Ground Water Rule Factsheet: Sanitary Surveys

What is the Ground Water Rule?

The U.S. Environmental Protection Agency (EPA) published the Ground Water Rule (GWR) on November 8, 2006. One goal of the GWR is to provide increased protection against microbial pathogens, specifically bacterial and viral pathogens, in public water systems (PWSs) that use ground water (or ground water systems (GWSs)). Instead of requiring disinfection for all ground water sources, the GWR establishes a risk-targeted approach to identifying ground water sources that are susceptible to fecal contamination. The GWR requires GWSs with ground water sources at risk of microbial contamination to take corrective action to protect consumers from harmful bacteria and viruses. Sanitary surveys are an important way for states to identify at-risk systems.

What is a Sanitary Survey?

A sanitary survey provides an on-site review of how a GWS is maintained and operated. The survey is conducted by a trained surveyor, who reviews the system's water source, equipment, facilities, and treatment procedures. The purpose of the survey is to:

- Ensure that the GWS' operational, monitoring, reporting, and recordkeeping practices are in compliance with drinking water regulations.
- Identify any significant deficiencies.
- Better ensure that safe drinking water is distributed to the public.

Furthermore, the sanitary survey is a proactive public health measure that allows states to better understand a GWS' progress and needs.

What are the Differences Between the GWR and the Total Coliform Rule?

Total Coliform Rule & Sanitary Surveys

The Total Coliform Rule (TCR) was published on June 29, 1989, by the EPA. Under the TCR, community water systems (CWSs) and non-community water systems (NCWSs) that collect fewer than 5 TCR samples per month were required to receive a sanitary survey every 5 years. NCWSs that use protected and disinfected ground water were only required to receive a sanitary survey once every 10 years. Furthermore, the TCR did not state what elements needed to be evaluated during the sanitary survey.

GWR & Sanitary Surveys

The GWR sanitary survey requirement will increase public health protection by requiring more frequent and complete sanitary surveys. The GWR requires that all community GWSs receive a sanitary survey every 3 years. Non-community GWSs must have a sanitary survey at least every 5 years. If the state determines that a community GWS has outstanding performance or the GWS provides 4-log treatment of viruses, the state can conduct a sanitary survey of the community system every 5 years instead of every 3 years. This provides states with flexibility and gives them the option of reducing their survey workload. For both community and non-community GWSs the sanitary survey must include a review of all eight elements described in this factsheet. All eight elements do not need to be reviewed at the same time, as long as they are reviewed within the 3- or 5- year timeframe specified above.

How Often is a Sanitary Survey Administered for GWSs?

Ground Water System Type	Minimum Frequency of Surveys
Community GWSs	Every 3 years
Community GWSs that the state determines have outstanding performance OR provide 4-log treatment of viruses (i.e., performance criteria)[1]	Every 5 years
Non-community GWSs	Every 5 years

Dates to Keep in Mind

December 31, 2012

This is the last day states have to complete the initial eight element sanitary survey for all community GWSs[2] under the GWR.

December 31, 2014

This is the last day states have to complete the initial eight element sanitary survey for non-community GWSs and for those community GWSs that the state determines have met state performance criteria for outstanding performance or provide 4-log treatment of viruses.[1]

What Elements are Examined During the Survey?

The GWR requires that a sanitary survey include a review of eight elements. The state will identify significant deficiencies found during the survey. The GWS will then need to take corrective action to fix any significant deficiencies found.

Eight Elements of the Sanitary Survey

- *Source*

  Protecting the source prevents contaminants and pathogens from reaching consumers. The state will review information relating to source water quality and wellhead protection. Observations will be made about well construction, potential sources of contamination, setback distances, source quantity and capacity, well locations, source water transmission mains, site security, and general housekeeping.

Possible source significant deficiencies

- Well near source of fecal contamination
- Well in flood zone
- Improperly constructed well
- Spring boxes are poorly constructed and/or subject to flooding

- *Treatment*

  Treatment varies among GWSs based on the quality of the source water and state regulatory requirements. The state will take into consideration design criteria, plant records, and past inspections during the review. The overall design, operation, maintenance, and management of the treatment facility will be examined.

Possible treatment significant deficiencies

- Improper application of treatment chemicals
- Lack of redundant mechanical components where treatment is required
- Unprotected cross-connections with treatment systems
- Inadequate monitoring

1. Performance criteria are established when a community GWS provides a 4-log inactivation/treatment of viruses or has an outstanding performance record document for previous sanitary surveys. Furthermore, a community GWS that has an outstanding performance record cannot have a history of any violations under TCR since its last sanitary survey.
2. Except for those that meet performance criteria.

- *Distribution System*

  Improper upkeep and maintenance of pipes and fixtures comprising the distribution system can compromise the safety of drinking water. Since the infrastructure is typically underground, the state will usually do a paper review of schematics, operation and maintenance records, operating procedures, construction standards, and distribution system water quality data.

