



# GROUNDWATER RULE SUMMARY

## Drinking Water and Groundwater Bureau

November 2009 update

**This summary is intended to provide public water systems an overview of the Groundwater Rule (GWR).** The Department of Environmental Services (DES) rules are designated Env-Dw 717, Groundwater Monitoring and Treatment. The rules, summary, and any further information can be found at [www.des.nh.gov](http://www.des.nh.gov). From the "A to Z List" link on the top right, select "Drinking Water & Groundwater Bureau." On our home page, select "Education/Outreach" from the column on the right.

This rule:

- Applies to all public water systems (PWS) using groundwater (also called groundwater systems or GWS), including systems receiving their water from other systems using groundwater, i.e., consecutive systems. It may also include PWSs using both groundwater and surface water *unless* the PWS is subject to the surface water treatment rule, Env-Ws 380.
- Effective December 1, 2009, requires:
  - Investigative monitoring for all GWS wishing to stop disinfection, install disinfection, or add a new well.
  - Triggered source monitoring after a total coliform-positive sample in the distribution system .
  - Compliance monitoring where 4-log treatment is conducted.
  - Corrective action for any PWS with a significant deficiency or contaminated source water.

### **Investigative Monitoring (IM)**

- Required of GWSs that install disinfection, e.g., chlorination, ozone, or UV treatment, including those adding chlorine for oxidation to support another treatment process, e.g., arsenic removal, UNLESS meeting 4-log treatment and conducting compliance monitoring as outlined below.
- Requires six months of *E. coli* monitoring from each source; one sample should be prior to use of the well.
- Samples should be analyzed via a method that provides enumeration.
- A positive *E. coli* detection will require the GWS to institute a boil order, distribute public notice, and conduct corrective action on contaminated source(s).

### **Triggered Monitoring (TM)**

- Required of all GWSs not providing 4-log treatment, who are notified of a total coliform-positive sample collected under routine TCR bacteria monitoring (does not apply to repeats).
- Required at all sources active at the time the positive TCR sample was collected. Source sample(s) must be taken in conjunction with repeat samples within 24 hours and tested for *E. coli* using a method that provides enumeration.
- Required to determine if *E. coli* is present in PWS source water and whether corrective action is needed.
- *E. coli* detection will require the GWS to institute a boil order, conduct public notice, and collect five additional source water samples and/or conduct corrective action within a time frame set by DES.
- For GWSs, with a population less than 4,100 required to collect additional bacteria samples the month after a hit, triggered monitoring will be required only from regularly scheduled sites.

### **4-Log Treatment**

- Treatment of viruses (using inactivation, removal, or a DES-approved combination of 4-log virus inactivation or removal) before or at the first customer that kills 99.99% (4-log) of the pathogens.
- Assures that the treated water is adequately treated for microbial contamination.
- Owner must submit engineering and all operational information. DES will review and evaluate the process and establish specific monitoring parameters. DWGB's approval of the consultant's design is required.
- If you chlorinate, an analysis based on detention time and chlorine residual must be performed to demonstrate 4-log treatment is met. (Chlorination is the most practical method for small systems.)

(After demonstrating that 4-log treatment is met, you will be required to meet compliance monitoring criteria [see below] and report on a regular basis. You will not be subject to triggered monitoring requirements).

### **Compliance Monitoring**

- Required of all GWSs that have demonstrated that their disinfection process meets the criteria for 4-log treatment. (Triggered monitoring does not apply)
- Required to demonstrate that 4-log treatment is being met on a continuous basis.
- DES will establish a specific monitoring schedule depending on disinfectant process used.
- If the established residual level or treatment criteria are not met, DES and the public must be notified of the treatment failure and the treatment must be fixed.
- Requires daily monitoring of chlorine residual (or other alternate parameters)
  - Continuous monitoring required for GWSs serving more than 3,300 people.
  - Grab samples (or continuous) for GWSs serving less than 3,300 people.
- Requires daily recordkeeping and monthly reporting to DES.

### **Consecutive/Provider Requirements**

- Consecutive PWS must notify provider PWS within 24 hours of notification of a positive total coliform sample collected in the distribution system.
- Provider PWS must collect source samples from all wells (per triggered monitoring requirements above).
- Confirmed *E. coli* in the source requires public notice to **all** consecutive systems.

### **Sanitary Surveys**

- Not a new requirement.
- Required at all community PWS (at three-year intervals) and non-community PWS (five-year intervals) as presently conducted.
- All significant deficiencies need to be addressed within 120 days or other corrective action will be required (see below).

### **Corrective Action**

- Required where there is confirmed *E. coli* in the source or unresolved significant deficiencies.
- Corrective action options:
  - Correct all significant deficiencies.
    - Consult with DWGB within 30 days.
    - Complete corrective action or corrective action plan and schedule within 120 days.
  - Provide an alternate source of water (on a permanent basis).
    - Requires compliance with DWGB well siting rules.
  - Eliminate the source of contamination.
  - Provide treatment for 4-log virus removal at contaminated sources (see above).

### **Required Notices to the Public**

- Requires public notification after violation issuance.
- Consumer Confidence Report – yearly for community systems with added language if GWR violation.
- Special Notice – of fecal contamination of groundwater and outstanding significant deficiencies for both community systems and non-community systems

### **Contacts**

- Rule assistance: Selina J. Makofsky (603) 271-4109 or selina.makofsky@des.nh.gov
- Sampling and compliance assistance: Adam Torrey (603) 271-0672 or adam.torrey@des.nh.gov
- 4-log treatment options and approvals: Bob Mann (603) 271-2953 or robert.mann@des.nh.gov