going basis and immediately before activating the emergency source to supply the distribution system.
- Steps the utility will take to notify the public and the Office of Drinking Water (ODW) before activating the emergency source to supply the distribution system.

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water
HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER

Health risks associated with emergency sources

An emergency source may be an unsafe drinking water supply. The decision to use an emergency source to supply a public water system carries significant health implications. A water system must use care when deciding whether to use an emergency source. The main heath concerns are:

Sources subject to microbial contamination: Bacteria, viruses, and protozoa are acute contaminants and can cause severe gastrointestinal illness, diarrhea, and dehydration. Surface water sources, groundwater directly affected by surface water, and shallow hand-dug wells are most vulnerable to microbial contamination. Activities near the wellhead can also contaminate groundwater (wells and some springs). Shallow, poorly constructed wells, or those recharged through porous rock formations, are also especially at risk.

Sources known or vulnerable to elevated nitrate: Nitrate is an acute contaminant. Utilities must take special precautions to protect unborn babies and children less than one year old.

Unapproved interties: Utilities must not construct an emergency intertie with any type of water provider that does not ordinarily provide drinking water. Interties must be approved, and must be with an approved Group A water system.

Emergency sources with known contamination: Many emergency sources are contaminated. They are former permanent or seasonal sources that triggered a treatment requirement but, instead of installing treatment, the utility reclassified them to "emergency." Some of these sources exceed a long-term health risk, such as arsenic. Others may pose a short-term acute health risk, such as *E. coli*, nitrate, or surface water.

Lack of maintenance and sampling: Many utilities do not have the resources to properly maintain and ensure the standby readiness of their emergency sources. Consequently, sources once considered "safe" to use any time, but since neglected, may not be safe or reliable any longer.

Keeping your emergency source ready for use

To ensure emergency sources are ready to use, water systems should have a maintenance strategy, make needed repairs in a timely manner, and keep good records of inspections. The strategy should include:

Testing: To protect water quality, periodically test the source water for coliform and nitrates. Quarterly testing is usually appropriate. Identify these samples as "investigative." Develop a sampling plan to fit the utility's needs and include it in the Emergency Preparedness and Response Plan.

Preparing emergency source, pumps, valves, gauges, and other equipment

Disinfect the source (50 ppm chlorine for 12–24 hours), then dechlorinate while flushing well to waste until chlorine is completely removed.

Exercise all valves and operational controls to ensure they function properly.

Assess the area around the source for contaminants. Protect the source from all contaminating influences (chemicals, oil spillage, livestock and so on) to the extent possible.

Inspecting: To keep components in good working order, inspect physical facilities and operational controls at least quarterly. Check electrical connections and components for corrosion; inspect the

sanitary seal, vents and other hardware; and maintain sanitary control around the source. Emergency sources are subject to routine sanitary survey inspection by ODW and the local health department.

Operating: To ensure the source is ready to produce a sufficient supply, periodically operate the pump(s) to discharge at least three casing volumes. To do so requires the means to pump source discharge to waste. The utility should not introduce source water into the distribution system during operational checks. Testing should follow flushing.

Criteria for maintaining a physical connection between the emergency source and the distribution system

State rules allow a utility to maintain a physical connection between an emergency source and the distribution system if it meets one of these options:

Option 1: The emergency source is an emergency intertie with another Group A water system, approved under WAC 246-290-132.

Option 2: The emergency source is a drilled and cased well, the emergency source is included in an approved emergency preparedness and response plan, an isolation valve between the source and the distribution system is secured in the fully closed position, and the utility locks out and tags out the motor starter in the off position, isolating the pump from the power supply.

ODW's Regional Offices

After-hours Hotline 877-481-4901
Spokane Valley 509-329-2100
Kent 253-395-6750
Tumwater 360-236-3030

ODW or the local health jurisdiction will review the emergency preparedness and response plan during the utility's sanitary survey. If the minimum elements concerning emergency sources are included in the plan and found acceptable, then the surveyor can approve the plan.

A water system with an emergency source not satisfying the above conditions must physically disconnect the emergency source from the distribution system by removing a pipe segment or by an alternate ODW-selected means. Any utility with an emergency source requiring physical disconnection from the distribution system must receive prior permission from ODW or a local health official before supplying the distribution system from the source. Water systems should secure approval to keep their emergency sources physically connected, and to follow their approved protocols for testing, maintaining, and bringing an emergency source into active service.

Health Advisories

Water systems or state or local health officials issue health advisories when they determine health risks are sufficient to advise customers to take action. For example, if a water system brings an emergency source online without all required sampling or the safety of the water is in question, the advisory would inform customers that the water might not be safe to drink; list ways to protect health; and let them know the water system will notify them when it has water quality results.

Health advisories usually take the form of a drinking water warning, boil-water notice, or bottled-water order. We work closely with water systems to help determine when they need to issue advisories. In any event, a health advisory must be well thought out and provide very clear messages.

To make the process easier, learn about health advisories and how to issue one before you need to. We have fact sheets, brochures, and templates to help you online at doh.wa.gov/CommunityandEnvironment/DrinkingWater/DrinkingWaterEmergencies/EmergencyPublicationsforWaterSystems.aspx