Revised Total Coliform Rule

On April 1, 2016, the federal Revised Total Coliform Rule (RTCRR) will replace the 1989 Total Coliform Rule (TCR). The RTCRR will continue to protect public health by enforcing the integrity of the drinking water distribution system and monitoring for the presence of microbial contamination. Like the TCR, the RTCRR is the only drinking water rule that applies to all water systems. EPA expects the RTCRR to better protect public health by requiring systems to be more transparent in microbial contamination to “find and fix” problems that allow contamination to enter a water system.

We always required water systems with microbial contamination to look for any maintenance or operational practices that can allow contamination to enter the system. We also required them to correct defects before the 30-day deadline. The RTCRR makes these changes.

### How we will review your assessment report

We will strive to review assessment reports within two weeks after receipt. Level 2 assessments will receive priority. Assessment reports should cover all the elements identified in our templates, thoroughly discuss any issues found, and identify corrective actions. If the assessment is incomplete, we will return it to you with a request to rework a completed assessment within 30 days. Failure to submit a complete assessment is a treatment technique violation with a Tier 2 public notice requirement.

In addition to reviewing assessment reports for completeness, the RTCRR requires us to answer the following questions:

1. Did the assessment identify the source of contamination?
2. Did the assessment identify a sanitary defect (pathway or failed barrier) for contamination to enter the water system?
3. Did the assessment identify the driving force that brought the contamination into the distribution system?
4. Experience suggests that many assessments won’t identify the likely cause of the coliform incident. Your assessment may not reveal the cause of the contamination, but the learning that occurs during the process should lead to better practices.

### Defining terms

E. coli MCL: The system fails to take any required repeat samples or at the same frequency as they do now. See your Water Facilities Inventory (WFI) form for your monitoring schedule.

Repeat Samples:

The RTCRR requires all water systems to collect three repeat samples for every total coliform-positive routine sample. Systems that collect one sample a month will collect three repeats instead of four. Thus, a system that collects one sample every 30 days will collect three repeats instead of four. If a water system fails to collect three repeat samples for every total coliform-positive repeat sample, the rule will require it to conduct an assessment to find any sanitary defect that allowed the contamination to occur.

### Notification requirements

If you can’t correct a sanitary defect before the 30-day deadline, you must submit an assessment with a Corrective Action Plan to us for review and approval. Your Corrective Action Plan must describe the uncorrected sanitary defect and your timeline for correcting it. Because a sanitary defect or defect still exists, some water systems that don’t disinfect may need to install a disinfection barrier. A sanitary defect may be as simple as a missing reservoir vent screen or as substantial as a failing reservoir.

Defects are issues identified during an assessment that could have negative coliform samples. A defect might be as simple as an improper sampling technique, such as rinsing out a bottle before collecting a sample.

Corrective action for a defect might be as simple as training on correct sampling techniques for the person who collects water samples. RTCRR won’t enforce correction of defects but, if uncorrected, they may trigger additional assessments, or require a system that doesn’t disinfect to begin providing disinfection. See public notification requirements on page 3.

### Assessments and Treatment Technique

For water systems with high repeat samples, the rule requires you to use a Tier 2 public notice requirement.

- A system with two or more repeat samples following an E. coli positive routine sample.
- A system with three repeat samples following an E. coli positive routine sample.

### Comments

If you have questions, contact Linda Waring, Editor, at 360-236-3100 or email H2Ops@doh.wa.gov

The Department of Health Office of Drinking Water publishes the 2016 Drinking Water Yearbook, a guide for public water systems. To order a download a copy, visit the Department of Health website. For more information, contact Linda Waring, Editor, at 360-236-3100 or email H2Ops@doh.wa.gov.

For more information on Tier 2 public notices, visit the RTCRR technical support website.

**Public Notification Requirements**

- Water systems with three repeat samples following an E. coli-positive routine sample.
- Water systems with four or more repeat samples following an E. coli-positive routine sample.
- Water systems with five or more repeat samples following an E. coli-positive routine sample.
- Water systems with six or more repeat samples following an E. coli-positive routine sample.

### Public notice requirements

1. The system fails to take a total coliform-positive repeat sample following an E. coli-positive routine sample.
2. The system fails to take a total coliform-positive repeat sample following an E. coli-positive routine sample.
3. The system fails to take a total coliform-positive repeat sample following an E. coli-positive routine sample.
4. The system fails to take a total coliform-positive repeat sample following an E. coli-positive routine sample.

