The Revised Total Coliform Rule (RTCR) State Implementation Guidance—Final

Office of Water (4606M)
EPA 816-R-20-003
June 2020

Disclaimer

This document provides guidance to states, tribes and the U.S. Environmental Protection Agency (EPA) exercising primary enforcement responsibility under the Safe Drinking Water Act (SDWA) and contains EPA's current policy recommendations for complying with the Revised Total Coliform Rule (RTCR). Throughout this document, the terms "state" and "states" are used to refer to all types of primacy agencies including states, U.S. territories, Indian tribes and EPA.

The statutory provisions and EPA regulations described in this document contain legally binding requirements. This document is not a regulation itself, nor does it change or substitute for those provisions and regulations. Thus, it does not impose legally binding requirements on EPA, states or the regulated community. This guidance does not confer legal rights or impose legal obligations upon any member of the public.

While EPA has made every effort to ensure the accuracy of the discussion in this guidance, the obligations of the regulated community are determined by statutes, regulations or other legally binding requirements. In the event of a conflict between the discussion in this document and any statute or regulation, this document would not be controlling.

The general description provided here may not apply to a particular situation based upon the circumstances. Interested parties are free to raise questions and objections about the substance of this guidance and the appropriateness of the application of this guidance to a particular situation. EPA and other decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from those described in this guidance, where appropriate.

Mention of trade names or commercial products does not constitute endorsement or recommendation for their use.

This is a living document and may be revised periodically without public notice. EPA welcomes public input on this document at any time. Guidance provided in this document reflects provisions published on February 13, 2013, at 78 *Federal Register* 10269 and the minor corrections published on February 26, 2014, at 79 *Federal Register* 10665.

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Acronyms and Abbreviations

AIP	Agreement in Principle
AO	Administrative Order
BAT	Best Available Technology
CCR	Consumer Confidence Report
CFR	Code of Federal Regulations
CWS	Community Water System
EC	*E. coli*
EC+	*E. coli*-positive
EPA	U.S. Environmental Protection Agency
FR	*Federal Register*
GWR	Ground Water Rule
GWUDI	Ground Water Under the Direct Influence of Surface Water
HQ	EPA Headquarers
ICC	Interstate Carrier Conveyances
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
mL	Milliliter
NCWS	Non-community Water System
NOV	Notice of Violation
NPDWR	National Primary Drinking Water Regulation
NTNCWS	Non-transient Non-community Water System
NTU	Nephelometric Turbidity Unit
OGC	Office of General Counsel
OGWDW	Office of Ground Water and Drinking Water
ORC	Office of Regional Counsel
PN	Public Notification
PWS	Public Water System
PWSS	Public Water System Supervision
RPZ	Reduced Pressure Zone
RTCR	Revised Total Coliform Rule
Q&A	Question and Answer
SCADA	Supervisory Control and Data Acquisition
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SOP	Standard Operating Procedure
TC+	Total Coliform-positive
TCR	Total Coliform Rule
TCRDSAC	Total Coliform Rule/Distribution System Advisory Committee
TNCWS	Transient Non-community Water System
TT	Treatment Technique
TT-triggers	Treatment Technique Triggers
UV	Ultraviolet

References

Establishment of the Total Coliform Rule Distribution System Advisory Committee and Meeting of the Total Coliform Rule Distribution System Advisory Committee; Notices. 72 FR 35869. June 29, 2007.

Federal Advisory Committee Act, 5 U.S.C. App. 2.

National Primary Drinking Water Regulations: Announcement of Completion of EPA's Review of Existing Drinking Water Standards. 68 FR 42908. July 18, 2003.

National Primary Drinking Water Regulations: Revisions to the Total Coliform Rule; Final Rule. 78 FR 10269. February 13, 2013.

National Primary Drinking Water Regulations: Minor Corrections to the Revisions to the Total Coliform Rule. 79 FR 10665. February 26, 2014.

Revised Total Coliform Rule Assessments and Corrective Actions Guidance Manual Interim Final. EPA 815-R-14-006. September 2014. Available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-assessments-and-corrective-actions.

Revisions to State Primacy Requirements to Implement Safe Drinking Water Act Amendments. 63 FR 23361. April 28, 1998.

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Total Coliform Rule / Distribution System (TCRDS) Federal Advisory Committee; *Agreement in Principle*. September 18, 2008. Available at: https://www.epa.gov/sites/production/files/2015-10/documents/total_coliform_rule_distribution_system_advisory_committee_agreement_in_principle_pdf.pdf.

Document Guide

This document provides guidance to states, tribes and U.S. Environmental Protection Agency (EPA) regional offices exercising primary enforcement responsibility under the Safe Drinking Water Act (SDWA) concerning how EPA interprets the Revised Total Coliform Rule (RTCR or the Rule) promulgated by EPA under the SDWA. It also provides guidance to the public and the regulated community on how EPA intends to exercise its discretion in implementing the statute and regulations. This guidance is designed to inform national policy on these issues. Throughout this document, the terms "state" and "states" are used to refer to all types of primacy agencies including states, U.S. territories, Indian tribes and EPA.

The SDWA provisions and EPA regulations described in this document contain legally binding requirements. This document does not substitute for those requirements, nor is it a regulation itself. It does not impose legally binding requirements on EPA, states or the regulated community and may not apply to a particular situation based upon the circumstances. EPA and state decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance, where appropriate. Any decisions regarding a particular facility will be made based on the applicable statutes and regulations. Therefore, interested parties are free to raise questions and objections about the appropriateness of the application of this guidance to a particular situation. EPA will then consider whether or not the recommendations or interpretations in the guidance are appropriate in that situation based on the law and regulations. EPA may change this guidance in the future.

Note that, in several sections, the guidance makes suggestions and offers alternatives that go beyond the minimum requirements indicated in the Rule. EPA does this to provide information and/or suggestions that may be helpful to implementation efforts. Such suggestions are prefaced by "may" or "should" and are to be considered advisory in nature. They are not required or mandatory elements of the RTCR.

This guidance manual contains the following sections:

- **Section 1** summarizes the applicability of the RTCR and presents a timetable of important dates.
- **Section 2** describes the monitoring requirements of the RTCR, including routine, repeat, reduced, increased and additional routine monitoring, as well as special monitoring evaluations and triggered and additional source water monitoring under the Ground Water Rule (GWR).
- **Section 3** explains the RTCR treatment technique triggers (TT-triggers) and assessment requirements.
- **Section 4** discusses RTCR reporting and recordkeeping requirements for public water systems (PWSs) and states.
- **Section 5** explains violations under the RTCR.
- **Section 6** describes public notification (PN) and Consumer Confidence Report (CCR) requirements related to the RTCR.
- **Section 7** covers state implementation activities and state primacy revision requirements, including a detailed timeframe for primacy application review and approval. This section also contains guidance and references to help states adopt each new special primacy requirement included in the RTCR.

- **Section 8** lists the "stand-alone" guidance materials that will help states and PWSs adopt each new requirement. Also, this section provides examples of PN and CCR scenarios and Questions and Answers (Q&A) about the RTCR.

The appendices of this document also provide information that will be useful to states and EPA throughout the primacy revision application process.

- **Appendix A** contains the primacy revision application crosswalk for the RTCR.
- **Appendix B** presents flowcharts to help states and PWSs implement the RTCR.
- **Appendix C** contains a stand-alone version of the example forms and letters, checklists and tables.
- **Appendix D** provides the definitions or explanations for terms typically used by states, tribes and EPA that have primary enforcement responsibility under the SDWA to implement the RTCR.
- **Appendix E** includes a collection of field scenarios for varying system types that detail an event (e.g., repeat sample not taken), and provides the applicable violations, corrective actions and assessments that the system may be required to perform under the RTCR.
- **Appendix F** contains a description of the RTCR workload activities, which a state primacy agency and EPA can use to specify roles and responsibilities in the event that a state requests a primacy extension for the RTCR.
- **Appendix G** provides the link to the EPA website where the reader can download a copy of the final RTCR that was published in the *Federal Register* (FR) on February 13, 2013 and codified in 40 Code of Federal Regulations (CFR) Part 141 and 142, and a copy of the minor corrections that were published on February 26, 2014 and became effective on April 28, 2014.

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Section 1

Introduction to the Revised Total Coliform Rule

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1.1 Executive Summary

The U.S. Environmental Protection Agency (EPA) published the Revised Total Coliform Rule (RTCR) in the *Federal Register* (FR) on February 13, 2013 (78 FR 10269) and minor corrections on February 26, 2014 (79 FR 10665). The *Federal Register* notices are available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule.

The RTCR aims to increase public health protection through the reduction of potential pathways of entry for fecal contamination into the distribution system of community water systems (CWSs) and non-community water systems (NCWSs) (i.e., non-transient non-community water systems [NTNCWSs] and transient non-community water systems [TNCWSs]). The RTCR applies to all public water systems (PWSs), except aircraft PWSs subject to the Aircraft Drinking Water Rule (ADWR) (40 CFR 141 Subpart X).

Key provisions of the RTCR include:

- Setting a maximum contaminant level goal (MCLG) and maximum contaminant level (MCL) for *E. coli* for protection against potential fecal contamination.
- Setting a total coliform treatment technique (TT) requirement.
- Requirements for monitoring total coliforms and *E. coli* according to a sample siting plan and schedule specific to the PWS.
- Provisions allowing PWSs to transition to the RTCR using their existing Total Coliform Rule (TCR) monitoring frequency, including PWSs on reduced monitoring under the existing TCR.
- Requirements for seasonal systems (i.e., NCWSs not operated on a year-round basis that start up and shut down at the beginning and end of each operating season) to monitor and certify the completion of a state-approved start-up procedures.
- Requirements for assessments and corrective action when monitoring results show that PWSs may be vulnerable to contamination.
- Public notification (PN) requirements for violations.
- Specific language for CWSs to include in their Consumer Confidence Reports (CCRs) when they must conduct an assessment or if they incur an *E. coli* MCL violation.

The RTCR upholds the purpose of the 1989 TCR to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbial contamination. The RTCR, as with the TCR, is the only microbial drinking water regulation that applies to all PWSs. EPA anticipates greater public health protection under the RTCR, as it requires PWSs that are vulnerable to microbial contamination to identify and fix problems, and it establishes criteria necessary for PWSs to qualify for and stay on reduced monitoring, thereby providing incentives for improved water system operation. The regulated entities potentially affected by the RTCR include approximately 155,000 PWSs that serve approximately 310 million individuals.

The RTCR establishes both an MCL and MCLG for *E. coli*, because *E. coli* is a more specific indicator of fecal contamination, and is a potentially more harmful pathogen than other bacteria typically found in the total coliform group. The RTCR uses *E. coli* as an indicator of fecal contamination, rather than fecal coliforms, because the fecal coliform assay is imprecise and can capture environmental bacteria that do not originate in the human or mammal gut. Under the RTCR, PWSs must meet a legal limit (i.e., MCL)

for *E. coli*, as demonstrated by required monitoring. The RTCR specifies the frequency and timing of required microbial testing based on population served, PWS type (i.e., CWS or NCWS) and source water type (i.e., ground water or surface water).

EPA also replaces the MCLG and MCL for total coliforms in the TCR with a TT requirement for total coliforms in the RTCR. Under this TT requirement, total coliforms serve as an indicator of a potential pathway of contamination into the distribution system. A PWS that exceeds a specified number of total coliform-positive (TC+) sample occurrences or incurs an *E. coli* MCL violation must conduct an assessment to determine if any sanitary defects[1] exist. The PWS must correct any sanitary defects within a specified timeframe.

In some instances, the RTCR links monitoring frequency to previous compliance monitoring results and water system performance. For instance, the RTCR:

- Allows small ground water-only systems serving 1,000 or fewer people to meet certain stated criteria to qualify for, and stay on, reduced monitoring.
- Requires increased monitoring for high-risk water systems with unacceptable compliance histories.
- Includes new monitoring requirements for seasonal NCWSs (e.g., state and national parks, campgrounds, resorts).

The RTCR eliminates the PN requirements included in the 1989 TCR that were based solely on the presence of total coliforms in the distribution system, since total coliforms by themselves do not necessarily indicate a public health threat. Instead, the RTCR requires PN when an *E. coli* MCL violation occurs, indicating a potential health threat; when a PWS fails to conduct a required assessment or corrective action; when other potential health threats are present; and when a PWS fails to implement certain other rule provisions.

The RTCR requirements to perform assessments and take corrective actions are more stringent than those in the TCR, which did not require any action beyond public notice. EPA believes that these provisions of the RTCR will improve public health protection by providing incentives for improved operation.

For additional information on the RTCR, refer to: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule.

1.2 Development of the RTCR

The Safe Drinking Water Act (SDWA) requires EPA to review and revise, as appropriate, each existing National Primary Drinking Water Regulation (NPDWR) at least once every six years [SDWA Section 1412(b)(9), 42 U.S.C. 300g–1(b)(9)]. In 2003, EPA completed its review of the TCR and 68 chemical NPDWRs that were promulgated prior to 1997. The purpose of the review was to identify new health risk assessments and changes in technology or other factors that would support a regulatory revision that would maintain or improve public health protection. In the Six-Year Review 1 determination published in July 2003 (*National Primary Drinking Water Regulations: Announcement of Completion of EPA's Review of Existing Drinking Water Standards*. 68 FR 42908. July 18, 2003), EPA stated its intent to revise the 1989 TCR. One of EPA's goals in developing the RTCR was to strengthen the objectives of the

[1] The RTCR defines a sanitary defect as, "a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure of a barrier that is already in place" [40 CFR 141.2].

existing TCR, including evaluating the effectiveness of treatment, determining the integrity of the distribution system and indicating the possible presence of fecal contamination.

In June 2007, EPA established the Total Coliform Rule/Distribution System Advisory Committee (TCRDSAC or "the advisory committee"), in accordance with the provisions of the Federal Advisory Committee Act [5 U.S.C. App. 2, 9(c)]. The TCRDSAC was tasked with providing recommendations to EPA on proposed revisions to the 1989 TCR, and determining what information was needed to better understand and address possible public health impacts from potential degradation of drinking water distribution systems (72 *FR* 35869, June 29, 2007).

The advisory committee consisted of representatives of state and local public health and regulatory agencies, consumer organizations, environmental organizations, local elected officials, Indian tribes, drinking water suppliers and EPA. A technical workgroup was also formed to provide the advisory committee with necessary technical support and analysis, and to facilitate the committee's discussions. The advisory committee met on 13 occasions between July 2007 and September 2008, and at the end of their discussions and deliberations, the advisory committee members agreed to a set of recommendations and signed a final Agreement in Principle (AIP). All of the recommendations of the advisory committee are found in the signed AIP, which can be found on EPA's RTCR website: https://www.epa.gov/dwreginfo/total-coliform-rule-distribution-system-advisory-committee-agreement-principle.

In addition, EPA held a series of stakeholder meetings to provide draft proposed regulation updates and an opportunity for stakeholders to provide feedback on the development of the RTCR. EPA also engaged in several other activities as part of EPA's outreach to stakeholders when developing the RTCR, including a technical workshop in Washington, D.C., from January 30 to February 1, 2007. Workshop participants discussed available information on the 1989 TCR and the risks to distribution systems in support of revisions to the TCR. EPA also engaged in other outreach activities via consultation with the National Drinking Water Advisory Council and Science Advisory Board. Summaries of these meetings can be found on EPA's website: https://www.epa.gov/ndwac/meeting-summary-documents-ndwac.

1.3 Applicability of the RTCR

This section provides a brief summary of the RTCR requirements published in the *Federal Register* on February 13, 2013 (78 FR 10269) and minor corrections on February 26, 2014 (79 FR 10665). The *Federal Register* notice is available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule.

1.3.1 To Whom Does the Rule Apply?

The RTCR applies to all PWSs, except for those excluded from regulation by Section 1411 of the SDWA (42 U.S.C. 300g) and those subject to the Aircraft Drinking Water Rule (40 CFR 141, Subpart X). SDWA Section 1411 excludes PWSs that receive all of their water from another regulated system; do not collect, sell or treat the water; and are not interstate carrier conveyances (ICCs) including aircrafts, trains, buses and water vessels. The ADWR applies to aircraft that are PWSs and that board only finished water for human consumption [40 CFR 141.800(a)]; ADWR implementation and enforcement is conducted by the EPA Regions.

Note that throughout the remainder of this document, whenever the term "all PWSs" is used, the phrase does not include those excluded systems described above.

1.3.2 Changes to Other Drinking Water Regulations

The *Federal Register* notice published on February 13, 2013 (78 FR 10269) included the RTCR (codified at 40 CFR 141, Subpart Y), but also included minor revisions to other existing drinking water regulations to conform them to the new RTCR. These revisions to 40 CFR Part 141 include:

- Subpart A – General
  - Definitions [40 CFR 141.2]: Adds definitions for clean compliance history, Level 1 assessment, Level 2 assessment, sanitary defect and seasonal systems.
  - Variances and Exemptions [40 CFR 141.4]: Revised to address change from a total coliform MCL under the TCR to an *E. coli* MCL under the RTCR.
- Subpart C – Monitoring and Analytical Requirements
  - Coliform Sampling [40 CFR 141.21]: Specifies the transition to RTCR (40 CFR 141, Subpart Y) beginning April 1, 2016.
- Subpart F – Maximum Contaminant Level Goals and Maximum Residual Disinfectant Level Goals
  - MCLGs for Microbiological Contaminants [40 CFR 141.52]: Adds MCLG for *E. coli*.
- Subpart G – National Primary Drinking Water Regulations: Maximum Contaminant Levels and Maximum Residual Disinfectant Levels
  - MCLs for Microbiological Contaminants [40 CFR 141.63]: Revised to address change from a total coliform MCL under the TCR until March 31, 2016, to an *E. coli* MCL under the RTCR beginning April 1, 2016.
  - Best Available Technology (BAT) [40 CFR 141.63(e)]: Modified best technology, treatment techniques, or other means available for achieving compliance with the MCL for *E. coli* under the RTCR.
- Subpart H – Filtration and Disinfection
  - Criteria for Avoiding Filtration [40 CFR 141.71]: Requires PWSs avoiding filtration to comply with the MCL for *E. coli* in 11 of the 12 previous months that the PWS served water to the public.
  - Analytical and Monitoring Requirements [40 CFR 141.74]: Updates the requirements for residual disinfectant concentration monitoring required for Subpart H PWSs by linking these requirements to PWSs monitoring under the RTCR.
- Subpart L – Disinfectant Residuals, Disinfection Byproducts, and Disinfection Byproduct Precursors
  - Monitoring Requirements [40 CFR 141.132]: Beginning April 1, 2016, PWSs that use chlorine or chloramines must measure the residual disinfectant level in the distribution system at the same point and at the same time as total coliforms are sampled under the RTCR.

- Subpart O – Consumer Confidence Reports
  - Content of the Reports [40 CFR 141.153]: Adds CCR content for Level 1 and 2 assessments and *E. coli* MCL exceedances.
- Subpart Q – Public Notification of Drinking Water Violations
  - Form, Manner, and Frequency of Notice [40 CFR 141.202 – 40 CFR 141.204]: Updates the PN requirements to include references to 40 CFR 141, Subpart Y.
  - Updates to Public Notice (Appendix A): Updates the violations requiring PN.
- Subpart S – Ground Water Rule
  - Ground Water Source Microbial Monitoring and Analytical Methods [40 CFR 141.402]: Updates references to 40 CFR 141, Subpart Y for PWSs conducting triggered source water monitoring.
  - Ground Water Source Microbial Monitoring and Analytical Methods [40 CFR 141.402(a)(2)(iv)]: Adds a requirement allowing states to approve the use of a single sample to meet the requirements of RTCR repeat monitoring and Ground Water Rule (GWR) triggered source water monitoring in ground water systems serving 1,000 or fewer people. [40 CFR 141.853(a)(5)(ii)]: Clarifies that only ground water systems with a single well, with written state approval, may be eligible for dual RTCR repeat monitoring and GWR triggered source water monitoring.
  - Reporting and Recordkeeping for Ground Water Systems [40 CFR 141.405(b)(4)]: For a period of not less than five years, consecutive ground water systems must maintain documentation of notification to the wholesale PWSs, of TC+ samples that are not invalidated under the RTCR.
- Subpart X – Aircraft Drinking Water Rule
  - Coliform Sampling [40 CFR 141.803]: Updates the analytical method reference for air carriers under the Aircraft Drinking Water Rule.

1.3.3 Applicability and Compliance Dates

The RTCR addresses fecal contamination in all PWSs, however, see Section 1.3.1 for applicability exclusions. The Rule applies to both CWSs and NCWSs, regardless of population served.

PWSs must have complied with the requirements of the rule starting April 1, 2016. The state must perform a special monitoring evaluation of ground water systems serving 1,000 or fewer people during each sanitary survey, to determine whether the PWS is on an appropriate monitoring schedule.

New provisions that took effect April 1, 2016, include:

- Monitoring for total coliforms and *E. coli* by all PWSs according to a written sample siting plan. This plan ensures samples are collected at locations representative of the entire distribution system. The sample siting plan is subject to state review and revision.
- Assessments and corrective actions if the PWS identifies a vulnerability to coliform contamination.

- *E. coli* MCL violations (i.e., replaces TCR's acute MCL).
- Total coliform TT requirements (i.e., the conditions for the TCR monthly MCL violation are now triggers for a Level 1 assessment).
- PN requirements for *E. coli* MCL violations.
- Specific CCR language for PWSs conducting an assessment or incurring an *E. coli* MCL violation.

Figure B-1 in Appendix B is a flowchart depicting the general requirements of the RTCR for all PWSs.

Table 1-1 summarizes key compliance dates required (bold) by the RTCR as well as suggested action dates (shaded).

Table 1-1. Summary of Action Dates for the RTCR

Key Dates of Rule	RTCR Requirements
February 13, 2013	**RTCR promulgated and published in Federal Register.**
April 15, 2013	**RTCR effective date.**
August, 2014	States are encouraged to submit draft primacy applications or extension requests to EPA.[1]
Before February 13, 2015	**For states requesting an extension, RTCR primacy revision application extension requests must be submitted to the EPA Regional Administrator.** [2]
By February 13, 2015	**Final primacy revision applications for the RTCR must be submitted to the EPA Regional Administrator for states that do not apply for an extension.**
Beginning April 1, 2016	**PWSs must comply with the RTCR requirements unless states with primacy adopt an earlier implementation date.**
August, 2016	States with approved extension agreements are encouraged to submit draft primacy applications to EPA.
No later than February 13, 2017	**Final primacy applications must be submitted to the EPA Regional Administrator for states with a full two-year extension.**

1. EPA encourages the state to submit the primacy application or extension requests to the EPA Regional Administrator and the appropriate Regional Drinking Water Program Office to minimize delay of review.
2. EPA strongly recommends that a state submit a DRAFT application (including draft regulations and/or statutes), so that any regulations or laws that are less stringent than the federal regulations can be found early in the process and revised. Review of the draft will allow the state to avoid having to re-do its regulatory process to correct stringency errors found in review of the adopted state regulations submitted with the FINAL program revision package. The DRAFT application should have been submitted no later than August 2014 or far enough in advance to ensure that EPA can review, and the state can make changes to, draft regulations or statues.