Possible distribution system significant deficiencies

- Low or negative pressure that could result in contamination
- Lack of system flushing
- Unprotected cross-connections

- *Finished Water Storage*

  The condition of the storage facility can affect both water quality and water quantity. The state will review the GWS' files; perform field inspections to assess the tank's integrity, operational readiness, site security, and potential sanitary risks; ensure maintenance checks have been completed; and discuss current operation and maintenance (O&M) procedures with staff.

Possible finished water storage significant deficiencies

- Inadequate internal cleaning/maintenance of storage tanks
- Improper screening of overflow pipes, drains, or vents
- Necessary repairs of storage tank roofs or covers

- *Pumps, Pump Facilities, and Controls*

  The purpose of reviewing the pumps is to see if they are in proper working order, are the best fit for their intended use, and to determine their reliability and establish if there are any sanitary risks. The state will obtain information about the pumps, including available data from previous sanitary surveys, the emergency power system (if available), pump tests, and remote monitoring controls and alarms.

Possible pumps, pump facilities, and controls significant deficiencies

- Inadequate pump capacity
- Inadequate maintenance
- Inadequate/inoperable control system

- *Monitoring, Reporting, and Data Verification*

  Verifying the quality of the drinking water distributed to the public ensures that the water complies with drinking water regulations and requirements. The state will determine whether site sampling and monitoring plans are being followed and requirements are being met by checking test results, monthly reports, and daily logs. The surveyor will determine whether the system has complete, up-to-date, and reasonable monitoring data.

Possible monitoring, reporting, and data verification significant deficiencies

- Not monitoring according to site sampling plan or monitoring plan
- Not meeting reporting requirements
- Improper recordkeeping

- *System Management and Operation*

  Proper management can provide a GWS with direction, sufficient funding, and strong support. Reviewing a system's goals, plans, and budgets can give the state a good idea of whether the system's team is working well together or might need some assistance. The state will evaluate whether the GWS is sufficiently staffed and has enough funding for equipment to operate in a sustainable and safe manner.

Possible system management and operation significant deficiencies

- Failure to meet water supply demands
- No approved emergency response plan
- Inadequate follow-up to deficiencies

- *Operator Compliance with State Requirements*
  Operators and staff must be properly trained based on system type, size, and treatment. The state will confirm that operators are properly certified for their roles and responsibilities.

Possible operator compliance with state requirements significant deficiencies

- Operator is not qualified as required by the state
- Lack of operator training

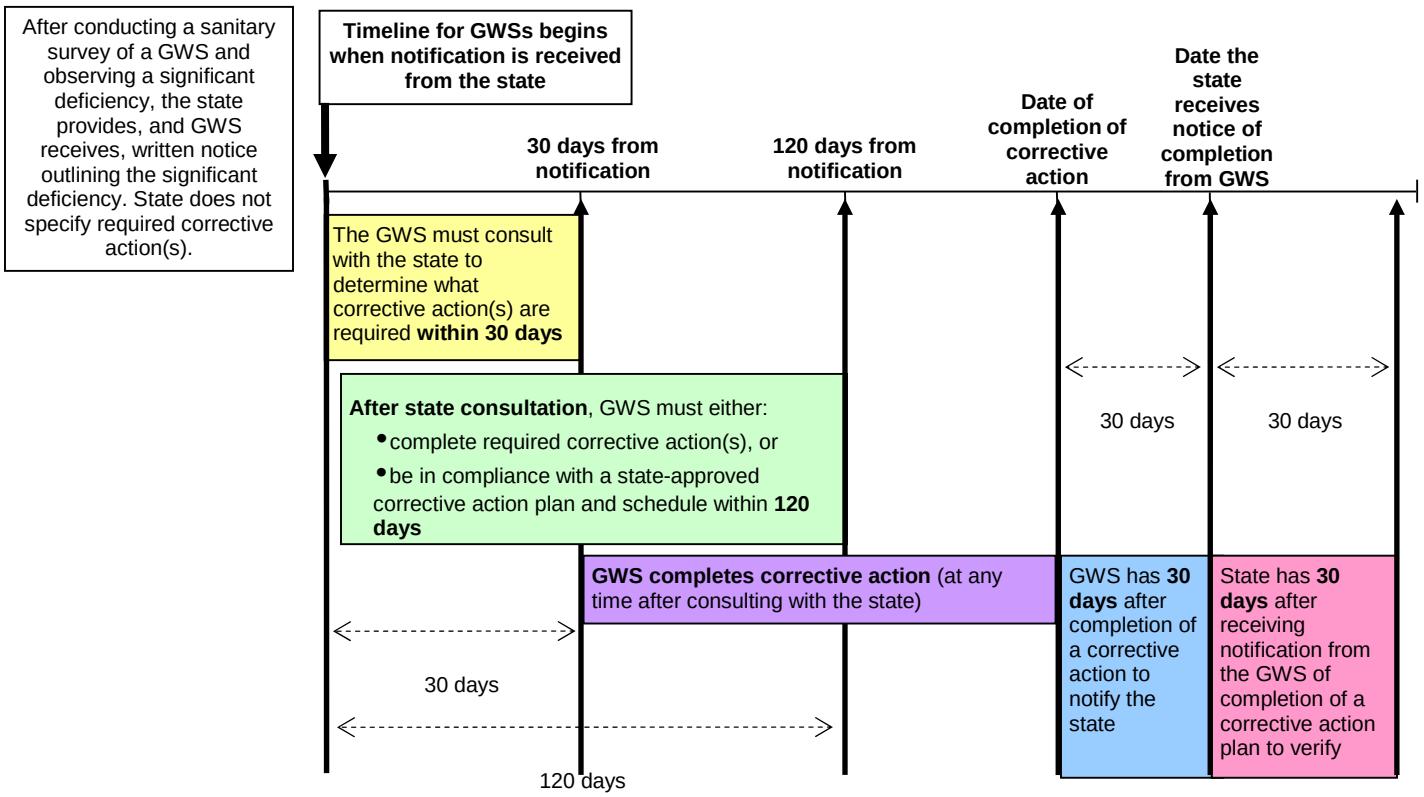
WHAT HAPPENS IF A SIGNIFICANT DEFICIENCY IS IDENTIFIED?