High 5 Award

We enjoy Mark’s sense of humor but, when it comes to his work, he knows his job is important to public health. We had chronic problems with one system and when we did our audit, we found nitrate in all our systems—in Kittitas, Grant, Chelan, and Okanogan counties. One of these systems had nitrate in Elum. Mark is the certified operator for that area. He is the manager of the Evergreen Valley Utilities that we had. Since he was there, all the problems we had had disappeared.

Seasonal Water Systems

The RTCR recognizes a new type of noncommunity seasonal water system. RTCR’s seasonal water system doesn’t operate year-round, totally depressurizes the water lines at the end of each operating season, and uses nitrogen to prevent freezing. A complete system shut down presents opportunities for contamination to enter or spread throughout the distribution system. Therefore, by April 1, 2016, all seasonal water systems must have a state-approved start-up plan. They must follow the procedures for the first time before opening for the season each year. In addition, they must send us a certificate declaring that they followed the approved start-up procedure before re-opening to the public. You may need to have Mark review the process for you. You can mail him over the phone or he can do it over the phone.

Seasonal Water Systems

Coliform Monitoring Plans

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**High 5 Award**

Mark Nelson, manager of the Evergreen Valley Utilities in Kittitas, Grant, Chelan, Franklin and Okanogan counties.

This month we salute Mark Nelson, manager of the Evergreen Valley Utilities in Kittitas, Grant, Chelan, Franklin and Okanogan counties.

Mark has a “can do” attitude, is attentive to his responsibilities, and never hesitates to ask us for assistance and offer systems—in Kittitas, Grant, Chelan, Franklin and Okanogan counties.

**Seasonal Water Systems**

The RTCR recognizes a new type of noncommunity seasonal water system. RTCR’s seasonal water system doesn’t operate year-round, totally deactivates the water lines at the end of each operating season, and has at least one month when it serves no people.

A complete system shut down presents opportunities for contamination to enter the distribution system. You may specify either:

- Alternative fixed repeat locations.
- A standard operating procedure defining criteria for selecting repeat sites and one case-by-case approach for our review and revisions.

You may choose a combination of these options. You can select Option 1 for some routine sample sites and one of these choices in Option 2 for other.

Month after a Total-Coliform Positive Routine Sample

The RTCR will require you to collect your usual number of routine samples the month after an unsatisfactory repeat sample. Systems that serve 4,000 or fewer people will no longer have to collect five routine samples.

Gravel Creek Rule (GCR)

The GCR requires water systems with one or more groundwater sources to collect a sample from each source. A site within five active connections upstream of the source that was “in use” when an unsatisfactory routine sample was collected.

“Total-Coliform Positive” Routine Sample

A water system that collects fewer than 40 routine samples a month has two or more total-coliform-positive samples in the same month.

A water system that collects 40 or more routine samples has coliform-positive results in more than 5 percent of the routine and repeat samples in the same month.

A water system fails to collect three repeat samples for every total-coliform-positive routine sample.

A water system has a second Level 1 treatment technique trigger within a rolling 12-month period.

A treatment technique trigger could occur any time you collect routine and repeat samples. You should be ready to start a system evaluation as soon as the lab notifies you of positive results that trigger the assessment requirement. We recommend that you sample early in the month, so you can complete the assessment and repeat sampling before you collect samples the following month. We will be available for consultation.

Don’t wait for us to send you written notification of the event. You must complete the assessment within 30 days after the trigger occurs. Start by identifying the individual or entity responsible for doing the assessment and reporting the findings to us. We will review the report assessment to ensure the evaluation was adequate and appropriate for the assessment identified the likely cause of contamination. (In some cases, the assessor won’t find the cause.)

If you have a Level 1 treatment technique trigger in two consecutive months, the RTCR will require you to complete Level 2 assessments the first month and a Level 2 assessment the second month. The worst-case scenario happens when you use E. coli MCL violations triggering at least one annual report.

Template for both assessment levels will be online in January. You may use them or develop your own. If you develop your own, please be sure to include all the required elements.
**High 5 Award**

This month we salute Mark Nelson, manager of the Evergreen Valley Utilities Commission, and a certified operator for the water treatment plant. Mark is the certified operator for a wide array of water systems—including community, noncommunity, farmer housing, and other non-transient community systems. He is diligent, capable, and gets results. He also provides high-quality training to other commission members.