For more information:

The *Federal Register* notices for the Final Rule and minor corrections are available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule.

1.3.4 Transition to RTCR [40 CFR 141.854(c) and 40 CFR 141.855(c)]

After the RTCR compliance effective date of April 1, 2016, a PWS must continue to monitor according to its TCR monitoring schedule that was in effect under the TCR on March 31, 2016, unless the state determines that the PWS meets the requirements for conducting RTCR increased monitoring on or after April 1, 2016. For PWSs serving 1,000 or fewer people and only using ground water as a source, the state

must conduct a special monitoring evaluation during each water system's sanitary survey to determine whether the monitoring schedules for these PWSs are appropriate. For seasonal NCWSs serving 1,000 or fewer people that use only ground water and are on quarterly or annual monitoring, the special monitoring evaluation must include a review of the sample siting plan. These systems' sample siting plans must designate the time period(s) for monitoring based on-site-specific conditions, such as periods of high demand or high vulnerability to contamination. Note that the state should review sample siting plans for all PWSs.

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Section 2

RTCR Monitoring Requirements

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2.1 General RTCR Monitoring Requirements

Under the RTCR, PWSs must continue to monitor according to a frequency specific to the PWS and a sample siting plan that is subject to state review. As with the TCR, the monitoring frequency (i.e., routine monitoring frequency and whether the PWS is eligible for reduced monitoring) is based on the PWS's source water type and population served. Also similar to the TCR, there are additional monitoring requirements that PWSs may need to comply with (e.g., additional routine or repeat monitoring) based on monitoring results received.

The RTCR now subjects ground water systems serving 1,000 or fewer people to new provisions for increased monitoring and new criteria to be eligible for reduced monitoring. The RTCR also specifies when the states may permit the use of repeat RTCR samples for triggered source water monitoring and additional source water sampling under the GWR. The following requirements are discussed in this section:

- Routine monitoring;
- Repeat monitoring;
- Special monitoring evaluations;
- Reduced monitoring;
- Increased monitoring;
- Additional routine monitoring; and
- Triggered source water monitoring and additional source water sampling.

PWSs must have complied with the provisions of the RTCR no later than April 1, 2016.[2] Systems must collect RTCR samples according to their written sample siting plan, which identifies the schedule for sampling and the location of the routine, repeat and additional routine sampling sites that are representative of the distribution system. For ground water systems, the sample siting plan must also include any sampling points for triggered source monitoring and additional source monitoring required by the GWR.

More information on sample siting plans is provided in Section 2.2.

For ground water systems serving 1,000 or fewer people, the state must perform a special monitoring evaluation to review the status of the PWS, including the distribution system, during each water system's sanitary survey to determine whether the PWS is on the appropriate monitoring schedule. Guidance on performing the special monitoring evaluation is provided in Sections 2.4.3, 2.5.3 and 2.8.3.

PWSs that collect more than one sample per month must collect samples at regular intervals throughout the month. Ground water systems serving 1,001 to 4,900 people may collect all required samples on a single day if they are taken from different sites. Treatment technique triggers (TT-triggers) are calculated upon notification of sample results within a month. If any TT-trigger is exceeded, the PWS must complete a Level 1 or Level 2 assessment, depending on the circumstances. See Section 3 for a list of TT-triggers and additional information on assessments.

A PWS may collect more samples than required, to investigate potential problems in the distribution system and to help identify the cause of a problem. The state may not allow special purpose samples or general investigative samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement or repair, to be used in calculating the coliform TT-

[2] States that have obtained interim primacy or full primacy for the RTCR may have begun implementing and enforcing the RTCR requirements (if allowed under state regulations) prior to the RTCR's April 1, 2016, compliance effective date.

trigger. However, the PWS may take additional compliance samples to be used in calculating compliance and triggers if they are identified as such and are taken in accordance with the sample siting plan. Repeat samples are not considered special purpose samples, and, therefore, must be used to determine whether the coliform TT-trigger has been exceeded.

All TC+ samples must be tested for *E. coli*. The state has the discretion to allow a PWS, on a case-by-case basis, to forgo *E. coli* testing on a TC+ sample if the PWS assumes that the TC+ sample is *E. coli*-positive (*EC+*). The PWS must notify the state by the end of the day after the PWS is notified of the positive result, unless the PWS is notified after the state office is closed and the state does not have an alternative notification procedure (e.g., an emergency hotline or online notification system). In this case, the PWS must notify the state by the end of the next business day. The TC+ sample (and presumed *EC+* result) must still be included in the determination of the TT-trigger and compliance with the MCL.

A state-approved/certified lab may provide this information directly to the state.

Monitoring requirements may differ based on the category of water system, as explained in Table 2-1.

Table 2-1. RTCR Requirements That Apply To Different Categories of PWSs

PWS Category	RTCR Requirement
All PWSs	• Prepare sample siting plan. • Monitor according to state-approved sampling plan. • Conduct repeat monitoring for any TC+ sample. • Every sample must be analyzed for total coliform bacteria and, if TC+, the sample must be analyzed for *E. coli* bacteria. • Conduct either a Level 1 or Level 2 assessment when TT-trigger is exceeded and complete corrective actions to address identified sanitary defects.
NCWSs serving 1,000 or fewer people and using only ground water	• Conduct routine quarterly monitoring, collecting a minimum of one sample per quarter, reduced monitoring is no less frequent than annually, and increased monitoring could be either monthly or quarterly. • NCWSs on a reduced monitoring schedule must increase the frequency of monitoring the month following any event, as described in 40 CFR 141.854(f) (discussed in Section 2.4.5 of this guidance). • NCWSs on annual monitoring must participate in recurring annual site visits by the state or an annual voluntary Level 2 assessment to remain on annual monitoring. • NCWSs on quarterly or annual monitoring must conduct additional routine monitoring the month following one or more TC+ samples (with or without a Level 1 TT-trigger). • The state must conduct a special monitoring evaluation during each sanitary survey to review the status of the NCWS (including its distribution system), and determine whether the system is on an appropriate monitoring schedule.
CWSs serving 1,000 or fewer people and using only ground water	• Conduct routine monthly monitoring, collecting a minimum of one sample per month, reduced monitoring is no less frequent than quarterly, and increased monitoring for those systems monitoring quarterly is monthly. • The state must conduct a special monitoring evaluation during each sanitary survey to review the status of the CWS (including its distribution system), and determine whether the system is on an appropriate monitoring schedule. • CWSs on quarterly monitoring must conduct additional routine monitoring the month following one or more TC+ samples (with or without a Level 1 TT-trigger). • CWSs on quarterly monitoring must be in compliance with certified operator requirements and must increase to monthly monitoring the month after the system loses its certified operator.
Filtered Subpart H systems serving 1,000 or fewer people	• Conduct routine monthly monitoring. PWSs must collect a minimum of one sample per month.

PWS Category	RTCR Requirement
Unfiltered Subpart H systems	• Conduct routine monthly monitoring. PWSs must collect a minimum of one sample per month. • Conduct total coliform monitoring each day the source water exceeds one Nephelometric Turbidity Unit (NTU).[1]
Seasonal systems	• Conduct routine monthly monitoring, except for seasonal NCWSs serving 1,000 or fewer people that use only ground water and meet the criteria stated in 40 CFR 141.854(i) (discussed in Section 2.8 of this guidance). • Demonstrate completion of a state-approved start-up procedure. • Seasonal systems on annual monitoring must participate in a recurring annual site visit by the state or an annual voluntary Level 2 assessment to remain on annual monitoring. • The state may exempt any seasonal system from some or all of the start-up requirements, if the entire distribution system remains pressurized during the entire period that the system is not operating.
PWSs serving more than 1,000 people	• Conduct routine monthly monitoring. PWSs must collect a minimum number of samples based on the population served (see Table 2-2). PWSs must collect samples at regular intervals throughout the month. • Ground water systems serving 1,001 to 4,900 people may collect all required samples on a single day if they are taken from different sites.

1. See Sections 2.6.1 and 2.7.1 for more information on the requirements to collect total coliform samples when turbidity measurements exceed 1 NTU.

Table 2-2 shows the minimum number of required samples for PWSs serving more than 1,000 people by population served.

Table 2-2. Minimum Number of Total Coliform Samples per Month for PWSs Serving More Than 1,000 People

Population Served	Minimum Number of Samples per Month	Population Served	Minimum Number of Samples per Month
1,001 to 2,500	2	70,001 to 83,000	80
2,501 to 3,300	3	83,001 to 96,000	90
3,301 to 4,100	4	96,001 to 130,000	100
4,101 to 4,900	5	130,001 to 220,000	120
4,901 to 5,800	6	220,001 to 320,000	150
5,801 to 6,700	7	320,001 to 450,000	180
6,701 to 7,600	8	450,001 to 600,000	210
7,601 to 8,500	9	600,001 to 780,000	240
8,501 to 12,900	10	780,001 to 970,000	270
12,901 to 17,200	15	970,001 to 1,230,000	300
17,201 to 21,500	20	1,230,001 to 1,520,000	330
21,501 to 25,000	25	1,520,001 to 1,850,000	360
25,001 to 33,000	30	1,850,001 to 2,270,000	390
33,001 to 41,000	40	2,270,001 to 3,020,000	420
41,001 to 50,000	50	3,020,001 to 3,960,000	450
50,001 to 59,000	60	3,960,001 or more	480
59,001 to 70,000	70		

Sections 2.4 through 2.8 of this document include the monitoring requirements for the various types of PWSs. Each of these sections includes the applicable monitoring requirements (e.g., routine, repeat) that affect that particular PWS type. Therefore, some repetition of monitoring requirements may be found throughout these sections.

2.1.1 RTCR Monitoring Requirements for PWSs with Various Types of Populations Served

The RTCR applies to all PWSs.[3] PWSs that must comply with the RTCR include those that serve year-round residents, as well as those that serve transient populations. For PWSs that serve year-round residents *and* a transient population (e.g., a casino resort with both live-in residents and visitors), the size of the transient population may or may not affect how the population of the PWS is determined and the associated RTCR required monitoring frequency. For CWSs, in most cases the transient population is small and will not affect the monitoring frequency. However, when there are PWSs where the resident population is relatively small in comparison to the transient population (e.g., a casino with 500 employees that live nearby, but with 10,000 visitors to the facility per day) then the PWS population for determining monitoring requirements is generally considered the average number of people served per day, both resident and transient. Like these combination resident and transient population systems, seasonal systems can also have varying populations throughout the year.

States can implement the monitoring requirements of the RTCR differently. Any modified monitoring scheme developed by the state must be in accordance with RTCR requirements. States may not reduce monitoring below the levels required in the RTCR. States may allow the population determination to: 1) change based on what occurs in any given month, or 2) be based on the highest population during the year.

Consecutive systems must monitor for total coliforms at a frequency based on the population served by the consecutive system and the source water type of the wholesale system.

2.2 Sample Siting Plans [40 CFR 141.853(a)]

All PWSs must collect coliform samples according to a written sample siting plan. This plan ensures samples are collected at locations representative of the entire distribution system. This requirement also benefits the PWS by documenting the sample siting locations for use by new operators or sample collectors and when troubleshooting the cause of positive sample results. Sample siting plans must be kept updated. PWSs should consider updating the sample plan when the customer population has increased so that the system must take a different RTCR minimum number of samples, in addition to when new infrastructure (i.e., wells, storage tanks, extensive distribution system lines, etc.) is added to the water system.

The sample siting plan must contain routine and repeat sampling locations representative of the distribution system, along with the sample collection schedule. The sampling sites in the plan should be located in accessible locations at a customer's premise, dedicated sampling station or other designated compliance sampling sites. Any sampling points that will be used as dual samples to meet the triggered source water monitoring requirements under the GWR must also be included in the sample siting plan.

All sample siting plans are subject to state review and revision. PWSs must have a sample siting plan that complies with the RTCR available for state review no later than April 1, 2016. States will likely be

[3] The RTCR applies to all PWSs, except for those excluded from regulation by Section 1411 of the SDWA (42 U.S.C. 300g) and those subject to the Aircraft Drinking Water Rule (40 CFR 141, Subpart X). See Section 1.3.1 for additional information on applicability of the Rule.

reviewing sample siting plans during sanitary surveys. In general, the RTCR does not require systems to submit sample siting plans to states or require states to review and approve sample siting plans prior to the PWSs taking their samples except in certain cases (see the following three exceptions). However, the states may choose to include review and approval requirements in their regulations.

The three exceptions are:

1. If a system proposes to use alternative sampling locations for their repeat samples (instead of five connections up and five connections down from the site that tested positive for total coliform), the system must submit their sample siting plans to the state. The RTCR does not require state approval of these alternate sampling locations before use by the PWS.

2. Seasonal systems on a less-than-monthly monitoring frequency must have a state-approved sample siting plan that designates the time period for when they would monitor. This period must be based on site-specific considerations. The RTCR requires written state approval of these sampling siting plans prior to their use by the PWS.

3. For states that adopt dual purpose sampling for eligible ground water systems (see Sections 2.4.9, 2.5.7, and 2.8.7 for details), the RTCR requires written state approval of these sampling plans prior to their use by the PWS.

When possible, state reviews should occur on or before April 1, 2016, and prior to the PWS beginning RTCR sampling. The state should review and determine whether the sample siting plans prepared by PWSs are representative of water throughout their distribution system. For example, if a PWS's distribution system has discrete water mains that do not loop and each main provides water to a substantial percentage of the service population, then EPA recommends that the PWS have sampling locations on each main in order to represent the entire distribution system. Other considerations when reviewing sample siting plans may include:

- Pressure zones;
- Zones upstream and downstream of storage tanks with dedicated inflow and outflow lines (i.e., tanks that do not "float" on the distribution system);
- Areas of the distribution system delivering water from different sources;
- Areas of the distribution system with longer hydraulic retention times (if known); and
- Areas of the distribution system with lower hydraulic pressures (if known).

In their primacy packages, states must describe the frequency and process they will use to review and revise sample siting plans to determine their adequacy. See Section 7.4.2 for additional information on this special primacy requirement.

The state can allow alternative monitoring locations for repeat samples that better characterize possible contamination routes into the distribution system via an established Standard Operating Procedure (SOP). As part of the sample siting plan, PWSs can choose to specify either alternative fixed locations or criteria for selecting other repeat sampling locations on a situational basis using the SOP. This adaptation allows a more flexible and protective response that enables the PWS to best detect the extent of potential contamination. As part of the sample siting plan, the alternative monitoring locations and criteria are subject to state review and revisions.

Ground water systems serving 1,000 or fewer people with one well may propose to use dual purpose samples to meet the requirements of RTCR repeat monitoring and GWR triggered source monitoring. The

RTCR is more stringent about ground water system eligibility for dual purpose sampling by specifying that only those systems with one well, serving 1,000 or fewer persons, are eligible for dual purpose sampling. The state must provide written approval for the PWS to use the dual purpose samples and the dual purpose sampling sites must be identified in the sample siting plan. The state written approval must be completed before the PWS can use a sample as such because they result in a reduced monitoring situation (i.e., a lower number of RTCR repeat samples would be collected in the distribution system). Similar to other reduced monitoring circumstances, if a state will allow the use of dual purpose samples, the state needs to describe in its primacy package the process for reviewing a system's sample siting plan that includes the use of dual purpose samples.

For seasonal systems monitoring less frequently than monthly, the sample siting plan must designate the time period for monitoring based on-site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). These seasonal systems must collect routine samples during the designated time period. The population served by a seasonal NCWSs will likely differ at different times of the year. Therefore, the sample siting plan should reflect an appropriate number of sites for the population served during the time the PWS is in operation and water is being consumed.

2.3 Analytical and Laboratory Methods [40 CFR 141.852]

States with primacy must have a program that certifies laboratories that are approved for use by PWSs for determining compliance with the NPDWRs. The state program must ensure that only the methods specified in the RTCR are used by laboratories for compliance analyses. It is the legal duty of the PWS, however, to ensure that samples are collected on schedule and analyzed by a certified laboratory within the regulatory timeframe. Regardless of whether the laboratory is a state-owned facility or a commercial laboratory, failure to monitor and failure to report compliance monitoring results are violations under the RTCR.

All samples must be collected using a standard sample volume of at least 100 milliliters (mL), regardless of the analytical method used. PWSs must ensure that routine monitoring samples are tested for the presence of total coliforms. In the event that a routine or repeat sample is TC+, the PWS must ensure that the sample is also tested for the presence of *E. coli*. The state must require that laboratories use one of the analytical methods listed in Table 2-3.

Table 2-3. Laboratory Methods

Organism	Methodology Category	Method [1]	Citation [1]
Total Coliforms	Lactose Fermentation Methods	Standard Total Coliform Fermentation Technique	Standard Methods 9221 B.1, B.2 (20th ed.; 21st ed.) [2, 3] Standard Methods Online 9221 B.1, B.2–99 2, 3
Total Coliforms	Lactose Fermentation Methods	Presence-Absence (P–A) Coliform Test	Standard Methods 9221 D.1, D.2 (20th ed.; 21st ed.) [2, 7] Standard Methods Online 9221 D.1, D.2–99 2, 7
Total Coliforms	Membrane Filtration Methods	Standard Total Coliform Membrane Filter Procedure	Standard Methods 9222 B, C (20th ed.; 21st ed.) [2, 4] Standard Methods Online 9222 B–97 2, 4, 9222 C–97 [2, 4]
Total Coliforms	Membrane Filtration Methods	Membrane Filtration using MI medium m-ColiBlue24® Test [2, 4] Chromocult [2, 4]	EPA Method 1604 2

Organism	Methodology Category	Method [1]	Citation [1]
Total Coliforms	Enzyme Substrate Methods	Colilert	Standard Methods 9223 B (20th ed.; 21st ed.) [2, 5] Standard Methods Online 9223 B–97 [2, 5]
Total Coliforms	Enzyme Substrate Methods	Colisure®	Standard Methods 9223 B (20th ed.; 21st ed.) [2, 5, 6] Standard Methods Online 9223 B–97 [2, 5, 6]
Total Coliforms	Enzyme Substrate Methods	E*Colite® Test [2] Readycult® Test [2] modified Colitag® Test [2]	
Escherichia coli	*Escherichia coli* Procedure (following Lactose Fermentation Methods) *Escherichia coli* Partition Method	*EC*–MUG medium	Standard Methods 9221 F.1 (20th ed.; 21st ed.) [2]
Escherichia coli	*Escherichia coli* Procedure (following Lactose Fermentation Methods) *Escherichia coli* Partition Method	*EC* broth with MUG (*EC*–MUG)	Standard Methods 9222 G.1c(2) (20th ed.; 21st ed.) [2, 8]
Escherichia coli	*Escherichia coli* Procedure (following Lactose Fermentation Methods) *Escherichia coli* Partition Method	NA–MUG medium	Standard Methods 9222 G.1c(1) (20th ed.; 21st ed.) [2]
Escherichia coli	Membrane Filtration Methods	Membrane Filtration using MI medium m-ColiBlue24® Test [2, 4] Chromocult [2, 4]	EPA Method 1604 [2]
Escherichia coli	Enzyme Substrate Methods	Colilert®	Standard Methods 9223 B (20th ed.; 21st ed.) [2, 5] Standard Methods Online 9223 B–97 [2, 5, 6]
Escherichia coli	Enzyme Substrate Methods	Colisure®	Standard Methods 9223 B (20th ed.; 21st ed.) [2, 5, 6] Standard Methods Online 9223 B–97 [2, 5, 6]
Escherichia coli	Enzyme Substrate Methods	E*Colite® Test [2] Readycult® Test [2] modified Colitag® Test [2]	

1. The procedures must be carried out in accordance with the documents listed in 40 CFR 141.852(c). For Standard Methods, either the 20th (1998) or 21st (2005) editions may be used. For the Standard Methods Online, the year in which each method was approved by the Standard Methods Committee is designated by the last two digits following the hyphen in the method number. The methods listed are the only online versions that may be used. For vendor methods, the date of the method listed in 40 CFR 141.852(c) is the date/version of the approved method. The methods listed are the only versions that may be used for compliance with the RTCR. Laboratories should be careful to use only the approved versions of the methods, as product package inserts may not be the same as the approved versions of the methods.
2. Incorporated by reference. See 40 CFR 141.852(c).
3. Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the PWS conducts at least 25 parallel tests between lactose broth and lauryl tryptose broth using the water normally tested, and if the findings from this comparison demonstrate that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than 10 percent.
4. All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to ultraviolet (UV) light is not adequate to ensure sterilization. Subsequent to the initial autoclaving,

exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is pre-sterilized by the manufacturer (i.e., disposable funnel units) may be used.

5. Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this regulation.
6. Colisure® results may be read after an incubation time of 24 hours.
7. A multiple tube enumerative format, as described in *Standard Methods for the Examination of Water and Wastewater* 9221, is approved for this method for use in presence-absence determination under the RTCR.
8. The following changes must be made to the *EC* broth with MUG (*EC*–MUG) formulation: Potassium dihydrogen phosphate, KH_2PO_4, must be 1.5 grams (g), and 4-methylumbelliferyl-Beta-D-glucuronide must be 0.05 g.

2.3.1 Expedited Monitoring Results Notification

Under the RTCR, the public is well served by timely reporting of positive microbiological monitoring results. The RTCR contains notification requirements for the PWS to communicate sampling results to the primacy agency (e.g., states) in a timely manner, but does not include provisions for notification from the certified laboratory to a PWS.

While some states have provisions in their existing regulations to address notification timeframes and procedures from the certified laboratory to the PWS, EPA strongly encourages PWSs to include language in their contractual agreements with the lab that sets deadlines for notifications; describes procedures for notifying the PWSs within 24 hours of any positive result (e.g., total coliforms, *E.coli*, etc.,); and stipulates the media(s) by which notification must occur. In addition to the use of phone calls, the widespread availability of electronic communication (e.g., email, text messaging, etc.) provides many options for 24-hour notification from the laboratory to the PWS when a positive monitoring result is identified.

2.4 Monitoring Requirements for NCWSs Using only Ground Water and Serving 1,000 or Fewer People [40 CFR 141.854]

This section explains the monitoring requirements for NCWSs using only ground water and serving 1,000 or fewer people that are not seasonal systems. For information on monitoring for seasonal NCWSs, see Section 2.8.

2.4.1 Routine Monitoring

The RTCR allowed PWSs to transition to the RTCR on April 1, 2016, with the monitoring frequency that was in effect on March 31, 2016, for that particular system, unless the system triggers increased monitoring or the state requires the system to change its monitoring.

