

GROUNDWATER REGULATORY UPDATE - WISCONSIN

The State of Wisconsin is currently in the process of updating standards NR 809, 810, and 811 to comply with several Federal drinking water regulations. Some of the most significant impacts have arisen from the Groundwater Rule (GWR), and are discussed below.

Monitoring and Corrective Actions

Modifications to NR 809 will closely follow the requirements of the Federal GWR:

1. The GWR will require that WDNR (not the groundwater systems themselves) complete sanitary surveys for every groundwater system on a regular basis. Sanitary surveys serve to identify significant deficiencies in groundwater systems that could allow contaminants to enter the systems.
 - a. The eight elements evaluated in a sanitary survey are the water source, pump facilities, treatment, distribution system, finished water storage, system management and controls, monitoring and reporting requirements, and operator compliance with regulations.
 - b. WDNR must complete sanitary surveys within prescribed timelines:
 - 1) Community water supply – every three years
 - 2) Non-community water supply – every five years
 - 3) Community water supply with 4 log virus treatment or with outstanding performance as determined by IEPA – every five years
2. Within 24 hours of being notified of a positive total coliform (TC) result under routine Total Coliform Rule monitoring, a groundwater system must collect at least one raw water sample from each well in use when the positive TC sample was collected. This re-sampling is called triggered source water monitoring.
 - a. If a triggered source water sample is positive for a fecal indicator (total coliform or *E. coli*), WDNR will require the system to take corrective action or take five additional samples from the same source within 24 hours.
 - b. If any of the five additional samples is fecal indicator-positive, the system must take corrective action (see item 3 below).
 - c. NOTE: Triggered source water monitoring of raw water sources applies only to water supply systems that do not currently provide enhanced treatment of all their groundwater. Enhanced treatment provides at least 4 log removal or inactivation of viruses (**See side bar for details on virus removal/inactivation**).
3. When a system has a significant deficiency (identified by a sanitary survey) or a fecal indicator-positive groundwater source, the groundwater system must implement one or more of the following corrective actions:
 - a. Correct all significant deficiencies (repair well pads and sanitary seals; repair piping, tanks, and treatment equipment; control cross-connections, etc).
 - b. Provide an alternate source of water (new well or con-



What Does 4-log Removal of Biological Contaminants Mean?

This log-reduction terminology was developed as a way to express levels of decreased biological contamination in water by factors of 10 that could be easily converted to percent reduction. A 1 log reduction is equivalent to a 90 percent reduction. A 2 log reduction is 99 percent reduction and a 3 log reduction is 99.9 percent reduction. A 99.99 percent reduction in biological contaminants (such as viruses) is called a 4 log reduction.

How does the requirement for 4 log removal/inactivation of viruses protect public health? The IEPA has determined that the presence of microbiological pathogens in public water supplies is a health concern. If finished water supplies contain microbiological contaminants, illnesses and disease outbreaks may result.

The Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) sets enforceable drinking water treatment technique requirements to reduce the risk of such disease outbreaks.

- c. Eliminate the source of contamination (remove point sources, relocate pipelines and waste disposal, redirect drainage or run-off, provide or fix existing fencing or housing of the wellhead, etc).
 - d. Provide double-barrier treatment that reliably achieves at least 4 log treatment of viruses (using inactivation, removal, or a state-approved combination of 4 log virus inactivation and removal).
4. Compliance monitoring will be required for groundwater systems that already provide 4 log treatment of viruses. These systems must notify WDNR in writing that they provide at least 4 log treatment of viruses.