Some of these systems have nitrate or nitrite contamination, both of which can cause problems. With nitrate it’s important to test the water at different times, especially if the water is from a spring that flows through sensitive soil. Mark is very reliable and he does his job well. We are proud to have him as one of our team members.

**Coliform Monitoring Plans**

When a “treatment technique trigger” occurs, water systems must conduct an assessment to find “and fix” any sanitary deficiencies. There are two assessment levels, both evaluate the entire water system from the point of collection to the source of supply. A Level 1 assessment will be conducted if the system is found to have one of these sanitary deficiencies:

- **A water system that collects fewer than 40 routine samples a month has two or more total-coliform-positive samples in the same month.**
- **A water system that collects 40 or more routine samples has coliform-positive results in more than 5 percent of the routine samples.**

By Mark Steward, Eastern Regional Office

Coliform Monitoring Plans

Group A water systems must still have a written Coliform Monitoring Plan (CMP) identifying routine and repeat sample sites and defining procedures for sampling water throughout the distribution system. You may need to update your CMP to include RTCR requirements.

**Options for Selecting Repeat Sample Sites:**

The RTCR requires all water systems to collect three repeat samples for every mandatory routine sample. This is a change for water systems now required to collect four repeat samples a month.

All water systems have two options for choosing repeat sample sites:

Option 1:
- Take a repeat at all the following locations:
  - The site of the unsatisfactory routine sample.
  - A site within five feet active connections upstream of the routine sample site.
  - A site within five feet active connections downstream of the routine sample site.

Option 2:
- You may propose repeat sites that better represent a pathway for contamination to enter the distribution system. You may specify either:
  - Alternative fixed repeat locations.
  - A standard operating procedure defining criteria for selecting repeat sample sites on a case-by-case basis.

You may choose a combination of these options, you can select Option 1 for some routine sites and one of the choices in Option 2 for other routine sites.

**Month after a Total-Coliform-Positive Routine Sample:**

The RTCR will require you to collect your usual number of routine samples the month after an unsatisfactory routine sample. Systems that serve 4,000 or fewer people will no longer have to follow this requirement.

**Groundwater Rule (GWR):**

The GWR requires water systems with one or more groundwater sources to sample from each source. This source was “in use” when an unsatisfactory routine sample was collected. RTCR will not allow any system to use an unsaturated sample as a repeat sample and a groundwater source sample.

**Seasonal Water Systems**

The RTCR recognizes a new type of noncommunity seasonal water system. RTCR’s seasonal water system doesn’t operate year-round, totally deactivates the water lines at the end of each operating season, and has at least one month when it serves no people. A complete system shut down presents opportunities for contamination to enter the system. You may specify either:

- A standard operating procedure defining criteria for selecting repeat sample sites on a case-by-case basis.
- A uniform site of the unsatisfactory routine sample.

**Public Notification Requirements**

- E. coli/MCL violations—issued within 24 hours (Tier 1):
  - Routine total coliform-positive, repeat E. coli-positive.
  - Routine E. coli-positive, repeat total-coliform-positive.
  - Routine E. coli-positive, system not to take all repeat samples.
  - Repeat total-coliform-positive; sample not tested for E. coli.

- Treatment technique triggers—issued within 30 days (Tier 2):
  - System fails to conduct a required assessment within 30 days of the treatment technique trigger.
  - System fails to correct a sanitary defect within required timeframe.

**Seasonal water systems**

- A standard operating procedure defining criteria for selecting repeat sample sites on a case-by-case basis.

- A uniform site of the unsatisfactory routine sample.

- System fails to submit a monitoring report or completed assessment form in a timely manner.

- System fails to notify us of an E. coli-positive sample in a timely manner.

- Seasonal system fails to submit certification of completion of approved start-up procedures.

**Assessments and treatment technique triggers**

When a “treatment technique trigger” occurs, water systems must conduct an assessment to find “and fix” any sanitary deficiencies. There are two assessment levels, both evaluate the entire water system from the point of collection to the source of supply.

- A Level 1 assessment will be conducted if the system is found to have one of these sanitary deficiencies:
- A water system that collects fewer than 40 routine samples a month has two or more total-coliform-positive samples in the same month.
- A water system that collects 40 or more routine samples has coliform-positive results in more than 5 percent of the routine samples.