Non-seasonal NCWSs serving 1,000 or fewer people using only ground water must conduct at least quarterly routine monitoring, unless the state has reduced the monitoring to annually (see Section 2.4.4 for information on qualifying for reduced monitoring). States have the discretion to require all non-seasonal NCWS to monitor monthly and direct PWSs to collect more than the minimum number of samples in order to fully represent the distribution system; states are not, however, required to adopt these provisions.

Any TC+ routine monitoring sample must also be analyzed for *E. coli*. A NCWS must continue to collect all required routine samples even if the system incurs an *E. coli* MCL violation or a TT-trigger occurs prior to the collection of all of the routine samples.

2.4.2 Repeat Monitoring [40 CFR 141.858]

The RTCR requires PWSs to conduct repeat monitoring when a routine or repeat sample is TC+. PWSs must take at least one round of repeat samples for each TC+ routine sample and must continue to collect repeat samples until a TT-trigger occurs or a set of repeat samples is TC-negative. Once a coliform TT-trigger occurs the PWS can stop collecting repeat samples in response to additional TC+ repeat samples. The PWS should be encouraged to notify the state when it incurs a TT-trigger. However, the PWS must notify the state by the end of the next business day if it incurs a TT violation and notify the public as a Tier 2 violation. For information on TT violations, see Section 5.2.

Within 24 hours of being notified of a TC+ result, the PWS must collect no fewer than three repeat samples for each TC+ routine or repeat sample, including:

- At least one repeat sample from the sampling tap where the original TC+ sample was taken;
- At least one repeat sample at a tap within five service connections upstream of the original sampling site or at an alternative location; and
- At least one repeat sample at a tap within five service connections downstream of the original sampling site or at an alternative location.

Every routine or repeat TC+ sample must also be analyzed for *E. coli*.

If a TC+ sample is collected from a sampling point at the end of the distribution system, or one service connection away from the end of the distribution system, the state may allow an alternative sampling location in lieu of the requirement to collect a repeat sample at the upstream or downstream location; however, the PWS must still take at least three repeat samples. One of those repeat samples should represent as closely as possible the water quality near the location of the TC+ sample.

PWSs must collect all repeat samples on the same day, except that a state may allow a PWS with a single service connection to collect the required set of repeat samples over a 3-day period, or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 mL.

The state may extend the 24-hour limit for repeat monitoring on a case-by-case basis (e.g., if the PWS has logistical problems beyond its control), and must specify the amount of time being granted for the extension. The state may not waive the requirement for a PWS to collect repeat samples.

The repeat monitoring locations associated with each routine sampling location must be identified in the sample siting plan. PWSs may propose alternative repeat monitoring locations (other than a site within five service connections upstream or within five service connections downstream from the original routine site) that a PWS believes to be representative of pathways for contamination of the distribution system. The PWS must design its sample siting plan to identify repeat sampling at locations that best verify and determine the extent of potential contamination of the distribution system. The state has the discretion to modify the sample siting plan as necessary.

Note that PWSs that must conduct triggered source water monitoring under the GWR must take ground water source sample(s) for GWR compliance in addition to repeat samples under the RTCR. See Section 2.4.9 for more information.

Note that if any repeat sample is TC+, the PWS must ensure that the sample is also analyzed for *E. coli*. A repeat TC+ sample following a routine sample that is *EC+* is an MCL violation. If a routine sample is

TC+/*E. coli*-negative and the repeat sample is *EC+*, the PWS has also incurred an *E. coli* MCL violation. For more information on *E. coli* MCL violations, see Section 5.1. The PWS must notify the state by the end of the day that the PWS has been notified of the monitoring result that resulted in the MCL violation, unless the PWS is notified after the state office is closed and the state does not have an alternative notification procedure (e.g., an emergency hotline or online notification system). In this case, the PWS must notify the state by the end of the next business day. The PWS will also have to issue Tier 1 PN, which is described in more detail in Section 6.1.

2.4.3 Special Monitoring Evaluation

The state must perform a special monitoring evaluation during each sanitary survey for all ground water NCWSs, including seasonal systems, serving 1,000 or fewer people. The state must determine the appropriateness of the monitoring schedules (e.g., monthly, quarterly, annually) and sample sites.

During the special monitoring evaluation, the state must evaluate water system factors such as pertinent water quality and compliance history, the establishment and maintenance of barriers to contamination, and other appropriate protections to water quality. The special monitoring evaluation is used to validate the PWS's existing monitoring locations, number of routine sample sites and monitoring frequency, and to allow for reduced monitoring or require more frequent monitoring, if necessary. After the state has performed the special monitoring evaluation during each water system's sanitary survey, the state may modify the PWS's monitoring schedule as necessary. The state may not reduce monitoring following a special monitoring evaluation unless the PWS has met the applicable criteria for reduced monitoring for ground water systems serving 1,000 or fewer people (outlined in 40 CFR 141.854(e) and discussed in Section 2.4.4 of this guidance).

The special monitoring evaluations are not anticipated to significantly increase the burden of conducting sanitary surveys because ground water systems serving 1,000 or fewer people are usually relatively simple, and the evaluation is performed during the routinely scheduled sanitary survey. Moreover, the information that will be assessed during the special monitoring evaluation should be evaluated to a great degree as part of a complete sanitary survey. Several of the eight required elements of a sanitary survey (i.e., distribution system and storage conditions, operator qualifications and performance, monitoring) should also be important considerations during the special monitoring evaluation.

States, in their primacy packages, must describe their procedures for performing special monitoring evaluations. See Section 7.4.7 for additional information on this special primacy requirement.

2.4.4 Reduced Monitoring

Under the RTCR, reduced monitoring is allowed if PWSs meet certain conditions and if reduced monitoring is allowed by the state. States are not, however, required to adopt these provisions. The state may reduce the monitoring frequency for a NCWS serving 1,000 or fewer people and using only ground water from quarterly to no less than annually if the NCWS demonstrates all of the following:

- A clean compliance history for a minimum of 12 months, as defined in 40 CFR 141.2. EPA recommends that this 12-month period be 12 consecutive months. A clean compliance history is defined in the RTCR as having no *E. coli* MCL violations under the RTCR, no monitoring violations under the RTCR, and no coliform TT-trigger has occurred or coliform TT violations has been incurred.

- The most recent sanitary survey was conducted at the appropriate frequency/timeline; covered all eight required elements; and showed the PWS was free of sanitary defects or has corrected all

identified sanitary defects, has a protected water source and meets approved construction standards.

- The state has conducted an annual site visit within the last 12 months, and the NCWS has corrected all identified sanitary defects. The NCWS may substitute a Level 2 assessment that meets the criteria listed in 40 CFR 141.859 for the annual state site visit. The sanitary survey may be used to meet the requirement for an annual site visit in the year in which the sanitary survey is completed.

For NCWSs using only ground water that serve 1,000 or fewer people in some months and more than 1,000 in other months, the state may allow these systems to reduce monitoring only during the months when the system serves 1,000 or fewer people. The state has the authority to determine how the transition to increased/decreased monitoring will occur in these situations. States do not need to describe how this transition will occur in their primacy package.

States have discretion in whether to consider monitoring violations when determining a TNCWS's compliance history and eligibility to qualify for quarterly monitoring. While the system still incurs a monitoring violation, states do not have to consider the violation when determining compliance history if the missed sample is collected no later than the end of the monitoring period following the monitoring period in which the sample was missed and the make-up sample is collected in a different week than the routine sample for that monitoring period [40 CFR 141.854(a)(4)]. Note that this provision is only available to TNCWSs and only when the state is determining whether the system has a clean compliance history. No other system types qualify and the TNCWS would still incur a monitoring violation.

2.4.5 Increased Monitoring

A NCWS on quarterly or annual routine or reduced monitoring must increase to monthly monitoring in the month after the system incurs any of the following:

- Triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period;
- Has an *E. coli* MCL violation;
- Has a total coliform TT violation; or
- Has two RTCR monitoring violations or one RTCR monitoring violation and one Level 1 assessment in a rolling 12-month period for a system on quarterly monitoring.

A NCWS on routine or reduced annual monitoring must begin quarterly monitoring in the quarter after the system incurs an RTCR monitoring violation.

2.4.6 Return to Quarterly Monitoring

The state may change the monitoring frequency for a NCWS on increased monthly monitoring to quarterly routine monitoring if the reason for the increased monitoring has been resolved and the NCWS has:

- Within the last 12 months, had a complete sanitary survey or a site visit by the state or a voluntary Level 2 assessment by a party approved by the state; been free of sanitary defects and has a protected water source.
- A clean compliance history for a minimum of 12 months, as defined in 40 CFR 141.2. EPA recommends that this 12-month period be 12 consecutive months. A clean compliance history is

defined in the RTCR as having no *E. coli* MCL violations, no monitoring violations under the RTCR, and no TT-trigger has occurred or TT violations has been incurred.

2.4.7 Return to Annual Monitoring

If a state has adopted provisions that allow a NCWS to monitor annually, a system triggered to increase to monthly or quarterly monitoring can return to/qualify for reduced annual monitoring if the reason for the increased monitoring has been resolved, and the NCWS meets all of the following requirements:

- Within the last 12 months, had a complete sanitary survey, a site visit by the state, or a voluntary Level 2 assessment by a party approved by the state; been free of sanitary defects; has a protected water source and meets approved construction standards.
- A clean compliance history for a minimum of 12 months, as defined in 40 CFR 141.2. EPA recommends that this 12-month period be 12 consecutive months. A clean compliance history is defined in the RTCR as having no *E. coli* MCL violations, no monitoring violations under the RTCR, and no coliform TT-trigger has occurred or coliform TT violations has been incurred.
- Had an annual site visit by the state and has corrected all identified sanitary defects. The NCWS may substitute a voluntary Level 2 assessment by a party approved by the state for the state annual site visit in any given year.
- Has in place or is adopting one or more additional enhancements to the water system as barriers to contamination including:
  - Cross-connection control program approved by the state.
  - An operator certified by an appropriate state certification program or regular visits by a circuit rider certified by an appropriate state certification program.
  - Continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the state.
  - Demonstration of maintenance of at least a 4-log removal or inactivation of viruses.
  - Other equivalent enhancements to water system barriers approved by the state.

Of the additional enhancements above, a state must include in their primacy package a written narrative explaining how the state will require PWSs on reduced monitoring to demonstrate:

- Continuous disinfection entering the distribution system and a residual in the distribution system.
- Cross-connection control.
- Other enhancements to water system barriers.

2.4.8 Additional Routine Monitoring

The RTCR requires any NCWS that is not on a monthly monitoring frequency to conduct additional routine monitoring the month following one or more TC+ samples (with or without a Level 1 TT-trigger). This additional routine monitoring consists of at least three samples in the month following the TC+ sample, collected at routine monitoring locations identified in the sample siting plan. This is a change from the TCR additional routine monitoring requirement of taking a total of five samples the month following a TC+ sample for PWSs that take four or fewer samples per month. The RTCR provides states

with the discretion to require all ground water systems to monitor monthly. For states that require all NCWSs to conduct monthly monitoring, additional routine monitoring is not required.

Use of the word "additional" when describing these samples may be confusing. It is called "additional" because it is more than the usual number of routine samples that systems on quarterly or annual monitoring must take. PWSs on quarterly or annual monitoring must take a total of at least three additional routine samples in the month following a TC+ sample. PWSs may collect the additional routine samples either at regular time intervals throughout the month or they may collect all three samples on a single day if the samples are taken at different locations. The results of these samples must be used in the calculation of the coliform TT-trigger. A PWS must continue to take three additional routine samples each month following the TC+ sample until:

- Total coliforms are not detected. If all three additional routine samples are TC-negative, the system continues with its routine quarterly or annual monitoring frequency, unless directed by the state to remain on monthly monitoring.

- The monitoring results trigger the system into an increased monthly monitoring frequency, see Section 2.4.5. Note that additional routine samples that are TC+ require repeat samples and analysis for *E. coli*, as would be required if the PWS were on its routine monitoring schedule.

The state may waive the requirement to collect three additional routine samples the next month that the PWS serves water to the public if <u>at least one</u> of the following conditions is met:

- The state or a state-approved agent performs a site visit before the end of the next month in which the PWS provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the state to determine whether additional monitoring and/or corrective action is needed. The state may not approve an employee of the PWS to perform this site visit.

- The state has determined why the sample was TC+ and has established that the PWS has corrected the problem or will correct the problem before the end of the next month that the PWS serves water to the public. This decision must be documented by the state and approved and signed by the supervisor of the state official who recommends the decision. The decision document must be made available to EPA and the public upon request. The written documentation must describe the specific cause of the TC+ sample and what action(s) the PWS has taken and/or will take to correct the problem.

- The state determines that the PWS corrected the contamination problem before the PWS took the set of required repeat samples, and all repeat samples were TC-negative. The state may not waive the requirement for additional routine monitoring solely on the grounds that all repeat sample results were TC-negative.

2.4.9 Triggered Source Water Monitoring Under the GWR and Repeat Sampling Under the RTCR

Triggered source water monitoring is required under the GWR when a PWS using a ground water source, does not provide at least 4-log removal or inactivation of viruses for every entry point into the distribution system and is not required by the state to conduct GWR compliance monitoring to ensure 4-log removal or inactivation of viruses, and receives a TC+ sample result under the RTCR. In accordance with the GWR, the PWS must collect at least one ground water source sample from each source in use at the time the TC+ sample was collected [40 CFR 141.402(a)]. If the state does not require immediate corrective action in response to a fecal indicator-positive triggered source water sample under the GWR, PWSs must

collect five additional source water samples (from the same source) within 24 hours of being notified of the fecal indicator-positive triggered source sample [40 CFR 141.402(a)(3)].

As per 40 CFR 141.853(a)(5)(ii), the state may allow a PWS with a single ground water well, serving 1,000 or fewer people, and required to conduct triggered source water monitoring under the GWR, to also use that source water sample as one of the repeat samples under the RTCR (commonly referred to as a dual purpose sample). If the state uses *E.coli* as the fecal indictor for GWR triggered source water monitoring and it approves dual purpose sampling the PWS must have written state approval to use this sample under the RTCR. [40 CFR 141.402(a)(2)(iv)]. In addition, the PWS must include in its RTCR sample siting plan the dual purpose sample site. The PWS must demonstrate that the sample siting plan remains representative of distribution system water quality. Once approved by the state, the PWS may use the sample result from the approved location to meet the monitoring requirements of both the GWR and RTCR. Other required repeat samples under the RTCR must be taken at the locations specified in the RTCR sample siting plan. Note that a PWS with more than one ground water well or that serves more than 1,000 persons is not eligible for dual purpose sampling.

Requiring state approval for allowing these dual purpose samples (i.e., using the same sample to comply with the sampling requirements of the RTCR *and* the GWR) limits the practice only to PWSs that can conduct such monitoring without compromising public health protection. State approval is required under these circumstances because this constitutes a reduction in monitoring (i.e., no separate triggered source water samples), rather than requiring separate samples for compliance with the two rules. A reduction in monitoring is appropriate only if the state determines that the dual purpose sample provides comparable public health protection to that provided by separate repeat and source water samples.

A system with a single service connection and single sampling location for both the routine and repeat samples under the RTCR and the triggered source monitoring under the GWR must classify all repeat samples as dual purpose samples if the state approves dual purpose sampling.

States should be aware that triggered source water monitoring samples under the GWR must be taken at the source prior to any treatment. States should ensure that any PWS approved to use a dual purpose sample designates the sample as both a source water sample under the GWR and a repeat sample under the RTCR.

Since dual purpose samples are used for compliance with both the RTCR and the GWR, there are consequences under both rules for having an *EC+* result. Table 2-4 summarizes the consequences for each Rule. The system may also have to issue PN in accordance with both the RTCR and the GWR.

Table 2-4. Consequences of *EC+* Various Results When a NCWS Using Only Ground Water and Serving 1,000 or Fewer People Uses a Dual Purpose Sample

Number of Dual Purpose Samples Taken	Result	Consequences Under RTCR	Consequences Under GWR
1 [40 CFR 141.853(a)(5)(ii)(A)]	*EC+*	• MCL violation • Level 2 assessment and associated corrective action(s)	Comply with 40 CFR 141.402(a)(3): • Take corrective action if directed by the state; or • Collect five additional source water samples.

Number of Dual Purpose Samples Taken	Result	Consequences Under RTCR	Consequences Under GWR
2 or 3 [40 CFR 141.853(a)(5)(ii)(A) and (B)]	1 *EC*+	• MCL violation • Level 2 assessment and associated corrective action(s)	Comply with 40 CFR 141.402(a)(3): • Take corrective action if directed by the state; or • If two dual purpose samples were taken at the approved location, collect five or four additional source water samples [see RTCR 40 CFR 141.853(a)(5)(ii)(A)]; or • If three dual purpose samples were taken at the approved location, collect five or three additional source water samples [see RTCR 40 CFR 141.853(a)(5)(ii)(A)].
2 or 3 [40 CFR 141.853(a)(5)(ii)(A) and (B)]	≥ 2 *EC*+	• MCL violation • Level 2 assessment and associated corrective action(s)	Comply with 40 CFR 141.403(a)(1) for GWR TT violation: • Corrective action required.

Note that if all repeat samples taken at the monitoring location required for triggered source water monitoring (i.e., at the source before treatment) are *E. coli*-negative, but a repeat sample taken at a monitoring location in the distribution system is *EC*+, the PWS has violated the *E. coli* MCL under the RTCR, but is not required to collect five additional source water samples under the GWR or comply with the GWR TT requirements (i.e., the sample from the distribution system is not a dual purpose sample).

2.5 Monitoring Requirements for Ground Water CWSs Serving 1,000 or Fewer People [40 CFR 141.855]

This section presents the monitoring requirements for CWSs using only ground water and serving 1,000 or fewer people.

2.5.1 Routine Monitoring

The RTCR allowed PWSs to transition to the RTCR on April 1, 2016, with the monitoring frequency that was in effect on March 31, 2016, for that particular system, unless the state requires the system to change its monitoring. CWSs serving 1,000 or fewer people using only ground water must conduct monthly routine monitoring, unless the state has reduced the monitoring to quarterly. These systems must collect at least one routine sample per month, unless the state directs them to collect more samples in order to fully represent their distribution systems.

Any TC+ routine monitoring sample must also be analyzed for *E. coli*. A CWS must continue to collect all required routine samples even if the system incurs an *E. coli* MCL violation or a TT-trigger occurs prior to the collection of all of the routine samples.

2.5.2 Repeat Monitoring [40 CFR 141.858]

The RTCR requires PWSs to conduct repeat monitoring when a routine or repeat sample is TC+. PWSs must take at least one round of repeat samples for each TC+ routine sample and must continue to collect repeat samples until a TT-trigger occurs or a set of repeat samples is TC-negative. Once a coliform TT-trigger occurs the PWS can stop collecting repeat samples in response to additional TC+ repeat samples. The PWS should be encouraged to notify the state when it incurs a TT-trigger. However, the PWS must notify the state by the end of the next business day if it incurs a TT violation and notify the public as a Tier 2 violation. For information on TT violations, see Section 5.2.

Within 24 hours of being notified of a TC+ result, the PWS must collect no fewer than three repeat samples for each TC+ routine or repeat sample, including:

- At least one repeat sample from the sampling tap where the original TC+ sample was taken;
- At least one repeat sample at a tap within five service connections upstream of the original sampling site or at an alternative location; and
- At least one repeat sample at a tap within five service connections downstream of the original sampling site or at an alternative location.

Every routine or repeat TC+ sample must also be analyzed for *E. coli*.

If a TC+ sample is collected from a sampling point at the end of the distribution system, or one service connection away from the end of the distribution system, the state may allow an alternative sampling location in lieu of the requirement to collect a repeat sample at the upstream or downstream location; however, the PWS must still take at least three repeat samples. One of those repeat samples should represent as closely as possible the water quality near the location of the TC+ sample.

PWSs must collect all repeat samples on the same day, except that a state may allow a PWS with a single service connection to collect the required set of repeat samples over a 3-day period, or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 mL.

The state may extend the 24-hour limit for repeat monitoring on a case-by-case basis (i.e., if the PWS has logistical problems beyond its control) and must specify the amount of time being granted for the extension. The state may not waive the requirement for a PWS to collect repeat samples.

The repeat monitoring locations associated with each routine sampling location must be identified in the sample siting plan. PWSs may propose alternative repeat monitoring locations (other than a site within five service connections upstream or within five service connections downstream from the original routine site) that a PWS believes to be representative of pathways for contamination of the distribution system. The PWS must design its sample siting plan to identify repeat sampling at locations that best verify and determine the extent of potential contamination of the distribution system. The state has the discretion to modify the sample siting plan as necessary.

Note that PWSs that must conduct triggered source water monitoring under the GWR must take ground water source sample(s) for GWR compliance in addition to repeat samples under the RTCR. See Section 2.5.7 for more information.

Note that if any repeat sample is TC+, the PWS must ensure that the sample is also analyzed for *E. coli*. A repeat TC+ sample following a routine sample that is *EC+* is an MCL violation. If a routine sample is TC+/*E. coli*-negative and the repeat sample is *EC+*, the PWS has also incurred an *E. coli* MCL violation. For more information on *E. coli* MCL violations, see Section 5.1. The PWS must notify the state by the end of the day that the PWS has been notified of the monitoring result that resulted in the MCL violation, unless the PWS is notified after the state office is closed and the state does not have an alternative notification procedure (e.g., an emergency hotline or online notification system). In this case, the PWS must notify the state by the end of the next business day. The PWS will also have to issue Tier 1 PN, which is described in more detail in Section 6.1.

2.5.3 Special Monitoring Evaluation

The state must perform a special monitoring evaluation during each sanitary survey for all ground water CWSs serving 1,000 or fewer people. The state must determine the appropriateness of the monitoring schedules (e.g., monthly, quarterly) and sample sites.

During the special monitoring evaluation, the state must evaluate water system factors such as pertinent water quality and compliance history, the establishment and maintenance of barriers to contamination and other appropriate protections to water quality. The special monitoring evaluation is used to validate the PWS's existing monitoring locations, number of routine sample sites and monitoring frequency and to allow for reduced monitoring or require more frequent monitoring, if necessary. After the state has performed the special monitoring evaluation during each water system's sanitary survey, the state may modify the PWS's monitoring schedule as necessary. The state may not reduce monitoring following a special monitoring evaluation unless the PWS has met the applicable criteria for reduced monitoring for ground water systems serving 1,000 or fewer people (outlined in 40 CFR 141.855(d) and discussed in Section 2.5.4 of this guidance).