After the sanitary survey has been completed, the state must provide written notification to the GWS no more than 30 days after a significant deficiency has been identified. The state may also specify the corrective action(s) it requires the GWS to complete and may provide deadlines for those actions. If the state does not specify the corrective action(s) required, the GWS has 30 days from receiving written notice from the state to consult with the state regarding appropriate corrective action needed to address the significant deficiency. The GWS has 120 days after the ***initial state notification*** of a significant deficiency to complete the required corrective action or be in compliance with a state-approved corrective action plan and schedule. Failure to comply with the required corrective action plan or schedule will result in a treatment technique (TT) violation for the GWS. The GWS must notify the state within 30 days of completing the required corrective action.

Corrective Action Alternatives

- Correct all significant deficiencies.
- Provide alternative source of water.
- Eliminate the source of contamination.
- Provide 4-log treatment of viruses before first customer.

EXAMPLE TIMELINE



ADDITIONAL GUIDANCE MATERIALS

The following guidance materials for states and PWSs have been released or will be released in 2008:

Ground Water Rule: A Quick Reference Guide – This guide provides a description of the GWR and includes critical deadlines and requirements.

Ground Water Rule Factsheets – Including factsheets on GWR general requirements, monitoring requirements, and Public Notice, Consumer Confidence Reports, and Special Notices.

Sanitary Survey Guidance Manual for Ground Water Systems. October 2008. EPA 815-R-08-016 – This guidance provides states, tribes, and other primacy agencies with a brief review of the sanitary survey regulatory provisions, give examples of what may constitute a significant deficiency, and provide a checklist of elements that should be evaluated during the course of a sanitary survey inspection.

Source Water Assessment Guidance Manual. July 2008. EPA 815-R-07-023 – This guidance provides states, tribes, and other primacy agencies with a brief review of hydrogeologic sensitivity assessments, an overview of the characteristics of a sensitive aquifer, information about how source water assessments may be used, and information about how to determine if a sensitive aquifer has a hydrogeologic barrier.

Ground Water Rule Source Water Monitoring Methods Guidance Manual. July 2007. EPA 815-R-07-019 – This guidance provides GWSs, states, tribes, and other primacy agencies with a brief review of the source water monitoring provisions. Primacy agencies may select fecal indicators (e.g., *E. coli*, enterococci, coliphage) that systems would be required to test for in the ground water source sample. The source water monitoring guidance manual provides criteria to assist primacy agencies in their determination of which fecal indicator(s) may be most appropriate.

Corrective Action Guidance Manual – This guidance will provide states, tribes, other primacy agencies and GWSs with an overview of the treatment technique requirements of the GWR. The guidance manual will provide assistance with determining the information that should be included in a system's corrective action plan.

Consecutive System Guide for the Ground Water Rule. July 2007. EPA 815-R-07-020 – This guidance describes the regulatory requirements of the GWR that apply to wholesale GWSs and the consecutive systems that receive and distribute that ground water supply.

Complying with the Ground Water Rule: Small Entity Compliance Guide: One of the Simple Tools for Effective Performance (STEP) Guide Series. July 2007. EPA 815-R-07-018 – This document is intended to be an official compliance guide to the GWR for small PWSs, as required by the Small Business Regulatory Enforcement Fairness Act of 1996. This guide contains a general introduction and background for the GWR, describes the specific requirements of the GWR and provides information on how to comply with those requirements.

For additional information, please contact the Safe Drinking Water Hotline at 1-800-426-4791, or visit https://www.epa.gov/dwreginfo/ground-water-rule-compliance-help-water-system-owners-and-operators.