By Mark Steward, Eastern Regional Office

Seasonal water systems

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2 parts of an assessment

- **Investigation:** Identify any sanitary defects that allowed the distribution system or a failure or imminent failure of an existing barrier. Determine the specific sanitary defects that allowed the contamination to occur.

- **Corrective action:** Record the steps you took to fix the sanitary defect and determine whether the assessor identified the likely cause of the imminent failure of an existing barrier.

- **Record keeping:** Record the steps you took to fix the sanitary defect.

- **Corrective action:** Record the steps you took to fix the sanitary defect.

- **System shut down:** System shut down presents opportunities for contamination to enter the system.

- **Public notification requirements:** E. coli/MCL violations—issued within 24 hours (Tier 1):
  - Routine total coliform-positive, repeat E. coli-positive.
  - Routine E. coli-positive, repeat total-coliform-positive.
  - Routine E. coli-positive, system not to take all repeat samples.
  - Repeat total-coliform-positive; sample not tested for E. coli.

- Treatment technique triggers—issued within 30 days (Tier 2):
  - System fails to conduct a required assessment within 30 days of the treatment technique trigger.
  - System fails to correct a sanitary defect within required timeframe.

- Seasonal water systems

- A standard operating procedure defining criteria for selecting repeat sample sites on a case-by-case basis.

- A uniform site of the unsatisfactory routine sample.

- System fails to submit a monitoring report or completed assessment form in a timely manner.

- System fails to notify us of an E. coli-positive sample in a timely manner.

- Seasonal system fails to submit certification of completion of approved start-up procedures.

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Assessments and treatment technique triggers

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There are four ways a water system can have an E. coli MCL.
1. A total coliform-positive repeat sample follows an E. coli positive routine sample.
2. An E. coli positive repeat sample follows a total coliform-positive routine sample.
3. The facility fails to test a total coliform-positive repeat sample for E. coli.
4. The system fails to take a total coliform-positive repeat sample following an E. coli positive routine sample.

For people with disabilities, this document is available in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).
Your Corrective Action Plan should include any proactive action you intend to take to correct defects and prevent defects and your timeline for correcting it. Because a sanitary defect or defects may not reveal the cause of the contamination, but the learning that occurs during the process should lead to better operation.

Sanitary defect is a pathway for contaminants to enter the water system or failure or imminent failure of an existing barrier. A sanitary defect may be as simple as a missing reservoir vent screen or a poorly sealed reservoir hatch, or as substantial as a failing reservoir.

Corrective action for a sanitary defect could be as simple as installing a new screen on a reservoir vent or replacing the seal on a reservoir hatch, or as substantial as building a new water tank or installing new water pipe.

Defects are issues identified during an assessment that could have caused positive coliform samples. A defect might be as simple as an improper sampling technique, such as rimming out a bottle before collecting a sample.

Corrective action for a defect might be as simple as training on correct sampling techniques for the person who collects water samples. RTCR won’t enforce correction of defects but, if uncorrected, they may trigger additional assessments, or require a system that doesn’t disclose to begin providing disinfection.

If you can’t correct a sanitary defect before the 30-day deadline, you must submit an assessment with a Corrective Action Plan to us for review and approval. Your Corrective Action Plan must describe the corrected sanitary defect and your timeline for correcting it. Because a sanitary defect or defect will exist, some water systems that don’t disclose may need to install a disinfection as an interim corrective measure.

Your Corrective Action Plan should include any proactive action you intend to take to correct defects and prevent positive coliform samples in the future. For example, it isn’t strong to say you repaired the water main break that contaminated the water system. Instead, you must summarize the procedures you or your staff followed to repair the break and the procedures you will use to decrease future risk of contamination.

How we will review your assessment report

We will strive to review assessment reports within two weeks after receipt. Level 2 assessments will receive priority. RTCR distinguishes between “sanitary defects” and “defects.” Either might result in a positive coliform sample that deserves recognition.

By nominating an operator or system for the Revised Total Coliform Rule (RTCR) formalizes this process and requires water systems to identify the driving force that brought the contamination into the distribution system.

The informal comment period for the Revised Total Coliform Rule (RTCR) will begin on November 19 until December 18, 2015. Comments submitted during the informal comment period will be considered for inclusion in the final rule. Comments received after December 18, 2015 will be noted, but not included in the final rule. Please visit http://www.doh.wa.gov/H2Ops

The informal comment period

The deadline is January 29, 2016.