The special monitoring evaluations are not anticipated to significantly increase the burden of conducting sanitary surveys because ground water systems serving 1,000 or fewer people are usually relatively simple, and the evaluation is performed during the routinely scheduled sanitary survey. Moreover, the information that will be assessed during the special monitoring evaluation should be evaluated to a great degree as part of a complete sanitary survey. Several of the eight required elements of a sanitary survey (i.e., distribution system and storage conditions, operator qualifications and performance, monitoring) should also be important considerations during the special monitoring evaluation.

States, in their primacy packages, must describe their procedures for performing special monitoring evaluations. See Section 7.4.7 for additional information on this special primacy requirement.

2.5.4 Reduced Monitoring

Reduced monitoring is allowed under the RTCR if PWSs meet certain conditions and if reduced monitoring is allowed by the state. States are not required to adopt the reduced monitoring provisions of the RTCR. The total coliform routine monitoring frequency for a CWS serving 1,000 or fewer people and using only ground water is one sample each month. The state may reduce the monitoring frequency from monthly to no less than quarterly if the CWS meets the following criteria:

- The CWS is in compliance with state-certified operator provisions. A system that loses its certified operator must return to monthly monitoring the month following that loss.

- The CWS has a clean compliance history for a minimum of 12 months, as defined in 40 CFR 141.2. EPA recommends that this 12-month period be 12 consecutive months. A clean compliance history is defined in the RTCR as having no *E. coli* MCL violations, no monitoring violations under the RTCR, and no coliform TT-trigger has occurred or coliform TT violations has been incurred.

- The most recent sanitary survey was conducted at the appropriate frequency/timeline; covered all eight required elements; and showed the CWS is free of sanitary defects (or has an approved plan and schedule to correct them and the CWS is in compliance with the plan and the schedule), has a protected water source and meets approved construction standards.

- The CWS meets one or more of the following criteria:
  - Has had an annual site visit by the state that is equivalent to a Level 2 assessment or has had an annual Level 2 assessment by a party approved by the state and has corrected all identified sanitary defects (or has an approved plan and schedule to correct them and is in compliance with the plan and schedule).
  - Has a cross-connection control program approved by the state.
  - Has continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the state.
  - Can demonstrate maintenance of at least a 4-log removal or inactivation of viruses as provided for under the GWR [40 CFR 141.403(b)(3)].
  - Has in place other equivalent enhancements to water system barriers approved by the state.

2.5.5 Return to Monthly Monitoring

A CWS on quarterly reduced monitoring must return to monthly routine monitoring in the month after the CWS incurs any of the following:

- Triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period;
- Has an *E. coli* MCL violation;
- Has a total coliform TT violation; or
- Has two RTCR monitoring violations in a rolling 12-month period.

2.5.6 Additional Routine Monitoring

The RTCR requires any ground water CWS serving less than 1,000 persons that is not on a monthly monitoring frequency to conduct additional routine monitoring the month following one or more TC+ samples (with or without a Level 1 TT-trigger). This additional routine monitoring consists of at least three samples in the month following the TC+ sample, collected at routine monitoring locations identified in the sample siting plan. This is a change from the TCR additional routine monitoring requirement of taking a total of five samples the month following a TC+ sample for PWSs that take four or fewer samples per month. For states that do not allow quarterly monitoring (i.e., all ground water systems must monitor monthly), additional routine monitoring is not required.

Use of the word “additional” when describing these samples may be confusing. It is called “additional” because it is more than the usual number of routine samples that systems on quarterly monitoring must take. PWSs on quarterly monitoring must take a total of at least three routine samples the month following a TC+ sample. PWSs may collect the additional routine samples either at regular time intervals throughout the month or they may collect all three samples on a single day if the samples are taken at different locations. The results of these samples must be used in the calculation of the coliform TT-trigger. A PWS must continue to take three additional routine samples each month until:

- Total coliforms are not detected. If all three additional routine samples in a set are TC-negative, the system continues with its regular quarterly monitoring, unless directed by the state to remain on monthly monitoring.
- The monitoring results trigger the system into returning to a monthly monitoring frequency, see Section 2.5.5. Note that additional routine samples that are TC+ require repeat samples and analysis for *E. coli,* as would be required if the PWS were on its routine monitoring schedule.

The state may waive the requirement to collect three additional routine samples the next month that the PWS serves water to the public if at least one of the following conditions is met:

- The state or a state-approved agent performs a site visit before the end of the next month in which the PWS provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the state to determine whether additional monitoring and/or corrective action is needed. The state may not approve an employee of the PWS to perform this site visit.

- The state has determined why the sample was TC+ and has established that the PWS has corrected the problem or will correct the problem before the end of the next month that the PWS serves water to the public. This decision must be documented by the state and approved and signed by the supervisor of the state official who recommends the decision. The decision document must be made available to EPA and the public upon request. The written documentation must describe the specific cause of the TC+ sample and what action(s) the PWS has taken and/or will take to correct the problem.

- The state determines that the PWS corrected the contamination problem before the PWS took the set of required repeat samples, and all repeat samples were TC-negative. The state may not waive the requirement for additional routine monitoring solely on the grounds that all repeat sample results were TC-negative.

2.5.7 Triggered Source Water Monitoring Under the GWR and Repeat Sampling Under the RTCR

Triggered source water monitoring is required under the GWR when a PWS using a ground water source, does not provide at least 4-log removal or inactivation of viruses for every entry point into the distribution system and is not required by the state to conduct GWR compliance monitoring to ensure 4-log removal or inactivation of viruses, and receives a TC+ sample result under the RTCR. The PWS must collect at least one ground water source sample from each source in use at the time the TC+ sample was collected [40 CFR 141.402(a)]. If the state does not require immediate corrective action in response to a fecal indicator-positive triggered source water sample under the GWR, PWSs must collect five additional source water samples (from the same source) within 24 hours of being notified of the fecal indicator-positive triggered source sample [40 CFR 141.402(a)(3)].

As per 40 CFR 141.853(a)(5)(ii), the state may allow a PWS with a single ground water well, serving 1,000 or fewer people, and required to conduct triggered source water monitoring under the GWR, to also use that source water sample as one of the repeat samples under the RTCR (commonly referred to as a dual purpose sample). If the state uses *E.coli* as the fecal indictor for GWR triggered source water monitoring and it approves dual purpose sampling the PWS must have written state approval to use this sample under the RTCR. [40 CFR 141.402(a)(2)(iv)]. In addition, the PWS must include in its RTCR sample siting plan the dual purpose sample site. The PWS must demonstrate that the sample siting plan remains representative of distribution system water quality. Once approved by the state, the PWS may use the sample result from the approved location to meet the monitoring requirements of both the GWR and RTCR. Other required repeat samples under the RTCR must be taken at the locations specified in the RTCR sample siting plan. Note that a PWS with more than one ground water well or that serves more than 1,000 persons is not eligible for dual purpose sampling.

Requiring state approval for allowing these dual purpose samples (i.e., using the same sample to comply with the sampling requirements of the RTCR *and* the GWR) limits the practice only to PWSs that can conduct such monitoring without compromising public health protection. State approval is required under these circumstances because this constitutes a reduction in monitoring (i.e., no separate triggered source

water samples), rather than requiring separate samples for compliance with the two rules. A reduction in monitoring is appropriate only if the state determines that the dual purpose sample provides comparable public health protection to that provided by separate repeat and source water samples.

A system with a single service connection and single sampling location for both the routine and repeat samples under the RTCR and the triggered source monitoring under the GWR must classify all repeat samples as dual purpose samples if the state approves dual purpose sampling.

States should be aware that triggered source water monitoring samples under the GWR must be taken at the source prior to any treatment. States should ensure that any PWS approved to use a dual purpose sample designates the sample as both a source water sample under the GWR and a repeat sample under the RTCR.

Since dual purpose samples are used for compliance with both the RTCR and the GWR, there are consequences under both rules for having an *EC+* result. Table 2-5 summarizes the consequences for each Rule. The system may also have to issue PN in accordance with both the RTCR and the GWR.

Table 2-5. Consequences of *EC+* Various Results When a Ground Water CWS Serving 1,000 or Fewer People Uses a Dual Purpose Sample

Number of Dual Purpose Samples Taken	Result	Consequences Under RTCR	Consequences Under GWR
1 [40 CFR 141.853(a)(5)(ii)(A)]	*EC+*	• MCL violation • Level 2 assessment and associated corrective action(s)	Comply with 40 CFR 141.402(a)(3): • Take corrective action if directed by the state; or, • Collect five additional source water samples.
2 or 3 [40 CFR 141.853(a)(5)(ii)(A) and (B)]	1 *EC+*	• MCL violation • Level 2 assessment and associated corrective action(s)	Comply with 40 CFR 141.402(a)(3): • Take corrective action if directed by the state; or, • If two dual purpose samples were taken at the approved location, collect five or four additional source water samples [see RTCR 40 CFR 141.853(a)(5)(ii)(A)]; or, • If three dual purpose samples were taken at the approved location, collect five or three additional source water samples [see RTCR 40 CFR 141.853(a)(5)(ii)(A)].
2 or 3 [40 CFR 141.853(a)(5)(ii)(A) and (B)]	≥ 2 *EC+*	• MCL violation • Level 2 assessment and associated corrective action(s)	Comply with 40 CFR 141.403(a)(1) for GWR TT violation: • Corrective action required.

Note that if all repeat samples taken at the monitoring location required for triggered source water monitoring (i.e., at the source before treatment) are *E. coli*-negative, but a repeat sample taken at a monitoring location in the distribution system is *EC+*, the PWS has violated the *E. coli* MCL under the RTCR, but is not required to collect five additional source water samples under the GWR or comply with the GWR TT requirements (i.e., the sample from the distribution system is not a dual purpose sample).

2.6 Monitoring Requirements for Subpart H PWSs Serving 1,000 or Fewer People [40 CFR 141.856]

This section presents the monitoring requirements for Subpart H PWSs (i.e., those using surface water or ground water under the direct influence (GWUDI) of surface water) serving 1,000 or fewer people.

2.6.1 Routine Monitoring

The RTCR allowed PWSs to transition to the RTCR on April 1, 2016, with the monitoring frequency that was in effect on March 31, 2016, for that particular system.

PWSs serving 1,000 or fewer people using surface water or GWUDI of surface water must conduct monthly routine monitoring. These PWSs must collect at least one routine sample per month, unless they have been directed to collect more samples in order to fully represent their distribution systems.

Any TC+ routine monitoring sample must also be analyzed for *E. coli*. All routine samples must be collected even if the PWS has incurred an *E. coli* MCL violation or a TT-trigger occurs prior to the collection of all of the routine samples. Note: All PWSs of any size that use a surface water, GWUDI or a blended source of surface water/GWUDI/ground water must conduct monthly routine monitoring. There is no option for reduced monitoring.

Under 40 CFR 141.856(c) and §141.857(c), unfiltered surface water or GWUDI (Subpart H) systems must collect at least one total coliform sample near the first service connection of the distribution system each day the turbidity level of the source water exceeds one NTU. This requirement continues the existing TCR requirement found at 40 CFR 141.21(a)(5). When one or more turbidity measurements in any day exceed 1 NTU, the PWS must collect this coliform sample within 24 hours of the first exceedance, unless the state determines that the PWS may not have the sample analyzed within 30 hours of collection and identifies an alternative sample collection schedule. The state will need to identify an alternative sample collection schedule every time the PWS cannot meet the 30-hour time limit. All coliform sample results must be included in determining whether the coliform TT-trigger has been exceeded. Coliform sampling locations that are used to satisfy this requirement should also be included in the unfiltered PWS's sample siting plan.

This monitoring is in addition to other requirements the PWS has as a condition for the PWS's filtration avoidance status. Among those filtration avoidance criteria is a requirement for those systems to take source water total coliform or fecal coliform samples on a continuing basis, with the frequency being based on population served (see 40 CFR 141.71(a)(1) and §141.74(b)(1) for specifics).

2.6.2 Repeat Monitoring [40 CFR 141.858]

The RTCR requires PWSs to conduct repeat monitoring when a routine or repeat sample is TC+. PWSs must take at least one round of repeat samples for each TC+ routine sample and must continue to collect repeat samples until a TT-trigger occurs or a set of repeat samples is TC-negative. Once a coliform TT-trigger occurs the PWS can stop collecting repeat samples in response to additional TC+ repeat samples. The PWS should be encouraged to notify the state when it incurs a TT-trigger. However, the PWS must notify the state by the end of the next business day if it incurs a TT violation and notify the public as a Tier 2 violation. For information on TT violations, see Section 5.2.

Within 24 hours of being notified of a TC+ result, the PWS must collect no fewer than three repeat samples for each TC+ routine or repeat sample, including:

- At least one repeat sample from the sampling tap where the original TC+ sample was taken;

- At least one repeat sample at a tap within five service connections upstream of the original sampling site or at an alternative location; and

- At least one repeat sample at a tap within five service connections downstream of the original sampling site or at an alternative location.

Every routine or repeat TC+ sample must also be analyzed for *E. coli*.

If a TC+ sample is collected from a sampling point at the end of the distribution system, or one service connection away from the end of the distribution system, the state may allow an alternative sampling location in lieu of the requirement to collect a repeat sample at the upstream or downstream location; however, the PWS must still take at least three repeat samples. One of those repeat samples should represent as closely as possible the water quality near the location of the TC+ sample.

PWSs must collect all repeat samples on the same day, except that a state may allow a PWS with a single service connection to collect the required set of repeat samples over a 3-day period, or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 mL.

The state may extend the 24-hour limit for repeat monitoring on a case-by-case basis (i.e., if the PWS has logistical problems beyond its control) and must specify the amount of time being granted for the extension. The state may not waive the requirement for a PWS to collect repeat samples.

The repeat monitoring locations associated with each routine sampling location must be identified in the sample siting plan. PWSs may propose alternative repeat monitoring locations (other than a site within five service connections upstream or within five service connections downstream from the original routine site), that a PWS believes to be representative of pathways for contamination of the distribution system. The PWS must design its sample siting plan to identify repeat sampling at locations that best verify and determine the extent of potential contamination of the distribution system. The state has the discretion to modify the sample siting plan as necessary.

Note that if any repeat sample is TC+, the PWS must ensure that the sample is also analyzed for *E. coli*. A repeat TC+ sample following a routine sample that is *EC+* is an MCL violation. If a routine sample is TC+/*E. coli*-negative and the repeat sample is *EC+*, the PWS has also incurred an *E. coli* MCL violation. For more information on *E. coli* MCL violations, see Section 5.1. The PWS must notify the state by the end of the day that the PWS has been notified of the monitoring result that resulted in the MCL violation, unless the PWS is notified after the state office is closed and the state does not have an alternative notification procedure (e.g., an emergency hotline or online notification system). In this case, the PWS must notify the state by the end of the next business day. The PWS will also have to issue Tier 1 PN, which is described in more detail in Section 6.1.

2.7 Monitoring Requirements for PWSs Serving More Than 1,000 People [40 CFR 141.857]

This section presents the monitoring requirements for PWSs serving more than 1,000 people.

2.7.1 Routine Monitoring

The RTCR allowed PWSs to transition to the RTCR on April 1, 2016, with the monitoring frequency that was in effect on March 31, 2016.

All PWSs serving more than 1,000 people must conduct monthly routine monitoring. These PWSs must collect the minimum number of samples shown in Table 2-2 but the state may direct them to collect more samples in order to fully represent their distribution systems.

PWSs of any size that use a surface water, GWUDI of surface water, or a blended source of surface water/GWUDI/ground water must also conduct monthly routine monitoring.

PWSs must collect samples at regular intervals throughout the month. Ground water systems serving 1,001 to 4,900 people may collect all required samples on a single day if they are taken from different sites. Any TC+ routine monitoring sample must also be analyzed for *E. coli*. All routine samples must be collected even if the PWS incurs an *E. coli* MCL violation or a TT-trigger occurs prior to the collection of all routine samples.

Unfiltered surface water or GWUDI (Subpart H) systems must collect at least one total coliform sample near the first service connection of the distribution system each day the turbidity level of the source water exceeds 1 NTU [see also 40 CFR 141.74(b)(1)]. When one or more turbidity measurements in any day exceed 1 NTU, the PWS must collect this coliform sample within 24 hours of the first exceedance, unless the state determines that the PWS cannot have the sample analyzed within 30 hours of collection and identifies an alternative sample collection schedule. The state will need to identify an alternative sample collection schedule every time the PWS cannot meet the 30-hour time limit. All coliform sample results must be included in determining whether the coliform TT-trigger has been exceeded. Coliform sampling locations that are used to satisfy this requirement should also be included in the unfiltered PWS's sample siting plan. This monitoring is in addition to any other requirements the PWS may have as a condition for the PWS's filtration avoidance status.

Note that an unfiltered Subpart H system, in order to comply with the criterion for avoiding filtration under 40 CFR 141.71(b)(5), must comply with the MCL for total coliforms until March 31, 2016, and the MCL for *E. coli* beginning April 1, 2016. Under the criterion for avoiding filtration the Subpart H system must comply with the required MCL in at least 11 of the 12 months that the PWS served water to the public, unless the state determines that failure to meet this requirement was not caused by a deficiency in treatment of the source water.

2.7.2 Repeat Monitoring [40 CFR 141.858]

The RTCR requires PWSs to conduct repeat monitoring when a routine or repeat sample is TC+. PWSs must take at least one round of repeat samples for each TC+ routine sample and must continue to collect repeat samples until a TT-trigger occurs or a set of repeat samples is TC-negative. Once a coliform TT-trigger occurs the PWS can stop collecting repeat samples in response to additional TC+ repeat samples. The PWS should be encouraged to notify the state when it incurs a TT-trigger. However, the PWS must notify the state by the end of the next business day if it incurs a TT violation and notify the public as a Tier 2 violation. For information on TT violations, see Section 5.2.

Within 24 hours of being notified of a TC+ result, the PWS must collect no fewer than three repeat samples for each TC+ routine or repeat sample, including:

- At least one repeat sample from the sampling tap where the original TC+ sample was taken;
- At least one repeat sample at a tap within five service connections upstream of the original sampling site or at an alternative location; and
- At least one repeat sample at a tap within five service connections downstream of the original sampling site or at an alternative location.

Every routine or repeat TC+ sample must also be analyzed for *E. coli*.

If a TC+ sample is collected from a sampling point at the end of the distribution system, or one service connection away from the end of the distribution system, the state may allow an alternative sampling location in lieu of the requirement to collect a repeat sample at the upstream or downstream location; however, the PWS must still take at least three repeat samples. One of those repeat samples should represent as closely as possible the water quality near the location of the TC+ sample.

PWSs must collect all repeat samples on the same day, except that a state may allow a PWS with a single service connection to collect the required set of repeat samples over a 3-day period, or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 mL.

The state may extend the 24-hour limit for repeat monitoring on a case-by-case basis (i.e., if the PWS has logistical problems beyond its control) and must specify the amount of time being granted for the extension. The state may not waive the requirement for a PWS to collect repeat samples.

The repeat monitoring locations associated with each routine sampling location must be identified in the sample siting plan. PWSs may propose alternative repeat monitoring locations (other than a site within five service connections upstream or within five service connections downstream from the original routine site), that a PWS believes to be representative of pathways for contamination of the distribution system. The PWS must design its sample siting plan to identify repeat sampling at locations that best verify and determine the extent of potential contamination of the distribution system. The state has the discretion to modify the sample siting plan as necessary.

Note that PWSs that must conduct triggered source water monitoring under the GWR must take ground water source sample(s) for GWR compliance in addition to repeat samples under the RTCR. See Section 2.7.3 for more information.

Note that if any repeat sample is TC+, the PWS must ensure that the sample is also analyzed for *E. coli*. A repeat TC+ sample following a routine sample that is *EC+* is an MCL violation. If the routine sample is TC+/*E. coli*-negative and the repeat sample is *EC+*, the PWS has also incurred an *E. coli* MCL violation. For more information on *E. coli* MCL violations, see Section 5.1. The PWS must notify the state by the end of the day that the PWS has been notified of the monitoring result that resulted in the MCL violation, unless the PWS is notified after the state office is closed and the state does not have an alternative notification procedure (e.g., an emergency hotline or online notification system). In this case, the PWS must notify the state by the end of the next business day. The PWS will also have to issue Tier 1 PN, which is described in more detail in Section 6.1.

2.7.3 Triggered Source Water Monitoring Under the GWR and Repeat Sampling Under the RTCR for Ground Water PWSs

Triggered source water monitoring is required under the GWR when a PWS using a ground water source, does not provide at least 4-log removal or inactivation of viruses for every entry point into the distribution system and is not required by the state to conduct GWR compliance monitoring to ensure 4-log removal or inactivation of viruses, and receives a TC+ sample result under the RTCR. The PWS must collect at least one ground water source sample from each source in use at the time the TC+ sample was collected [40 CFR 141.402(a)]. If the state does not require immediate corrective action in response to a fecal indicator-positive triggered source water sample under the GWR, PWSs must collect five additional source water samples (from the same source) within 24 hours of being notified of the fecal indicator-positive triggered source sample [40 CFR 141.402(a)(3)].

A PWS that serves more than 1,000 persons is not eligible to take dual purpose samples for compliance with the GWR triggered source water monitoring and RTCR repeat monitoring requirements.

2.8 Monitoring Requirements for Seasonal NCWSs [40 CFR 141.854(i), 40 CFR 141.856(a)(4) and 40 CFR 141.857(a)(4)]

This section presents the monitoring requirements for seasonal NCWSs. A seasonal system is a NCWS that is not operated as a PWS on a year-round basis and starts up and shuts down at the beginning and end of each operating season. Seasonal systems represent a special case in that the shutdown and start-up of these water systems present additional opportunities for contamination to enter or spread through the distribution system. The RTCR requires that seasonal NCWSs demonstrate completion of a state-approved start-up procedure which may include a requirement for start-up sampling prior to serving water to the public. An example start-up completion certification letter is included in Appendix C. States must describe their start-up provisions for seasonal systems in their primacy packages, as described in Section 7.4.8.4.

A state may exempt any seasonal system from some or all of the start-up procedure requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the NCWS is not operating. In providing such exemption, the state should conclude that public health protection is maintained and ensure that even a system that remains pressurized, will not be subject to water quality degradation due to stagnant water or loss of disinfectant residual.

The RTCR does not require specific practices regarding start-up procedures except that the start-up procedures must be completed prior to the PWS serving water to the public. States are given the flexibility to determine what start-up procedures are appropriate for a particular system based on its site-specific considerations. As mentioned, seasonal systems may be required to collect one or more coliform samples as part of the required start-up procedures. NCWSs should allow themselves sufficient time for completing start-up procedures (including receiving sample results) and notifying the state as required, prior to serving water to the public.

2.8.1 Routine Monitoring

All seasonal NCWSs must conduct monthly routine monitoring for all months they are in operation unless the system meets reduced monitoring criteria (see Section 2.8.4 “Reduced Monitoring” for details).

The RTCR allowed ground water seasonal NCWSs serving fewer than 1,000 persons to transition to the RTCR on April 1, 2016, with the monitoring frequency (e.g., quarterly, annual) that was in effect on March 31, 2016, for that particular system, unless the system triggers increased monitoring or the state requires the system to change its monitoring.

Seasonal NCWSs serving 1,000 or fewer people must collect at least one routine sample per month unless the state directs them to collect more samples in order to fully represent their distribution systems. Seasonal NCWSs serving more than 1,000 people must collect the minimum number of samples shown in Table 2-2 but the state may direct them to collect more samples in order to fully represent their distribution systems. Any TC+ routine monitoring sample must also be analyzed for *E. coli*.

2.8.2 Repeat Monitoring [40 CFR 141.858]

The RTCR requires PWSs to conduct repeat monitoring when a routine or repeat sample is TC+. PWSs must take at least one round of repeat samples for each TC+ routine sample and must continue to collect repeat samples until a TT-trigger occurs or a set of repeat samples is TC-negative. Once a coliform TT-trigger occurs the PWS can stop collecting repeat samples in response to additional TC+ repeat samples.

The PWS should be encouraged to notify the state when it incurs a TT-trigger. However, the PWS must notify the state by the end of the next business day if it incurs a TT violation and notify the public as a Tier 2 violation. For information on TT violations, see Section 5.2. Every routine or repeat TC+ sample must also be analyzed for *E. coli*.

Within 24 hours of being notified of a TC+ result, the NCWS must collect no fewer than three repeat samples for each TC+ routine or repeat sample, including:

- At least one repeat sample from the sampling tap where the original TC+ sample was taken;
- At least one repeat sample at a tap within five service connections upstream of the original sampling site or at an alternative location; and
- At least one repeat sample at a tap within five service connections downstream of the original sampling site or at an alternative location.

Every routine or repeat TC+ sample must also be analyzed for *E. coli*.

If a TC+ sample is collected from a sampling point at the end of the distribution system, or one service connection away from the end of the distribution system, the state may allow an alternative sampling location in lieu of the requirement to collect a repeat sample at the upstream or downstream location; however, the NCWS must still take at least three repeat samples. One of those repeat samples should represent as closely as possible the water quality near the location of the TC+ sample.

NCWSs must collect all repeat samples on the same day, except that a state may allow a NCWS with a single service connection to collect the required set of repeat samples over a 3-day period, or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 mL.

The state may extend the 24-hour limit for repeat monitoring on a case-by-case basis (i.e., if the NCWS has logistical problems beyond its control) and must specify the amount of time being granted for the extension. The state may not waive the requirement for a NCWS to collect repeat samples.

The repeat monitoring locations associated with each routine sampling location must be identified in the sample siting plan. NCWSs may propose alternative repeat monitoring locations (other than a site within five service connections upstream or within five service connections downstream from the original routine site), that a system believes to be representative of pathways for contamination of the distribution system. The NCWS must design its sample siting plan to identify repeat sampling at locations that best verify and determine the extent of potential contamination of the distribution system. The state has the discretion to modify the sample siting plan as necessary.

Note that seasonal NCWSs that must conduct triggered source water monitoring under the GWR must take ground water source sample(s) for GWR compliance in addition to repeat samples under the RTCR. See Section 2.8.7 for more information.

Note that if any repeat sample is TC+, the NCWS must ensure that the sample is also analyzed for *E. coli*. A repeat TC+ sample following a routine sample that is *EC+* is an MCL violation. If a routine sample is TC+/*E. coli*-negative and the repeat sample is *EC+*, the NCWS has also incurred an *E. coli* MCL violation. For more information on *E. coli* MCL violations, see Section 5.1. The NCWS must notify the state by the end of the day that the NCWS has been notified of the monitoring result that resulted in the MCL violation, unless the NCWS is notified after the state office is closed and the state does not have an alternative notification procedure (e.g., an emergency hotline or online notification system). In this case,

the NCWS must notify the state by the end of the next business day. The NCWS will also have to issue Tier 1 PN, which is described in more detail in Section 6.1.

2.8.3 Special Monitoring Evaluation

The state must perform a special monitoring evaluation during each sanitary survey for all ground water NCWSs, including seasonal systems, serving 1,000 or fewer people. The state must determine the appropriateness of the monitoring schedules (e.g., monthly, quarterly, annually) and sample sites. During the special monitoring evaluation, the state must evaluate water system factors such as pertinent water quality and compliance history, the establishment and maintenance of barriers to contamination and other appropriate protections to water quality. The special monitoring evaluation is used to validate the NCWS's existing monitoring locations, number of routine sample sites and sampling frequency and to allow for reduced monitoring or require more frequent monitoring, if necessary. After the state has performed the special monitoring evaluation during each water system's sanitary survey, the state may modify the NCWS's monitoring schedule as necessary. The state may not reduce monitoring following a special monitoring evaluation unless the NCWS has met the applicable criteria for reduced monitoring for ground water systems serving 1,000 or fewer people (outlined in 40 CFR 141.854(e) and discussed in Section 2.4.4 of this guidance).

The special monitoring evaluations are not anticipated to significantly increase the burden of conducting sanitary surveys because ground water systems serving 1,000 or fewer people are usually relatively simple, and the evaluation is performed during the routinely scheduled sanitary survey. Moreover, the information that will be assessed during the special monitoring evaluation should be evaluated to a great degree as part of a complete sanitary survey. Several of the eight required elements of a sanitary survey (i.e., distribution system and storage conditions, operator qualifications and performance, monitoring) should also be important considerations during the special monitoring evaluation.

States, in their primacy packages, must describe their procedures for performing special monitoring evaluations. For seasonal NCWSs on quarterly or annual monitoring, the special monitoring evaluation must include a review of the sample siting plan, which must designate the time period(s) for monitoring based on-site-specific conditions, such as periods of high demand or high vulnerability to contamination. See Sections 7.4.7 and 7.4.8 for additional information on the special primacy requirements for special monitoring evaluations and seasonal systems, respectively.

2.8.4 Reduced Monitoring

Reduced monitoring is allowed by the RTCR if the seasonal NCWS meets certain conditions and reduced monitoring is allowed by the state. States are not, however, required to adopt the reduced monitoring provisions. Seasonal systems using surface water or GWUDI of surface water that serve 1,000 or fewer people and any seasonal NCWS serving more than 1,000 people, are not eligible for reduced monitoring. Following start-up, seasonal NCWSs serving 1,000 or fewer people and using only ground water, may qualify to monitor quarterly if the system has:

- An approved sample siting plan that designates the time period for monitoring based on-site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). The system must collect the sample(s) during this time period.

- Within the last 12 months, had a complete sanitary survey, a site visit by the state or a voluntary Level 2 assessment by a party approved by the state; been free of sanitary defects; has a protected water source and meets approved construction standards.

- A clean compliance history for a minimum of 12 months, as defined in 40 CFR 141.2. EPA recommends that this 12-month period be 12 consecutive months. A clean compliance history is defined in the RTCR as having no *E. coli* MCL violations, no monitoring violations under the RTCR, and no coliform TT-trigger has occurred or TT violations has been incurred (which includes no violations for failure to conduct seasonal system start-up procedures).

For NCWSs using only ground water that serve 1,000 or fewer people in some months and more than 1,000 in other months, the state may allow these systems to reduce monitoring only during the months when the system serves 1,000 or fewer people. The state has the authority to determine how the transition to increased/decreased monitoring will occur in these situations. States do not need to describe how this transition will occur in their primacy package.

States have discretion in whether to consider monitoring violations when determining a TNCWS's compliance history and eligibility to qualify for quarterly monitoring. While the system still incurs a monitoring violation, states do not have to consider the violation when determining compliance history if the missed sample is collected no later than the end of the monitoring period following the monitoring period in which the sample was missed and the make-up sample is collected in a different week than the routine sample for that monitoring period [40 CFR 141.854(a)(4)]. Note that this provision is only available to TNCWSs and only when the state is determining whether the system has a clean compliance history. No other system types qualify and the TNCWS would still incur a monitoring violation.

To be eligible to monitor annually, a seasonal system serving 1,000 or fewer people and using only ground water must:

1. Have an approved sample siting plan that designates the time period for monitoring based on-site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). The system must collect the sample(s) during this time period.

2. Meet the criteria for reducing monitoring from monthly to quarterly (i.e., within the last 12 months had a complete sanitary survey, a site visit by the state or a voluntary Level 2 assessment by a party approved by the state; been free of sanitary defects; has a protected water source and meets approved construction standards).

3. Have a clean compliance history for a minimum of 12 months, as defined in 40 CFR 141.2. EPA recommends that this 12-month period be 12 consecutive months. A clean compliance history is defined in the RTCR as having no *E. coli* MCL violations, no monitoring violations under the RTCR, and no coliform TT-trigger has occurred or TT violations has been incurred, including no TT violations for failure to conduct seasonal system start-up procedures.

4. Have an annual site visit by the state and correct all sanitary defects. The system may substitute a voluntary Level 2 assessment by a party approved by the state for the state annual visit in any given year.

5. Have in place or be adopting one or more additional enhancements to the water system barrier to contamination including:

   - Cross-connection control, as approved by the state.

   - An operator certified by an appropriate state certification program or regular visits by a circuit rider certified by an appropriate state certification program.

   - Continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the state.

- Demonstration of maintenance of at least a 4-log removal or inactivation of viruses as provided for under 40 CFR 141.403(b)(3).
- Other equivalent enhancements to water system barriers as approved by the state.

2.8.5 Increased Monitoring

Certain conditions will trigger seasonal NCWSs on quarterly monitoring to increase to monthly monitoring and seasonal systems on annual monitoring to increase to quarterly or monthly monitoring.

- A system on quarterly monitoring must begin monthly monitoring the month after the system:
  - Triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period;
  - Incurs an *E. coli* MCL violation;
  - Incurs a coliform TT violation;
  - Incurs two RTCR monitoring violations in a rolling 12-month period; or
  - Incurs one RTCR monitoring violation and one Level 1 assessment in a rolling 12-month period.
- A system on annual monitoring must begin monthly monitoring the month after the system:
  - Triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period;
  - Incurs an *E. coli* MCL violation; or
  - Incurs a coliform TT violation.
- A system on annual monitoring must begin quarterly monitoring the quarter after the system incurs one monitoring violation.

2.8.6 Additional Routine Monitoring

The RTCR requires NCWSs that are not on monthly monitoring frequency to conduct additional routine monitoring the month following one or more TC+ samples (with or without a Level 1 TT-trigger). This additional routine monitoring consists of at least three samples in the month following the TC+ sample, collected at routine monitoring locations identified in the sample siting plan. This is a change from the TCR additional routine monitoring requirement of taking a total of five samples the month following a TC+ sample for NCWSs that take four or fewer samples per month. The RTCR provides states with the discretion to require all ground water systems to monitor monthly and thereby forgo the requirement for conducting additional routine monitoring.

Use of the word “additional” when describing these samples may be confusing. It is called “additional” because it is more than the usual number of routine samples that systems on quarterly or annual monitoring must take. NCWSs on quarterly or annual monitoring must take a total of at least three additional routine samples the month following a TC+ sample. NCWSs may collect the additional routine samples either at regular time intervals throughout the month or they may collect all three samples on a single day if the samples are taken from different locations. The results of these samples must be used in the calculation of the coliform TT-trigger. A NCWS must continue to take three additional routine samples each month until:

- Total coliforms are not detected. If all three additional routine samples are TC-negative, the system continues with its routine quarterly or annual monitoring frequency, unless directed by the state to remain on monthly monitoring.

- The monitoring results trigger the system into an increased monthly monitoring frequency, see Section 2.8.5. Note that additional routine samples that are TC+ require repeat samples and analysis for *E. coli*, as would be required if the PWS were on its routine monitoring schedule.

The state may waive the requirement to collect three additional routine samples the next month the NCWS serves water to the public if at least one of the following conditions is met:

- The state or a state-approved agent performs a site visit before the end of the next month in which the NCWS provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the state to determine whether additional monitoring and/or corrective action is needed. The state may not approve an employee of the NCWS to perform this site visit.

- The state has determined why the sample was TC+ and has established that the NCWS has corrected the problem or will correct the problem before the end of the next month that the NCWS serves water to the public. This decision must be documented by the state and approved and signed by the supervisor of the state official who recommends the decision. The decision document must be made available to EPA and the public upon request. The written documentation must describe the specific cause of the TC+ sample and what action(s) the NCWS has taken and/or will take to correct the problem.

- The state determines that the NCWS corrected the contamination problem before the NCWS took the set of required repeat samples, and all repeat samples were TC-negative. The state may not waive the requirement for additional routine monitoring solely on the grounds that all repeat samples were TC-negative.

2.8.7 Triggered Source Water Monitoring Under the GWR and Repeat Sampling Under the RTCR

Triggered source water monitoring is required under the GWR when a PWS using a ground water source, does not provide at least 4-log removal or inactivation of viruses for every entry point into the distribution system and is not required by the state to conduct GWR compliance monitoring to ensure 4-log removal or inactivation of viruses, and receives a TC+ sample result under the RTCR. The PWS must collect at least one ground water source sample from each source in use at the time the TC+ sample was collected [40 CFR 141.402(a)]. If the state does not require immediate corrective action in response to a fecal indicator-positive triggered source water sample under the GWR, PWSs must collect five additional source water samples (from the same source) within 24 hours of being notified of the fecal indicator-positive triggered source sample [40 CFR 141.402(a)(3)].

As per 40 CFR 141.853(a)(5)(ii), the state may allow a PWS with a single ground water well, serving 1,000 or fewer people, and required to conduct triggered source water monitoring under the GWR, to also use that source water sample as one of the repeat samples under the RTCR (commonly referred to as a dual purpose sample). If the state uses *E.coli* as the fecal indictor for GWR triggered source water monitoring and it approves dual purpose sampling the PWS must have written state approval to use this sample under the RTCR. [40 CFR 141.402(a)(2)(iv)]. In addition, the PWS must include in its RTCR sample siting plan the dual purpose sample site. The PWS must demonstrate that the sample siting plan remains representative of distribution system water quality. Once approved by the state, the PWS may use the sample result from the approved location to meet the monitoring requirements of both the GWR and

RTCR. Other required repeat samples under the RTCR must be taken at the locations specified in the RTCR sample siting plan. Note that a PWS with more than one ground water well or that serves more than 1,000 persons is not eligible for dual purpose sampling.

Requiring state approval for allowing these dual purpose samples (i.e., using the same sample to comply with the sampling requirements of the RTCR *and* the GWR) limits the practice only to PWSs that can conduct such monitoring without compromising public health protection. State approval is required under these circumstances because this constitutes a reduction in monitoring (i.e., no separate triggered source water samples), rather than requiring separate samples for compliance with the two rules. A reduction in monitoring is appropriate only if the state determines that the dual purpose sample provides comparable public health protection to that provided by separate repeat and source water samples.

A system with a single service connection and single sampling location for both the routine and repeat samples under the RTCR and the triggered source monitoring under the GWR, must classify all repeat samples as dual purpose samples if the state approves dual purpose sampling.

States should be aware that triggered source water monitoring samples under the GWR must be taken at the source prior to any treatment. States should ensure that any PWS approved to use a dual purpose sample designates the sample as both a source water sample under the GWR and a repeat sample under the RTCR.

Since dual purpose samples are used for compliance with both the RTCR and the GWR, there are consequences under both rules for having an *EC+* result. Table 2-6 summarizes the consequences for each Rule. The system may also have to issue PN in accordance with both the RTCR and the GWR.

Table 2-6. Consequences of *EC+* Various Results for Seasonal NCWSs Using a Dual Purpose Sample

Number of Dual Purpose Samples Taken	Result	Consequences Under RTCR	Consequences Under GWR
1 [40 CFR 141.853(a)(5)(ii)(A)]	*EC+*	• MCL violation • Level 2 assessment and associated corrective action(s)	Comply with 40 CFR 141.402(a)(3): • Take corrective action if directed by the state; or, • Collect five additional source water samples.
2 or 3 [40 CFR 141.853(a)(5)(ii)(A) and (B)]	1 *EC+*	• MCL violation • Level 2 assessment and associated corrective action(s)	Comply with 40 CFR 141.402(a)(3): • Take corrective action if directed by the state; or, • If two dual purpose samples were taken at the approved location, collect five or four additional source water samples [see RTCR 40 CFR 141.853(a)(5)(ii)(A)]; or, • If three dual purpose samples were taken at the approved location, collect five or three additional source water samples [see RTCR 40 CFR 141.853(a)(5)(ii)(A)].
2 or 3 [40 CFR 141.853(a)(5)(ii)(A) and (B)]	≥ 2 *EC+*	• MCL violation • Level 2 assessment and associated corrective action(s)	Comply with 40 CFR 141.403(a)(1) for GWR TT violation: • Corrective action required.

Note that if all repeat samples taken at the monitoring location required for triggered source water monitoring (i.e., at the source before treatment) are *E. coli*-negative, but a repeat sample taken at a

monitoring location in the distribution system is *EC+*, the NCWS has violated the *E. coli* MCL under the RTCR, but is not required to collect five additional source water samples under the GWR or comply with the GWR TT requirements (i.e., the sample from the distribution system is not a dual purpose sample).

2.9 Invalidation of a TC+ or *EC+* Distribution System Sample [40 CFR 141.853(c)]

The RTCR has not made substantive changes to the requirements of the TCR for invalidation of total coliform samples. The state must include in its primacy package a written procedure for the invalidation of routine and repeat RTCR samples. (See Section 7.4.5 for additional information on this special primacy requirement.) Systems must resample if the state invalidates a sample.

States can invalidate a TC+ sample if one of the following occurs:

- Improper sample analysis.
  - An improper sample analysis may be caused by a variety of situations, such as laboratory equipment malfunction, sample container leakage or breakage and contaminated negative control samples. For a state to invalidate a positive sample under this criterion, the laboratory itself must indicate that the analysis was improper. It may not be assumed by others that the laboratory erred. The PWS provides the state with written notice from the laboratory that improper sample analysis occurred, resulting in the TC+ sample. If it is a state laboratory, the laboratory may provide this documentation directly to the state. The capability of the laboratory to make this decision rests upon the fact that all laboratories analyzing compliance samples under the SDWA must be certified either by EPA or the state. A periodic on-site audit plays a major role in the EPA and state laboratory certification programs.
- Positive result due to domestic or non-distribution system plumbing problem.
  - The state can invalidate a sample if the results of a set of repeat samples suggest the problem is associated with a domestic or other non-distribution system plumbing problem. If any repeat sample is TC+ at the same tap as the original positive sample, but all other repeat samples at both the upstream and downstream service connections (i.e., within five service connections of the positive sample) are negative, there is a reasonable possibility that a domestic or other non-distribution system plumbing problem exists. This authority only applies if the positive routine sample is taken from a customer's premise. It does not apply if the sample is taken from a dedicated sampling station located in the distribution system, or if the system is a NCWS such as a school, a campground or a church that has control and ownership of its own facility and water system (in this case, even what is typically considered premise plumbing is under the control of the NCWS and is part of the NCWS's distribution system). A state may not invalidate a positive sample solely on the grounds that all repeat samples are negative, or if the system has only one service connection.
- Positive result does not reflect water quality in the distribution system.
  - The state can invalidate a TC+ sample based on evidence that the sample result is due to a circumstance or condition that does not reflect water quality in the distribution system (e.g., sample collection from a water hose or contamination of a sample by failure in the integrity of the container). The system must still collect all repeat samples and include the results in determining whether an assessment has been triggered. To invalidate a sample under this condition, the state must document the decision and supporting rationale, and have this decision be approved and signed by the supervisor of the state official who recommended the

invalidation. The written documentation must state the specific cause of the TC+ sample and the action(s) the PWS has taken or will take to correct the problem. This documentation must be made available to EPA and the public upon request. The state may not invalidate a TC+ sample solely on the grounds that all repeat samples are total coliform-negative.

Laboratories must invalidate a total coliform sample (unless total coliforms are detected) if the sample:

- Produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined (e.g., Multiple-Tube Fermentation Technique).
- Produces a turbid culture in the absence of an acid reaction in the Presence-Absence Coliform Test.
- Exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter (e.g., Membrane Filter Technique).

If a laboratory invalidates a sample for any of these reasons, the PWS must collect another sample from the same location as the original sample, and have it analyzed for the presence of total coliforms. The PWS must take this sample within 24 hours of being notified of the interference problem and must continue to re-sample/re-analyze the samples within 24 hours, until it obtains a valid result. The state may extend the 24-hour limit on a case-by-case basis if the PWS cannot collect the sample within 24 hours due to circumstances beyond its control. Instead of a case-by-case approach to extensions, the state may implement criteria for waiving the 24-hour sampling time limit. In the case of an extension, the state must specify how much time the PWS has to collect the sample.

States must keep records of any decisions to invalidate a TC+ sample for five years. The record of the decision must include the specific cause of the TC+ sample, what action the PWS has or will take to correct the problem and any other information needed to document the decision [as discussed above and in 40 CFR 142.14(a)(10)(i)(C)].

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Section 3

Treatment Technique Triggers and Assessment Requirements for All PWSs

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3.1 Treatment Technique (TT) Requirements [40 CFR 141.859]

The 1989 TCR does not require a system to perform any type of assessment following a monthly/non-acute MCL violation or an acute MCL violation. The "acute" total coliform MCL violation under the 1989 TCR has been maintained as the MCL for *E. coli* under the RTCR, while the non-acute MCL violation for total coliforms under the TCR is replaced by a TT requirement to conduct an assessment. Failure to conduct the assessment is a TT violation. Under the new TT requirement for coliforms, total coliforms serve as an indicator of a potential pathway of contamination into the distribution system. A PWS that exceeds a specified frequency of total coliform occurrence must conduct an assessment to determine if any sanitary defects exist, and if found, correct them. In addition, under the new TT requirements, a PWS that incurs an *E. coli* MCL violation must conduct an assessment and correct any sanitary defects found. EPA established this assessment process in the RTCR to improve rule effectiveness and increase public health protection against waterborne pathogens in the public drinking water distribution systems.

The RTCR specifies two levels of TT-triggers and corresponding levels of assessment (Level 1 and Level 2) in response to those triggers. The degree and depth to which a PWS must examine its system, including monitoring and operational practices, depends on the TT-trigger's potential impact to public health. In short, a Level 2 assessment requires a more in-depth and comprehensive review of the PWS compared to a Level 1 assessment.

3.1.1 TT-Triggers

The system has exceeded the TT-trigger immediately after any of the following trigger conditions have been met:

- Level 1 TT-triggers:
  - For systems taking 40 or more samples (including routine and repeat samples) per month, the PWS exceeds 5.0 percent TC+ samples for the month;
  - For systems taking fewer than 40 samples (including routine and repeat samples) per month, the PWS has two or more TC+ samples in the same month; or
  - The PWS fails to take every required repeat sample after any single routine TC+ sample.

The first two Level 1 TT-triggers are the same conditions that define a non-acute MCL violation under the 1989 TCR. The third trigger provides an incentive for systems to take their repeat samples to ensure that they are assessing the extent of the total coliform contamination; failure to take the repeat samples means the system must conduct an assessment instead to ensure there are no pathways to contamination (i.e., sanitary defects).

- Level 2 TT-triggers:
  - The PWS has an *E. coli* MCL violation (see Section 5.1 of this guidance);
  - The PWS has a second Level 1 TT-trigger within a rolling 12-month period unless the state has determined that the PWS found the sanitary defect that likely caused the first Level 1 TT-trigger, and the PWS corrected or fixed the sanitary defect before the second Level 1 TT-trigger occurred. With the state's approval, the system would not trigger a Level 2 assessment but would need to conduct a second Level 1 assessment; or,

– For PWSs with approved reduced annual monitoring, the system has a Level 1 TT-trigger in two consecutive years.

3.1.2 Sanitary Defects and Corrective Action

Under the RTCR, PWSs must correct any sanitary defects found through either a Level 1 or Level 2 assessment.

A sanitary defect is "a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place" (40 CFR 141.2).

Systems should ideally be able to correct, within 30 days after learning that it has exceeded the trigger, any sanitary defects found during an assessment and report on an assessment form required by the state that the corrective actions have been completed. See Section 3.2.2 for additional information on assessment forms. This is especially important when *E. coli* has been detected in samples collected from the distribution system, indicating that a potential health hazard exists.

EPA recognizes, however, that correcting sanitary defects within 30 days may not always be possible due to the extent and cost of the corrective action, and that therefore, some systems may not be able to fix sanitary defects before submitting the completed assessment form within the 30-day requirement. When the correction of sanitary defects is not completed by the time the PWS submits the completed assessment form to the state, EPA encourages the state and PWS to work together to determine the appropriate schedule for completing corrective actions (which may include additional or more detailed assessment or engineering studies), keeping in mind that all corrective actions should be completed as soon as feasible.

To ensure that corrective actions are completed correctly, and that the corrective actions resolve all sanitary defects, EPA encourages the state to require additional follow-up total coliform samples after a PWS certifies that corrective actions have been completed. Additional sampling will enhance public health protection by either indicating that there are additional sanitary defects that were not initially identified or confirming that all sanitary defects have been resolved. The state may include additional total coliform sampling as a part of the assessment and corrective actions process; however, without other required corrective actions, additional follow-up total coliform sampling in itself is not completely sufficient to address identified sanitary defects.

3.1.3 Coliform TT Violations

A system incurs a coliform TT violation when any of the following occurs:

- A system fails to conduct a Level 1 or Level 2 assessment within 30 days after learning that it has exceeded the trigger;
- A system fails to correct any sanitary defect found through either a Level 1 or 2 assessment within 30 days or in accordance with a schedule acceptable to the state; or
- A seasonal system fails to complete state-approved start-up procedures prior to serving water to the public. More information on recommendations for state-approved start-up procedures can be found in Section 7.4.8.4 of this manual.

There is no TT violation associated solely with a system exceeding one or more action triggers (Level 1 or Level 2).

More information on Level 1 and 2 assessments, sanitary defects and corrective action can be found in Section 3.2 of this guidance and also in the *Revised Total Coliform Rule Assessments and Corrective Actions Guidance Manual Interim Final*. EPA 815-R-14-006. September 2014. Available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-assessments-and-corrective-actions.

3.2 Assessment Practices, Procedures and Follow-up [40 CFR 141.859]

As indicated in Section 3.1, there are two levels of assessments based on the associated TT-trigger:

- Level 1 assessment for a Level 1 TT-trigger, and
- Level 2 assessment for a Level 2 TT-trigger.

Assessments are conducted in order to identify the possible presence of sanitary defects and defects in distribution system monitoring practices, including those defects that may have caused TC+ samples and triggered the assessment. A Level 1 assessment must be conducted by the PWS, unless the state specifies otherwise. Level 2 assessments must be conducted by parties approved by the state. All assessments must be completed as soon as practical and no later than 30 days after the PWS learns it has exceeded a TT-trigger. In its primacy package, the state must demonstrate that it has the legal authority to require Level 1 and 2 assessments and the corresponding corrective actions. States may identify the resources that will be needed to meet the TT requirements given the estimated number of affected PWSs, follow-up technical assistance, enforcement actions and other associated program demands.

A PWS must complete a Level 1 or Level 2 assessment (and required corrective actions) for each triggered event because the contamination causing the second trigger may be due to a different sanitary defect. If the PWS discovers that the contamination continues to be caused by the original triggering event, the PWS can perform interim measures to ensure the delivery of safe water, but the PWS is still required to conduct an assessment for each TT-trigger. The PWS would incur a TT violation for each uncompleted Level 1 or Level 2 assessment.

In addition, if the PWS finds additional sanitary defects during the subsequent assessments, the PWS must correct them. If the PWS fails to correct newly identified sanitary defects within the state-approved timeframe, it incurs a TT violation for each uncorrected sanitary defect.

See the scenarios in Section 3.3 for additional details.

3.2.1 Assessment Elements

The RTCR definitions of both a Level 1 and Level 2 assessment include the minimum elements that must be evaluated [40 CFR 141.2]. The *Revised Total Coliform Rule Assessments and Corrective Actions Guidance Manual* also provides more details about the elements that must be evaluated during an assessment. At a minimum, both Level 1 and 2 assessments must include review and identification of the following elements:

- Atypical events that may affect distributed water quality or indicate that distributed water quality was impaired.
- Changes in distribution system maintenance and operation that may affect distributed water quality, including water storage.
- Source and treatment considerations that bear on distributed water quality, where appropriate.

- Existing water quality monitoring data.
- Inadequacies in sample sites, sampling protocol and sample processing.

The assessment must be conducted in accordance with any additional state requirements including requirements that tailor specific assessment elements with respect to the size and type of the treatment system, and the size, type, and characteristics of the distribution system. States should require any additional assessment elements that are appropriate, taking into consideration the types of PWSs in the state and the Public Water System Supervision (PWSS) program procedures and objectives.

3.2.2 Assessment Forms

PWSs must submit a completed assessment form to the state within 30 days of learning that it has exceeded a TT-trigger. The assessment form must describe sanitary defects detected, corrective actions completed and a proposed timetable for any corrective actions not already completed.

If a PWS triggers more than one assessment in a month, the PWS must submit a completed form for each assessment within 30 days after the PWS learned that it has exceeded the TT-trigger. Alternatively during consultation between the state and the PWS, the state could determine to combine multiple assessments triggered within one month, however the higher level assessment (i.e., Level 2) would need to be completed by the due date of the first TT-trigger. The state can use discretion and instruct the PWS on what to "complete" on the forms. If the state reviews the completed forms and determine the assessment is not sufficient, the state must consult with the system. If the state requires revisions after consultation, the PWS must submit a revised assessment form to the state on an agreed upon schedule not to exceed 30 days from the date of the consultation. [40 CFR 141.859(b)(3)(ii); 40 CFR 141.859(b)(4)(iii)]. These decisions should be made in consultation with the system to demonstrate the best professional judgment in the interest of public health (see Sections 3.3 and 8.4 for recommended approaches).

The *Revised Total Coliform Rule Assessments and Corrective Actions Guidance Manual* provides example assessment forms. States can allow PWSs to use these forms or may develop their own forms. The assessment form should serve as a workable checklist for the evaluation.

If the state develops its own forms, they should be designed to, among other things, cover the appropriate components of a PWS and provide suggestions to the assessor on which items to evaluate during the assessment. Since each PWS is different (e.g., source water type, distribution system configuration and number and type of distribution system facilities), assessors should use professional judgment when completing the assessment forms and provide the necessary information to support conclusions, if warranted. Where appropriate, assessors may note when no sanitary defects are found; however, the state makes the final determination on the adequacy and completeness of the provided information and documentation.

In all cases, the state must determine the sufficiency of the assessment regardless of whether the system has identified any sanitary defects or a likely cause for the TT-trigger. If the state determines that the assessment was not sufficient, the state must discuss its concerns with the system [40 CFR 141.859(b)]. The state may require revisions to the assessment after the consultation. The state must determine if the PWS has identified the probable cause(s) of the TT-trigger and, if so, has corrected the problem(s) or included an acceptable schedule for correcting the problem.

States should work with PWSs to familiarize the systems with the required assessment forms so they will be better prepared to complete an assessment and submit the required documentation if necessary. One way to prepare, besides reviewing the required forms, is to encourage systems to develop an SOP for what to do when TC+ results triggers a Level 1 or Level 2 assessment. The SOP should include a step

where PWSs verify with the state whether there is a specific required assessment form and confirm which data source(s) are needed to complete the form.

3.2.3 Consultations

As specified in the RTCR, at any time during the assessment or corrective action phases, either the PWS or the state may request a consultation with the other party to determine appropriate actions. The PWS may consult with the state on all relevant information that may impact its ability to comply with the assessment and corrective action requirements, including the method of accomplishment, an appropriate timeframe and other relevant information. The state must consult with the PWS whenever it determines that the assessment is insufficient, and if the state requires revisions after the consultation, the PWS must submit a revised assessment form on an agreed-upon schedule not to exceed 30 days from the date of the consultation. In planning the resources needed to implement the Rule, states should consider how they will use the consultation process to help PWSs meet rule requirements.

3.2.4 Level 1 Assessments

A Level 1 assessment must be conducted when a PWS exceeds any of the Level 1 TT-triggers. Under the Rule, this self-assessment consists of a basic examination of the source water, treatment, distribution system and relevant operational practices, often using existing data and information. The PWS should look at conditions that could have caused the TC+ sample. Example conditions include treatment process interruptions, loss of pressure, maintenance and operation activities, recent operational changes, etc. In addition, the PWS should check the conditions of sample sites, the distribution system, storage tanks, source water, etc.

3.2.4.1 Level 1 Assessors

A Level 1 assessment should be conducted or managed by a responsible party of the PWS (e.g., a certified operator for a CWS or a manager for a NCWS). The assessor should be someone familiar enough with the PWS to be able to answer the questions in the Level 1 assessment form or gather pertinent or correct information from others who work for the PWS. A Level 1 assessment can be performed by an individual who does not have an operator's license (e.g., small PWS owner or staff); however, an individual without an operator's license may need to consult with someone who has more expertise in conducting assessments. The PWS may use the services of technical assistance providers, consult with operators at other systems, or consult with the state. For very small PWSs, such as those with a limited distribution system, states may even work with the PWS to complete the assessment via telephone.

The assessment must be consistent with state requirements so systems should check with their states to make sure that they have the appropriate person conducting the Level 1 assessment. States may wish to consider establishing operator certification requirements at PWSs for Level 1 assessors, or states may decide to conduct some Level 1 assessments depending on the PWS or the circumstances of the positive samples. If the state intends to perform all or some of the Level 1 assessments, the state in its primacy application may explain the circumstances under which the state will assume this responsibility.

3.2.5 Level 2 Assessments

A PWS must complete a Level 2 assessment when the system exceeds one or more of the Level 2 TT-triggers. The Level 2 assessment is a more comprehensive examination of the system and its monitoring and operational practices than the Level 1 assessment. The elements of a Level 2 assessment are generally the same as those of a Level 1 assessment, but each element is investigated in more detail. Depending on the circumstances, a Level 2 assessment may need to include field investigations, additional sampling and

additional inspections of facilities. The level of effort and resources committed to undertaking a Level 2 assessment is commensurate with the more comprehensive investigation and review of available information, and may involve the engagement of additional parties and expertise relative to the Level 1 assessment. The PWS must also comply with any expedited actions or additional actions required by the state in the case of an *E. coli* MCL violation.

3.2.5.1 Level 2 Assessors

Level 2 assessments must be conducted by a third-party approved by the state, the state itself, or the PWS if the system has staff or management with the required certification or qualifications required by the state. Level 2 assessors must follow the state requirements for conducting the Level 2 assessment. Level 2 assessments are tools for determining whether a public health threat exists or if there is a significant problem with the system that may be beyond the ability of the PWS to identify.

Examples of the parties that a state may approve to conduct a Level 2 assessment include:

- Primacy agency or local government personnel.
- Operators certified by the state at the appropriate level for a PWS of similar size, type and complexity.
- Circuit riders or technical assistance providers under contract with the state or other government agency.
- Utility supervisor or manager supported by various utility experts.
- Consultant/consulting engineer.

States have the discretion to determine the qualifications a Level 2 assessor must meet and the process for approving them. States may want to maintain a list of qualified assessors that can be provided to PWSs if a Level 2 assessment is triggered. The list will reduce the amount of time it will take for a PWS to identify an appropriate assessor, given the size and complexity of the system. When a Level 2 assessment is triggered, the PWS should clarify and resolve any uncertainties they may have about the required qualifications of the assessor by consulting with the state before the assessment takes place.

If a state chooses to approve third-party Level 2 assessors, certain qualifications should be met. The assessor should have, among other things:

- An understanding of the objectives and structure of the RTCR.
- An understanding of the nature of the coliform group and *E. coli*, including its sources, control and public health significance.
- A familiarity with bacteriological sampling practices.
- A working knowledge of how to interpret:
  - Distribution system water quality data.
  - Distribution system operational data.
  - Source of supply data.

- An understanding of disinfection practices and the potential implications of changes in disinfection practices.
- Familiarity with the PWS.
- Certification at the level appropriate to the PWS type and size.

In general, the assessor needs a "working knowledge" to oversee the evaluation of all of the elements covered by the Level 2 assessment. The depth of understanding and knowledge required will depend on the complexity of the PWS being assessed. For example, a small PWS with only a well, storage tank and limited distribution system will require a different level of expertise than a large metropolitan PWS. While both have operational data, in one case the assessor may be interpreting information that has been manually recorded (e.g., from a pressure gauge), while in the other case the assessor may need a working familiarity with supervisory control and data acquisition (SCADA) systems.

It is important to recognize that, in some cases, one individual may not have all the expertise required and a team approach may be needed. It is also worth noting that utilities may gain value from having someone outside their PWS provide a fresh set of eyes. The state may wish to consider allowing certified operators with the appropriate qualifications to conduct Level 2 assessments at other PWSs.

Regardless of who performs the assessment, it is the responsibility of the PWS to ensure that the assessment is completed according to the required schedule and conditions, and that all of the required documentation is submitted on time.

3.2.6 Integrated Assessments

A system may use the requirements of other applicable rules, such as the sanitary survey requirement of the GWR, to satisfy the assessment requirements of the RTCR, as long as the system meets the requirements of 40 CFR 141.859(b)(2), the timeframe requirements to complete the sanitary survey within 30 days of the assessment trigger and any state requirements. For example, assessments at PWSs with limited or no distribution systems will be relatively simple assessments and can be tailored to meet applicable requirements of both the GWR and the RTCR. See the *Revised Total Coliform Rule Assessments and Corrective Actions Guidance Manual* for additional information.

3.2.7 Primacy Application Requirements and Considerations

The state primacy application must include a description of the process for implementing the assessment and corrective action phases of the Rule, including:

- Required elements of both the Level 1 and Level 2 assessments. As well as an explanation of how the state will ensure that Level 2 assessments provide a more detailed examination of the system through the use of more comprehensive investigation and review of available information, additional internal and external resources and other relevant practices.
- Examples of sanitary defects.
- Examples of assessment forms or formats.
- Methods that systems may use to consult with the state on appropriate corrective actions.
- The criteria and process for approval of Level 2 assessors.

Additional information about primacy requirements can be found in Section 7 of this guidance.

3.3 TT-Trigger and Assessment Scenarios

NOTE: As these scenarios illustrate, there is no one way to handle the situations presented. It is therefore important for the PWS to communicate and work with the state on the onset so that actions can be coordinated. The assessment form is not a mere paper exercise for compliance, it is a tracking tool. The assessment requirements were put in-place to protect public health and that should always guide how a contamination event is handled.

Assessment Scenario 1: TC+ Routine and Repeat Samples in One Month

PWS Description – Super City

- Surface water CWS serving 4,000 persons.
- Collects four coliform samples a month.
- Sample siting plan documents the system taking one sample each week.

Situation

Sample date	Sample results
April 3	Routine sample: TC+/*E. coli*-negative Repeat sample 1: TC+/*E. coli*-negative - Repeat sample 2: TC+/*E. coli*-negative Repeat sample 3: TC+/*E. coli*-negative

On April 3rd, the system learns that the first of four monthly coliform samples and subsequent three repeat samples are all TC+. The system analyzed all of the TC+ samples for *E. coli* and all samples were *E. coli*-negative. Since two or more samples (calculated from routines and repeats) are TC+/*E. coli*-negative, the system triggered a Level 1 assessment [40 CFR 141.859(a)(1)(ii)]. The Level 1 assessment must be completed and the form submitted to the state by May 3rd (within 30 days from April 3rd). Note: Once the system triggered the Level 1 assessment it does not take more repeat samples due to the positive repeats.

Sample date	Sample results
April 10	Routine sample: TC+/*E. coli*-negative Repeat sample 1: TC+/*E. coli*-negative Repeat sample 2: TC+/*E. coli*-negative Repeat sample 3: TC+/*E. coli*-negative

A week later, on April 10th, the PWS learns its second RTCR routine sample and three repeat samples are TC+. The system analyzed all of the TC+ samples for *E. coli* and all samples were *E. coli*-negative. The PWS recognizes there is a problem and calls the state for a consultation to determine the appropriate actions to take [40 CFR 141.859(d)]. The state determined since the PWS has had a clean compliance history and samples are *E. coli*-negative, it will not elevate the actions. Note: For each positive routine sample the system must take at least three repeat samples even if a TT-trigger occurred.

Sample date	Sample results
April 17	Routine sample: TC+/*E. coli*-negative Repeat sample 1: TC+/*E. coli*-negative Repeat sample 2: TC+/*E. coli*-negative Repeat sample 3: TC+/*E. coli*-negative

Then in week three on April 17th, the samples are again all TC+ and *E. coli*-negative. The PWS consults with the state again on the actions it should take. At this point, since the contamination problem persists and the level 1 assessment is still ongoing, the state instructs the PWS to expand the scope and area covered by the Level 1 assessment (this is appropriate because the samples taken on April 10th and 17th came from a physically and/or hydraulically separate parts of the distribution system).

Other approaches the state could have taken: The state could have escalated the Level 1 assessment to a Level 2 assessment in consultation with the PWS [40 CFR 141.859(d)]. A Level 2 assessment allows for a more comprehensive examination of the system and its monitoring and operational practices than the Level 1 assessment. A Level 2 assessor may see something the system is missing. If the PWS is directed to conduct a Level 2 assessment in-place of the Level 1, it must be conducted and the completed form submitted by May 3rd (within 30 days from the initial TT-trigger date of April 3rd). Or, the state could instruct the PWS to complete the Level 1 assessment by May 3rd and complete a Level 2 assessment on a state approved timeframe.

Note: A second Level 1 TT-exceedance is not triggered due to each week's TC+ and *E. coli*-negative sample result in the same month. The intent of the requirements under 40 CFR 141.859(a) is that the system incurs one discrete TT-trigger per provision in one month. For instance, if the system triggers a Level 1 assessment due to 40 CFR 141.859(a)(1)(ii), it does not trigger another Level 1 assessment due to this provision within the same month. However, if the system triggers 40 CFR 141.859(a)(1)(ii) and 40 CFR 141.859(a)(1)(iii) -- failed to take all repeat samples -- in the same month, it has triggered two separate TT provisions. In this case, the system must conduct both a Level 1 and Level 2 assessment, or consult with the state for approval to combine the assessments. If combined, the system must conduct the higher level assessment (Level 2). The PWS should consult with the state to determine the best action in the interest of public health [40 CFR 141.859(d)].

Sample date	Sample results
April 24	Routine sample: TC+/*E. coli*-negative Repeat sample 1: TC+/*E. coli*-negative Repeat sample 2: TC+/*E. coli*-negative Repeat sample 3: TC+/*E. coli*-negative

Unfortunately, on April 24th, the last compliance samples for the month also came back TC+/*E. coli*-negative. Super City has consulted with the state and was in the midst of finishing its Level 1 assessment and found several sanitary defects that they determined were the likely cause of the TC occurrence problems. Upon fixing the problems, special purpose samples were TC-negative. The PWS submitted its completed Level 1 assessment form by May 3rd.

NOTE: If the state determines that the assessment is not sufficient, the state must notify Super City of the required corrective/follow-up actions and determine a schedule for completing these actions. The system must submit a revised Level 1 assessment form to the state on an agreed upon schedule not to exceed 30 days from the date of the consultation.

Assessment Scenario 2: Multiple TT-Triggers in One Month

PWS Description – High Point

- Ground water NCWS serving ≤ 1,000 persons.
- Collects one coliform sample a quarter.

Situation

Sample date	Sample results
May 10th	Routine sample: TC+/*E. coli*-negative Repeat sample 1: TC+/*E. coli*-negative Repeat sample 2: TC+/*E. coli*-negative Repeat sample 3: TC+/*E. coli*-negative

On May 10th, the PWS learns that its routine and subsequent three repeat samples are TC+. The PWS analyzed all of the TC+ samples for *E. coli* and all samples were *E. coli*-negative.These results trigger a Level 1 assessment under 40 CFR 141.859(a)(1)(ii). The assessment must be conducted and a completed form submitted to the state by June 9th. Also, the RTCR requires any NCWS that is not on a monthly monitoring frequency to conduct additional routine monitoring the month following one or more TC+ samples.

High Point completes and submits its Level 1 assessment form on June 10th.

Sample date	Sample results
June 15th	Additional routine 1: TC+/*E. coli*-negative Additional routine 2: TC+/*E. coli*-negative Additional routine 3: TC+/*E. coli*-negative

High Point collects the additional routine samples in one day because the samples are taken from different locations. On June 15th, the PWS learns that all routine samples are TC+. Since two or more of the additional routine samples are TC+, these results cause a Level 1 TT-trigger in June [40 CFR 141.859(a)(1)(ii)]. However, because this is the second Level 1 TT-triggered in a rolling 12 months (i.e., one in May and another in June), it must conduct a Level 2 assessment as required under 40 CFR 141.859(a)(2)(ii). Unless, the state determines that the PWS has found the sanitary defect that likely caused the first Level 1 TT-trigger, and the PWS has corrected or fixed the sanitary defect before the second Level 1 TT-trigger occurred. The Level 2 assessment (or Level 1 assessment if approved by the state) must be completed and the applicable form submitted to the state, by July 15th. In addition, High Point is triggered into increased monitoring [141.854(f)] and must take monthly samples, starting in July, for a minimum of 12 consecutive months.

Note: The PWS would stop taking "additional routine" samples in July since the system was triggered into increased routine monthly monitoring [40 CFR 141.854(f)]. And, High Point can return to quarterly monitoring once it has completed 12 consecutive months of monthly sampling and meets the other criteria in 40 CFR 141.854(g).

By June 16th, High Point fails to take all the required repeat samples for each TC+ "additional routine" sample. High Point should have collected a total of nine repeat samples and it collected only three. Each routine TC+ sample requires at least three repeat samples even if an assessment is triggered. Therefore, High Point has triggered its 3rd Level 1 TT-trigger in a rolling 12 month period (i.e., one in May and two

in June). Therefore, High Point would be required to conduct a Level 1 assessment by July 16th. However, the PWS consults with the state, and the state directs High Point to combine and expand the on-going Level 2 assessment (triggered on June 15th) to include the Level 1 TT-trigger (due to failure to collect all repeats). Since the state approved combining the assessments, High Point must still submit a completed Level 1 form and the Level 2 assessment form to track each TT-trigger as required under 40 CFR 141.859(b)3(i). For this scenario, forms must be submitted by July 15th. [See Section 8.4, Q34 for other scenarios].

The state can use discretion and instruct the PWSs on what to "complete" on both forms. If the state reviews the completed forms and determines the assessment is not sufficient, the state must consult with the system. If the state requires revisions after consultation, the PWS must submit a revised assessment form to the state on an agreed upon schedule not to exceed 30 days from the date of the consultation. [40 CFR 141.859(b)(3)(ii); 40 CFR 141.859(b)(4)(iii)]. These decisions should be made in consultation with the system to demonstrate the best professional judgment in the interest of public health.

Summary of Required Assessments and Due Dates for High Point

Assessment	Trigger	Assessment Due Date
Level 1 assessment	May 10th routine sample and subsequent repeat samples	June 9th
Level 2 assessment (second Level 1 assessment in a 12-month period requires a Level 2 assessment)	June 15th additional routine samples	July 15th
Level 1 assessment	Failure to collect repeat samples for TC+ additional routine samples on June 15th	July 15th

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Section 4

Reporting and Recordkeeping Requirements for PWSs and States

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4.1 PWS Reporting Requirements [40 CFR 141.861(a)]

Table 4-1 presents the reporting requirements for PWSs under the RTCR.[4]

Table 4-1. PWS Reporting Requirements to the State Under the RTCR

PWS Requirements for Reporting to the State	Rule Citation
In addition to the requirements of 40 CFR 141.31, PWSs must provide the following information to the state:	40 CFR 141.861(a)
PWSs that have violated the *E. coli* MCL: Must report the violation to the state no later than the end of the day when the PWS learns of the violation, unless the PWS learns of the violation after the state office is closed and the state does not have either an after-hours phone line or an alternative notification procedure, in which case the PWS must notify the state before the end of the next business day.	40 CFR 141.861(a)(1)(i)
PWSs with an *EC+* routine sample: Must notify the state no later than the end of the day when the PWS learns of the result, unless the PWS learns of the result after the state office is closed and the state does not have either an after-hours phone line or an alternative notification procedure, in which case the PWS must notify the state before the end of the next business day.	40 CFR 141.861(a)(1)(ii)
PWSs that have violated the TT for coliforms (Level 1 or 2 assessments and associated corrective actions): Must report the violation to the state no later than the end of the next business day after the PWS learns of the violation.	40 CFR 141.861(a)(2)
PWSs that must conduct a Level 1 or 2 assessment: Must submit a completed assessment report to the state within 30 days after the assessment is triggered.	40 CFR 141.861(a)(3)
PWSs completing corrective actions after submittal of the assessment report: Must notify the state when each scheduled corrective action is completed according to a state-approved schedule (determined in consultation between the state and the PWS).	40 CFR 141.861(a)(3)
PWSs that fail to comply with a coliform monitoring requirement: Must report the monitoring violation to the state within 10 days after the PWS discovers the violation.	40 CFR 141.861(a)(4)
Seasonal PWSs: Must send certification to the state that they have complied with the state-approved start-up procedures, prior to serving water to the public.	40 CFR 141.861(a)(5)

[4] The RTCR applies to all PWSs, except for those excluded from regulation by Section 1411 of the SDWA (42 U.S.C. 300g) and those subject to the Aircraft Drinking Water Rule (40 CFR 141, Subpart X). See Section 1.3.1 for additional information on applicability of the Rule.

4.2 PWS Recordkeeping Requirements [40 CFR 141.861(b)]

Table 4-2 presents the recordkeeping requirements for PWSs under the RTCR.

Table 4-2. PWS Recordkeeping Requirements Under the RTCR

PWS Recordkeeping Requirements	Rule Citation
In addition to the requirements of 40 CFR 141.33, PWSs must maintain the following information in their records:	40 CFR 141.861(b)
Copies of assessment forms for any Level 1 or 2 assessments, regardless of who conducted the assessment. Systems must keep assessment forms for a period of not less than five years after completion of the assessment.	40 CFR 141.861(b)(1)
Documentation of corrective actions completed as a result of assessments. Systems must keep documentation for a period of not less than five years after completion of the corrective action.	40 CFR 141.861(b)(1)
Other available summary documentation of sanitary defects and corrective actions. Systems must keep documentation for a period of not less than five years after completion of the assessment or corrective action.	40 CFR 141.861(b)(1)
Records of any repeat samples taken that meet the state's criteria for an extension of the 24-hour period for collecting repeat samples.	40 CFR 141.861(b)(2)

4.3 State Reporting Requirements [40 CFR 142.15(c)(3)]

In accordance with 40 CFR 142.15, EPA currently requires states to report to EPA information such as violations, variance and exemption status and enforcement actions. Table 4-3 describes the additional reporting requirements for states under the RTCR. Section 7.5.3 of this guidance manual provides information on updating data management systems for the RTCR.

Table 4-3. State Reporting Requirements to EPA Under the RTCR

State Requirements for Reporting to EPA	Rule Citation
For total coliforms under the RTCR, the state must report: • A list of each CWS that the state is allowing to monitor less frequently than once per month, including the applicable date (i.e., quarter in which the CWS begins reduced monitoring). • A list of each NCWS that the state is allowing to monitor less frequently than once per quarter, including the applicable date (i.e., year in which the NCWS begins reduced monitoring).	40 CFR 142.15(c)(3)

4.4 State Recordkeeping Requirements [40 CFR 142.14]

In addition to the state recordkeeping requirements in Table 4-4, EPA recommends that states also maintain records of complete sanitary surveys related to any decisions to reduce the total coliform monitoring frequency for a PWS serving 1,000 or fewer people and using only ground water. In accordance with 40 CFR 141.33(c), systems must maintain copies of any written reports, summaries or communications relating to sanitary surveys for a period not less than 10 years after completion of the survey.

Table 4-4. State Recordkeeping Requirements Under the RTCR

State Recordkeeping Requirements	Rule Citation
Records of routine, repeat or special microbiological analyses shall be retained for not less than 1 year.	40 CFR 142.14(a)(1)-(2)
Records of each of the following decisions or activities made pursuant to the provisions of the RTCR must be made in writing and retained by the state for not less than five years:	40 CFR 142.14(a)(10)
Records of decisions to waive the 24-hour time limit for collecting repeat samples after a TC+ routine sample, or to extend the 24-hour limit for collection of samples following invalidation, or for unfiltered surface or GWUDI (i.e., Subpart H) systems to collect a total coliform sample following a turbidity measurement exceeding 1 NTU.	40 CFR 142.14(a)(10)(i)(A)
Records of decisions to allow a PWS on a quarterly or annual frequency to waive the requirement for three additional routine samples the month following a TC+ sample.	40 CFR 142.14(a)(10)(i)(B)
Records of decisions to invalidate a TC+ sample.	40 CFR 142.14(a)(10)(i)(C)
Records of completed and approved RTCR assessments, including reports from the PWS that corrective action has been completed as required by 40 CFR 141.861(a)(2).	40 CFR 142.14(a)(10)(i)(D)
Records of each of the following decisions must be retained in such a manner so that each PWS's current status may be determined:	40 CFR 142.14(a)(10)(ii)
Records of decisions to reduce the total coliform monitoring frequency for a NCWS using only ground water serving 1,000 or fewer people to less than once per quarter, including what the reduced monitoring frequency is; and for a CWS serving 1,000 or fewer people to less than once per month. A copy of the reduced monitoring frequency must be provided to the PWS.	40 CFR 142.14(a)(10)(ii)(A)-(B)
Records of decisions to reduce the total coliform monitoring frequency for a NCWS using only ground water and serving more than 1,000 people during any month the PWS serves 1,000 or fewer people. A copy of the reduced monitoring frequency must be provided to the PWS.	40 CFR 142.14(a)(10)(ii)(C)
Records of decisions to allow a PWS to forgo *E. coli* testing of a TC+ sample if that PWS assumes that the TC+ sample is EC+.	40 CFR 142.14(a)(10)(ii)(D)

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Section 5

Violations

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5.1 *E. coli* MCL Violations

A PWS is in violation of the *E. coli* MCL if:

- A PWS has an *EC*+ repeat sample following a TC+ routine sample;
- A PWS has a TC+ repeat sample following an *EC*+ routine sample;
- A PWS fails to take all required repeat samples following an *EC*+ routine sample; or
- A PWS fails to test for *E. coli* when any repeat sample tests positive for total coliform.

Table 5-1. *E. coli* MCL Violation Determination Guide Based on Sample Results

Sample Result Type: ROUTINE	Sample Result Type: REPEAT	*E. coli* MCL Violation
EC+	TC+	YES
EC+	Any missing repeat sample	YES
TC+	EC+	YES
TC+	TC+ (but no *E. coli* analyses)	YES

E. coli MCL violations require the system to issue Tier 1 PN (40 CFR Appendix A to Subpart Q).

The state has the discretion to allow a PWS, on a case-by-case basis, to forgo *E. coli* testing on a TC+ sample if that PWS assumes that the TC+ sample is *EC*+. The PWS must notify the state by the end of the day that the PWS is notified of the positive result, unless the PWS is notified after the state office is closed and the state does not have an alternative notification procedure (e.g., an emergency hotline or online notification system). In this case, the PWS must notify the state by the end of the next business day. The TC+ sample (and presumed *EC*+ result) must still be included in the determination of the TT-trigger and compliance with the MCL.

A state-approved/certified lab may provide this information directly to the state.

5.2 TT Violations

Certain conditions require a PWS to conduct a Level 1 or Level 2 assessment. The RTCR specifies these conditions which are known as TT-triggers for a Level 1 or Level 2 assessment. A TT-trigger is not the same as a TT violation. See Section 3.1.1 of this guidance for additional information on TT-triggers.

5.2.1 Coliform TT Violations

A system incurs a coliform TT violation when any of the following occurs:

- A system fails to conduct a required Level 1 or Level 2 assessment within 30 days of learning of the trigger.

- A system fails to correct any sanitary defect found through either a Level 1 or 2 assessment within 30 days of learning of the trigger or in accordance with a schedule approved by the state.

- A seasonal system fails to complete state-approved start-up procedures prior to serving water to the public. More information on recommendations for state-approved start-up procedures can be found in Section 7.4.8.4 of this manual.

Systems must issue Tier 2 PN for these TT violations (40 CFR Appendix A to Subpart Q).

QUESTION: What if a system conducts an assessment and sets a timeline for corrective action years into the future (which the primacy agency accepts), but triggers additional assessments before the corrective action can be completed?

ANSWER: A system incurs a Level 1 or Level 2 assessment for each triggered event; a PWS may not assume that the TT-trigger from a previous event is the cause of a subsequent Level 1 or Level 2 assessment trigger. A PWS must complete a Level 1 or Level 2 assessment (and required corrective actions), for each triggered event because the contamination causing the second trigger may be of a different type or for a different reason. If the system discovers that the contamination continues to be caused by the original triggering event, the system can perform interim measures to ensure the delivery of safe water, but the system is still required to conduct an assessment for each TT-trigger. The PWS would incur a TT violation for each uncompleted Level 1 or Level 2 assessment.

In addition, if the system finds other sanitary defects during the subsequent assessments, the system must correct them. If the system fails to correct newly identified sanitary defects within the state-approved timeframe, it incurs a TT violation for each uncorrected sanitary defect.

5.3 Monitoring Failures and Monitoring Violations

A PWS that fails to comply with the analytical methods requirements of 40 CFR 141.852 is in violation of the RTCR testing requirements. A PWS that fails to meet the compliance monitoring requirements of 40 CFR 141.853 (including failure to take all required routine or additional routine samples, or failure to analyze for *E. coli* following a TC+ routine sample) is in violation of the RTCR monitoring requirements.

Use of improper analytical methods and RTCR monitoring violations require a system to issue Tier 3 PN (40 CFR Appendix A to Subpart Q).

To clarify, if a PWS fails to analyze for *E. coli* following a TC+ routine sample, the PWS has incurred a monitoring violation that requires Tier 3 PN. However, a PWS which fails to analyze for *E. coli* following a TC+ repeat sample has incurred an *E. coli* MCL violation and requires Tier 1 PN (see Section 5.1). Therefore, depending on the monitoring failure, a PWS can incur a monitoring violation, or an *E. coli* MCL violation which triggers a Level 2 assessment.

Table 5-2. Description of Monitoring Failures

Violation Consists Of Failure to:	Monitoring Violation	*E. coli* MCL Violation	Triggers Level 1 or Level 2 Assessment
Take all routine or additional routine samples	Yes	No	No
Take/analyze for *E. coli* following a TC+ routine sample	Yes	No	No
Take all repeat samples following a TC+/*E. coli*-negative routine sample	No	No	Level 1 [1]
Take all repeat samples following an EC+ routine sample	No	Yes	Level 2
Analyze for *E. coli* following a TC+ repeat sample	No	Yes	Level 2

1. A Level 2 assessment is triggered if it is the second Level 1 assessment triggered within the rolling 12-month period.

5.4 Reporting Violations

A system incurs a reporting violation under 40 CFR 141.860 when the system fails to:

- Submit a monitoring report or completed assessment form after a system properly conducts monitoring or an assessment in a timely manner.
- Notify the state, in a timely manner, following an *EC+* sample as required by 40 CFR 141.858(b)(1).
- Submit certification of completion of state-approved start-up procedures by a seasonal system.

Tier 3 PN is required for these reporting violations. For additional information on PN, see Section 6 of this Guidance.

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Section 6

Public Notice of Drinking Water Violations and CCR Requirements

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6.1 Public Notification (PN) Requirements [40 CFR Part 141, Subpart Q]

Three general categories of PN are required by the RTCR:

- Tier 1, Tier 2 or Tier 3 PN is required of all PWSs,[5] under certain circumstances.
- A CCR is required of CWSs by July 1 of each year.

The type of PN required depends on the violation or scenario that has occurred at the PWS. Table 6-1 summarizes PN and CCR requirements for the RTCR. States are encouraged to develop notification templates that PWSs can use for each type of violation or situation to ensure that all required components are included. More information on the instructions and templates to help with implementation of the RTCR can be found at https://www.epa.gov/dwreginfo/public-notification-instructions-and-templates-revised-total-coliform-rule-rtcr.

Table 6-1. PN and CCR[1] Requirements

Issue	RTCR Violation Citation	CCR Rule Citation[2]	PN Tier and PN Rule Citation
E. coli MCL violations:	40 CFR 141.860(a)	40 CFR 141.153	
• *EC*+ repeat sample result following a TC+ routine sample result.	40 CFR 141.860(a)(1)	40 CFR 141.153	Tier 1 40 CFR 141.202 and 40 CFR Appendix A to Subpart Q – I.A.2.b
• *EC*+ routine sample result followed by a TC+ repeat sample result.	40 CFR 141.860(a)(2)	40 CFR 141.153	Tier 1 40 CFR 141.202 and 40 CFR Appendix A to Subpart Q – I.A.2.b
• *EC*+ routine sample result and PWS fails to take all required repeat samples.	40 CFR 141.860(a)(3)	40 CFR 141.153	Tier 1 40 CFR 141.202 and 40 CFR Appendix A to Subpart Q – I.A.2.b
• TC+ repeat sample result, and PWS fails to test for *E. coli*.	40 CFR 141.860(a)(4)	40 CFR 141.153	Tier 1 40 CFR 141.202 and 40 CFR Appendix A to Subpart Q – I.A.2.b
E. coli TT violation: • Failure to perform a Level 2 assessment or corrective actions.	40 CFR 141.860(b)(1)	40 CFR 141.153	Tier 2 40 CFR 141.203 and 40 CFR Appendix A to Subpart Q – I.A.2.c
Total coliform TT violation: • Failure to perform a Level 1 assessment or corrective actions.	40 CFR 141.860(b)(1)	40 CFR 141.153	Tier 2 40 CFR 141.203 and 40 CFR Appendix A to Subpart Q – I.A.1.b

[5] The RTCR applies to all PWSs, except for those excluded from regulation by Section 1411 of the SDWA (42 U.S.C. 300g) and those subject to the Aircraft Drinking Water Rule (40 CFR 141, Subpart X). See Section 1.3.1 for additional information on applicability of the Rule.

Issue	RTCR Violation Citation	CCR Rule Citation[2]	PN Tier and PN Rule Citation
TT violation: • For seasonal NCWS, failure to follow state-approved start-up procedures prior to serving water to the public.	40 CFR 141.860(b)(2)	N/A	Tier 2 40 CFR 141.203 and 40 CFR Appendix A to Subpart Q – I.A.1.c
Monitoring violations: • Failure to take every required routine or additional routine sample. • Failure to analyze for *E. coli* following a TC+ routine sample.	40 CFR 141.860(c)(1) 40 CFR 141.860(c)(2)	40 CFR 141.153	Tier 3 40 CFR 141.204 and 40 CFR Appendix A to Subpart Q – I.A.1.b and I.A.2.b
Reporting violation: • Failure to submit a monitoring report or completed assessment form after a PWS properly conducts monitoring or assessment in a timely manner. • Failure to notify the state of an *EC*+ sample result in a timely manner. • For seasonal systems, failure to submit certification of completion of state-approved start-up procedure.	40 CFR 141.860(d)(1)-(3)	40 CFR 141.153	Tier 3 40 CFR 141.204(a)(6)
Recordkeeping violations: • Failure to maintain assessment forms, corrective action documentation or other summary documentation of sanitary defects for at least five years. • Failure to maintain a record of any repeat sample taken that meets state criteria for an extension of the 24-hour period for collecting repeat samples.	40 CFR 141.861(b)	40 CFR 141.153	Tier 3 40 CFR 141.204 (a)(6)
Failure to include specific required language when a must conduct an assessment.	N/A	40 CFR 141.153(c)(4) and 40 CFR 141.153(h)(7)	N/A
Failure to include water quality table information for detected *E. coli*.	N/A	40 CFR 141.153(d)(4)(iv) and (x)	N/A

1. Only CWSs must comply with the CCR requirements.
2. CWSs may provide Tier 3 PN using their annual CCR if the CCR is provided to persons served no later than 12 months after the water system learns of the violation. The Tier 3 PN contained in the CCR must follow all content and delivery requirements [40 CFR 141.204(d)].

PWSs must notify the public according to the PN requirements in 40 CFR 141, Subpart Q. All copies of public notices issued pursuant to 40 CFR 141, Subpart Q and certifications made to primacy agencies in accordance with 40 CFR 141.31 must be kept for three years after issuance.

6.1.1 Tier 1 PN

Beginning April 1, 2016, if a PWS incurs an *E. coli* MCL violation, then the PWS must issue PN under 40 CFR 141.202. PWSs must include the following standard health effects language for their Tier 1 PNs:

> E. coli *are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems.*

6.1.2 Tier 2 PN

The RTCR requires Tier 2 PN when PWSs incur one of the following violations:

- Failure to perform a Level 1 or Level 2 assessment or corrective action.
- For seasonal NCWSs, failure to follow state-approved start-up procedures prior to serving water to the public.

Table 6-2 presents the standard health effects language for Tier 2 public notices.

Table 6-2. Tier 2 PN Health Effects Language

Violation	Health Effects Language
Failure to conduct assessments or corrective action related to total coliform.	*Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found.* In addition, the system must include one or both of the following statements, as appropriate: 1. *We failed to conduct the required assessment.* 2. *We failed to correct all identified sanitary defects that were found during the assessment(s).*

Violation	Health Effects Language
Failure to conduct a Level 2 assessment or corrective action related to *E. coli*.	E. coli *are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for E. coli, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found.* In addition, include one or both of the following statements, as appropriate: 1. *We failed to conduct the required assessment.* 2. *We failed to correct all identified sanitary defects that were found during the assessment that we conducted.*
Failure to conduct a Level 2 assessment that is triggered by a second Level 1 assessment in the specified timeframe; or take corrective action in this circumstance.	*Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found.* In addition, the system must include one or both of the following statements, as appropriate: 1. *We failed to conduct the required assessment.* 2. *We failed to correct all identified sanitary defects that were found during the assessment(s).*
Failure of a seasonal system to follow state-approved start-up procedures prior to serving water to the public – including failure to monitor for total coliforms or *E. coli*	When this violation includes the failure to monitor for total coliforms or *E. coli* prior to serving water to the public, the following language from 40 CFR 141.205(d)(2) must be included: *We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we "did not monitor or test" or "did not complete all monitoring or testing" for [contaminant(s)], and therefore, cannot be sure of the quality of your drinking water during that time.*
Failure of a seasonal system to follow state-approved start-up procedures prior to serving water to the public – when monitoring is not required	If monitoring is not required as part of the start-up procedures or when this violation includes failure to complete other actions, the appropriate elements required for PN at 40 CFR 141.205(a) must be included.

PWSs must repeat Tier 2 PN every three months as long as the violation or situation persists, unless the state determines that appropriate circumstances warrant a different repeat notice frequency. Repeat notices must be issued at least once per year. The state may not reduce the frequency of repeat notices for an *E. coli* MCL or TT violation. The state may also not allow through its rules or policies across-the-board reductions in the repeat notice frequency for other ongoing violations requiring a Tier 2 repeat notice. State determinations allowing repeat notices to be given less frequently than once every three months must be in writing.

6.1.3 Tier 3 PN

The RTCR requires a PWS to issue Tier 3 PN if the PWS fails to meet an RTCR monitoring requirement, or if the system incurs a reporting violation for failure to:

- Notify the state in a timely manner following an *EC+* sample.
- Submit in a timely manner, either a monitoring plan or a completed assessment form after a PWS properly conducts monitoring or an assessment.
- Submit certification of completion of state-approved start-up procedures by a seasonal NCWS.

CWSs may provide Tier 3 PN using their annual CCR if the CCR is provided to persons served no later than 12 months after the water system learns of the violation. The Tier 3 PN contained in the CCR must follow all content and delivery requirements. Examples of public notices are provided in Section 8.3 of this guidance manual.

6.1.3 Public Notice for Hydraulically or Physically Isolated Areas within PWSs

The state has discretion to allow limited distribution of a PN to only persons served by a portion of a water system if a portion of the water system is hydraulically or physically isolated from other parts of the distribution system. When limiting the distribution of a PN, the state should consider other aspects of the water system, such as the condition of any valves and pipes used to maintain the hydraulic or physical isolation, and whether the source water and/or treatment for the portions of the PWS are the same. Positive samples, and the situations requiring PN, can be caused by problems with the source water and treatment, as well as distribution system issues. Permission to limit the distribution of a PN must be granted in writing by the state, in accordance with other rule requirements. The state drinking water agency and PWS should have clear and sufficient evidence that the area of the water system is physically or hydraulically isolated and that limiting the distribution of the PN is warranted considering the potential health severity of exposure to waterborne contaminants, risk of exposure and PN tier.

6.2 CCR Requirements [40 CFR 141.153]

CWSs must report information on detected contaminants and information related to MCL, TT and monitoring violations in their CCRs. The CCR summarizes information regarding sources used (i.e., rivers, lakes, reservoirs or aquifers), any detected contaminants, compliance and educational information. The reports are due to customers by July 1 of each year. More information on CCR requirements that include compliance tools and implementation documents can be found at https://www.epa.gov/ccr/how-water-systems-comply-ccr-requirements.

The CCR Rule has been modified to include a number of new provisions to address the requirements of the RTCR. In addition to other requirements stipulated in 40 CFR 141.153(d), the changes in the Table of Detected Contaminants include:

- For *E. coli*: Report total number of EC+ positive samples.
- For Total Coliform: Report the applicable language if the CWS triggers an assessment (i.e., L1/L2assessments) or incurs a TT-violation. Note: CWSs are not required to report the total number or percent TC+ samples (as was done under the TCR).

The CCR must include applicable language based on the following situation or violation in accordance with 141.153(h)(7):

- **Situation 1:** Level 1* and/or Level 2* assessment triggered (not due to an *E. coli* MCL violation) Systems must include in CCR:
  - Completed table required by 141.153(d)(4) – MCL, Health Effects for total coliforms. Note: Not required to report total number or percent TC+ samples;
  - Definition of Level 1 and/or Level 2 assessments [40 CFR 141.153(c)(4)(i)-(ii)];
  - Number of Level 1 and/or Level 2 assessments triggered;
  - Number of Level 1 and/or Level 2 assessments completed;
  - Number of Level 1 and/or Level 2 assessments corrective actions required;
  - Number of Level 1 and/or Level 2 assessments corrective actions completed; and
  - Cause of the TT violation, if CWS fails to complete all required assessments or correct all sanitary defects.
- **Situation 2:** Level 2* assessment triggered due to an *E. coli** MCL violation
  - Total number of *EC*+ samples;
  - Completed table required by 141.153(d)(4) – MCL, MCLG, and Health Effects for *E.coli*;
  - Definition of Level 2 assessment;
  - Reason for conducting Level 2 assessment (i.e., because of *E. coli* MCL violation), number of corrective actions required, and number of corrective actions completed; and
  - For systems that fail to complete all required assessments or correct all identified sanitary defects, the cause of the TT violation
- **Situation 3:** Detected *E. coli** and have *E. coli* MCL violation
  - Total number of *EC*+ detects
  - Completed table required by 141.153(d)(4) – MCL, MCLG, and Health Effects for *E.coli*;
  - Reason(s) for non-compliance (include all that apply):
    - "We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample."
    - "We had a total coliform-positive repeat sample following an *E. coli*-positive routine sample."
    - "We failed to take all required repeat samples following an *E. coli*-positive routine sample."
    - "We failed to test for *E. coli* when any repeat sample tests positive for total coliform."

- **Situation 4:** Detected *E. coli* but no *E. coli* MCL violation
  - Total number of *EC*+ detects
    - Note: CWSs are strongly encouraged to include a statement that explains the *E. coli* detect with no violations. For example, "Although the system has detected *E. coli*, it is not in violation of the *E. coli* MCL (see CCR-iWriter example)."
    - Completed table required by 141.153(d)(4) – MCL, MCLG, and Health Effects for *E. coli* (see CCR-iWriter example).

*NOTE: An asterisk indicates where mandatory health effects language, definitions for Level 1 and Level 2 assessments, and additional information for assessments must be included in the CCR.

Table 6-3 through table 6-5 includes the RTCR- mandatory definitions and language to include in the CCR.

Table 6-3. CCR Definitions for the RTCR

CCR Definition	Citation
Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.	40 CFR 141.153(c)(4)(i)
Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.	40 CFR 141.153(c)(4)(ii)

Table 6-4. CCR Health Effects Language for the RTCR: Level 1 or 2 Assessment Not Due to *E. coli* MCL Violation

CCR Language	Citation
Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.	40 CFR 141.153(h)(7)(i)(A)
During the past year we were required to conduct [INSERT NUMBER OF LEVEL 1 ASSESSMENTS] Level 1 assessment(s). [INSERT NUMBER OF LEVEL 1 ASSESSMENTS] Level 1 assessment(s) were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.	40 CFR 141.153(h)(7)(i)(B)
During the past year [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] Level 2 assessments were required to be completed for our water system. [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] Level 2 assessments were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.	FR 141.153(h)(7)(i)(C)

CCR Language	Citation
For a TT violation for failure to complete all required assessments or correct all identified sanitary defects, include one or both of the following statements, as appropriate: 1. During the past year we failed to conduct all of the required assessment(s). 2. During the past year we failed to correct all identified defects that were found during the assessment.	40 CFR 141.153(h)(7)(i)(D)

Table 6-5. CCR Health Effects Language for the RTCR: Level 2 Assessment Due to an *E. coli* MCL Violation

CCR Language	Citation
E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.	40 CFR 141.153(h)(7)(ii)(A)
We were required to complete a Level 2 assessment because we found *E. coli* in our water system. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.	40 CFR 141.153(h)(7)(ii)(B)
For a TT violation for failure to complete all required assessments or correct all identified sanitary defects, include one or both of the following statements, as appropriate: 1. We failed to conduct the required assessment. 2. We failed to correct all sanitary defects that were identified during the assessment that we conducted.	40 CFR 141.153(h)(7)(ii)(C)

Section 7

State Primacy Revision Application and Implementation Considerations

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40 CFR Part 142 sets out requirements for states to obtain and/or retain primary enforcement responsibility (primacy) for the PWSS program as authorized by Section 1413 of the SDWA (42 U.S.C. 300g-2). The 1996 SDWA Amendments updated the process for states to obtain and/or retain primacy. On April 28, 1998, EPA promulgated the Primacy Rule to reflect these statutory changes (63 FR 23362).

7.1 State Primacy Program Revision

Pursuant to 40 CFR 142.12, complete and final requests for approval of program revisions to adopt new or revised EPA regulations must be submitted to the EPA Administrator no later than two years after promulgation of new or revised federal regulations. Note: EPA encourages the state to submit the primacy application or extension requests to the EPA Regional Administrator and the appropriate Regional Drinking Water Program Office to minimize delay of review. Since the effective date of a rule is three years after promulgation, there are no implementation responsibilities for EPA or the state if a state submits a complete primacy package within the required two years of promulgation. A state receives full implementation and enforcement authority 30 days after EPA's publication in the *Federal Register* of the approval of the state's primacy package. The state can receive full implementation and enforcement authority immediately after a final primacy package is submitted and deemed complete if the state meets the requirements for interim primacy.

EPA recognizes the interim primacy process is a negotiated process between many states and Regions, especially when the eligibility requirements are not met. States that have received approval by EPA for primacy for all previous NPDWRs and other state-initiated program changes that the state may have made to their regulations that are subject to review according to 40 CFR 142.17 are eligible for interim primacy for a new or revised NPDWR. Pursuant to 40 CFR 142.12(e), a state with an approved primacy program for each existing NPDWR shall be considered to have interim primary enforcement authority with respect to each new or revised NPDWR that it adopts, beginning when the new or revised state regulation becomes effective or when the complete primacy revision application is submitted to EPA, whichever is later.

If a state is eligible for interim primacy, full implementation and enforcement authority is granted for the new or revised rule on the date the final primacy revision is deemed complete by the Region, or the effective date of the new state regulation (whichever is later). Interim primacy ends 30 days after EPA's publication in the *Federal Register* of the approval of the state's primacy package.

Table 7-1a outlines important dates for successfully submitting a final primacy revision by the two-year deadline. Since a state may be granted an extension of up to two years to submit its application package, Table 7-1b outlines important dates for successfully submitting a final primacy revision by this four-year deadline. Extensions to the state primacy program revision process are further discussed below in Section 7.2.

Table 7-1a. RTCR Implementation and Revision Timetable for States Not Requesting a Primacy Extension

EPA/State Action	Recommended Timeframe
RTCR promulgated.	February 13, 2013*
States submits *DRAFT* primacy revision package to EPA Region including: • Preliminary Approval Request. • Draft State Regulations and/or Statutes. • Regulation Crosswalk.	August 2014[1]

EPA/State Action	Recommended Timeframe
EPA Regional (and Headquarters if necessary) review of *DRAFT*.	Completed within 90 days of state submittal of draft.
State and EPA Region establish a process; agree on any needed revisions found during the review of the *DRAFT*; and agree on a schedule to submit the *FINAL* program revision application, which was due no later than February 13, 2015.	December 2014
State must submit *FINAL* program revision package to EPA Region including: • Adopted State Regulations. • Regulation Crosswalk. • 40 CFR 142.10 Primacy Update Checklist. • 40 CFR 142.14 and §142.15 Reporting and Recordkeeping. • 40 CFR 142.16 Special Primacy Requirements. • Attorney General's Statement of Enforceability.	February 13, 2015*
EPA *FINAL* review and determination: • EPA Regional review [program and Office of Regional Counsel (ORC)] and proposal to approve a state program revision. • Headquarters concurrence and/or waiver if appropriate [Office of Ground Water and Drinking Water (OGWDW)]. • Public notice. • Opportunity for hearing. • EPA's determination to approve/disapprove the state program.	Determination published in the *Federal Register* within 90 days of EPA's determination that the *FINAL* program revision package was complete. 45 days EPA Region 45 days Headquarters (HQ)[2]
Rule compliance date (effective date).	April 1, 2016*

* These are federally mandated dates for rule promulgation and compliance.

1. EPA strongly recommends that a state submit a *DRAFT* application (including draft regulations and/or statutes), so that any regulations or laws that are less stringent than the federal regulations can be found early in the process and revised. Review of the draft will allow the state to avoid having to re-do its regulatory process to correct stringency errors found in review of the adopted state regulations submitted with the *FINAL* program revision package. The *DRAFT* application should have been submitted no later than August 2014 or far enough in advance to ensure that EPA can review, and the state can make changes to, draft regulations or statues.
2. One or more state per EPA Region.

Table 7-1b. RTCR Implementation and Revision Timetable for States with Primacy Extension

EPA/State Action	Recommended Timeframe
RTCR promulgated.	February 13, 2013*
If not able to submit final program revision package to the EPA Region, state submits a *DRAFT* extension request including a proposed negotiated workload/work share agreement with the EPA Region. See Table 7-2 for the State Primacy Revision Extension Checklist (also included in Appendix C), and Appendix F for Recommended Workload Activities.	August 2014[1]
State and EPA Region establish understanding of RTCR work share/workload activities and agree upon a schedule for state submission of final extension agreement package.	December 2014

EPA/State Action	Recommended Timeframe
State submits a *FINAL* extension request, signed by both the state and EPA, if the state is not able to submit final program revision package to the EPA Region including: • Agreement on workload/work share activities with the state. • State activities and associated timelines to remedy the causes for state's inability to adopt regulations by the original timeframe. See Table 7-2 for the State Primacy Revision Extension Checklist (also included in Appendix C), and Appendix F for Recommended Workload Activities.	February 13, 2015
States with an approved extension submit a *DRAFT* program revision package to EPA Region including: • Preliminary Approval Request. • Draft State Regulations and/or Statutes. • Regulation Crosswalk.	August 2016[2]
State and EPA Region establish a process; agree on any needed revisions found during the review of the *DRAFT*; and agree on a schedule to submit the *FINAL* program revision application which was due no later than February 13, 2017.	December 2016
Rule compliance date (effective date).	April 1, 2016*
States with approved extensions submit *FINAL* program revision package to EPA Region including: • Adopted State Regulations. • Regulation Crosswalk. • 40 CFR 142.10 Primacy Update Checklist. • 40 CFR 142.14 and §142.15 Reporting and Recordkeeping. • 40 CFR 142.16 Special Primacy Requirements. • Attorney General's Statement of Enforceability.	February 13, 2017*
States with approved extensions, EPA final review and determination: • EPA Regional review [program and ORC] and proposal to approve a state program revision. • Headquarters concurrence and/or waiver if appropriate [OGWDW]. • Public notice. • Opportunity for hearing. • EPA's determination to approve/disapprove the state program.	Determination published in the *Federal Register* within 90 days of EPA's determination that the *FINAL* program revision package was complete. 45 days EPA Region 45 days Headquarters (HQ)[2]

* These are federally mandated dates for rule promulgation and compliance.

1. EPA strongly recommends that a state submit a *DRAFT* application (including draft regulations and/or statutes), so that any regulations or laws that are less stringent than the federal regulations can be found early in the process and revised. Review of the draft will allow the state to avoid having to re-do its regulatory process to correct stringency errors found in review of the adopted state regulations submitted with the *FINAL* program revision package. The *DRAFT* application should have been submitted no later than August 2016 (for states with a two-year extensions), or far enough in advance to ensure that EPA can review, and the state can make changes to, draft regulations or statues. NOTE: All dates are subject to change depending on individual state agreements with the EPA Region.
2. One or more state per EPA Region.

7.1.1 The Revision Process

EPA reviews these legal primacy revision documents to find any differences in the state's regulatory language (typically conducted by EPA's drinking water program), and to ensure those differences do not make the state's rules less stringent than the federal rules (typically conducted by EPA's Regions' Office of Regional Counsel). If requirements and authorities specific to a state are different than the RTCR

requirements, the state's primacy application materials must include information and documentation that demonstrates that the state's program is at least as stringent as the federal requirements. EPA Headquarters oversees the Regions' reviews by co-reviewing at least one package that is submitted to the Region. Therefore, time should be incorporated into a state's rule adoption process to allow for EPA's thorough examination of the draft and final primacy application packages.

EPA uses a two-step process for approval of state program revisions. The steps consist of submission of a draft request (very strongly recommended) for program approval, followed by submission of a complete and final request for program approval. Figure 7-1 diagrams these processes and their timing.

- **Draft Primacy Application** – The state rule adoption process can be very resource intensive and can typically last between one to two years; sometimes longer. Submitting a draft primacy application for review by EPA is one of the best time savings measures a state can perform in the process of adopting a new regulation. It is important to coordinate with EPA to ensure that the draft is submitted with enough time for EPA to complete its comprehensive review, and for the state to make any necessary changes prior to final rule adoption. EPA recommends submitting the draft primacy application no later than 18 months after rule promulgation.

  Where possible, the state's submission should contain drafts of all required primacy application materials (with the exception of a draft Attorney General's Statement), with the state's regulatory language and crosswalk (see Appendix A of this document) being the most important parts to include in the draft submission. EPA will conduct a comprehension review of the draft application materials to find all the differences in the state's regulatory language and ensure that those differences do not make the state's rules less stringent than the federal rules. The state will need to provide EPA with any changes made to the state's regulations after EPA's review (i.e., based on the state's own review, the state's public comment process, etc.) to ensure that any changes do not make the state's regulations less stringent than the federal regulations. EPA will make a tentative determination as to whether the state program meets the applicable requirements.

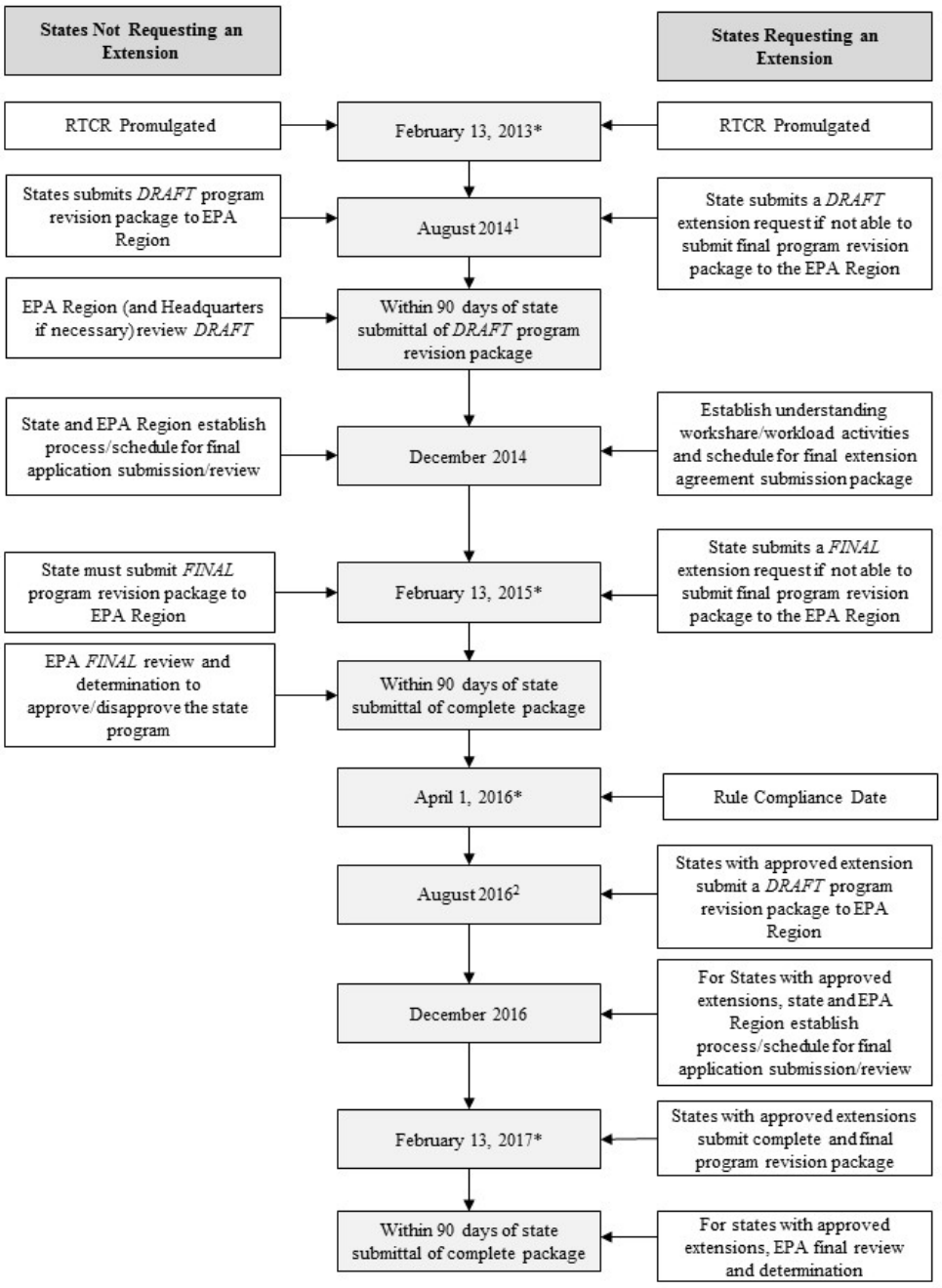
- **Final Primacy Application Package** – This submission must be in accordance with 40 CFR 142.12(c)(1) and (2) and include among other things, an Attorney General's Statement. The required components of a complete primacy package are listed in Section 7.3. States eligible for interim primacy can receive it as soon as EPA makes a determination that the final primacy application package is complete. Any state that submitted a draft primacy application should document in the final application package that requested revisions have been made and adopted in the final rule. This will expedite the final review and better enable EPA to meet the 90-day statutory deadline to publish a determination in the *Federal Register*.

  States that only submit a final revised primacy application without also submitting a draft are at risk of not being able to identify and correct any stringency issues that may be found prior to rule adoption which may force the state to go through the rule adoption process a second time.

EPA recommends that states submit their complete and final revision package within 24 months of rule promulgation (or no later than February 13, 2015, for the RTCR). For states that meet the interim primacy requirements, early submission will ensure receipt of interim primacy as early as possible. Early submittals may also help EPA complete its review in a timely manner, allowing states to receive full primacy sooner.

The state and EPA Region should agree to a plan and timetable for submitting the state primacy revision application as soon as possible after rule promulgation. Tables 7-1a and 7-1b above, and Figure 7-1 below, provide key dates that states and EPA can use to plan for the submission of the draft and final primacy applications.

Figure 7-1. State Rule Implementation and Revision Timetable for the RTCR (At-A-Glance Timeline)



* These are federally mandated dates for rule promulgation and compliance.

1. EPA strongly recommends that a state submit a *DRAFT* application (including draft regulations and/or statutes), so that any regulations or laws that are less stringent than the federal regulations can be found and revised. Review of the draft will allow the state to avoid having to re-do its regulatory process to correct stringency errors found in review of the adopted state regulations submitted with the *FINAL* program revision package. The *DRAFT* application should have been submitted no later than August 2014 or far enough in advance to ensure that EPA can review, and the state can make changes to, draft regulations or statues. NOTE: All dates are subject to change depending on individual state agreements with the EPA Region.
2. For states with extensions, the *DRAFT* application should have been submitted no later than August 2016 (for states with a two-year extension) or far enough in advance to ensure that EPA can review, and the state can make changes to, draft regulations and/or statues. NOTE: All dates are subject to change depending on individual state agreements with the EPA Region.

7.1.2 The Final Review Process

Once EPA determines that a state application is complete and final, EPA has a legal deadline of 90 days to review, approve or disapprove the revised program, and publish a notice of the decision in the *Federal Register*. OGWDW will conduct a detailed concurrent review of a state package from each EPA Region.

In order to meet the 90-day deadline for packages undergoing concurrent review by OGWDW, the review period is equally split giving the EPA Regions and OGWDW 45 days each to conduct their respective reviews. Regions should forward copies of the primacy revision applications and their evaluations to the Drinking Water Protection Division Director in OGWDW no later than 45 days after state submittal. The Drinking Water Protection Division Director takes the lead on the OGWDW review process.

When the EPA Region has identified all significant issues, OGWDW may waive concurrence on all other state programs in that Region, although EPA Headquarters retains the option to review additional state programs as appropriate. The Office of General Counsel (OGC) has delegated its review and approval to the ORC.

7.2 State Primacy Program Revision Extensions

7.2.1 The Extension Process

Under 40 CFR 142.12(b), a state must submit to EPA a complete and final primacy revision application package no later than two years after promulgation of a rule. If the state cannot meet this deadline, there is an opportunity for EPA to grant up to two additional years for the state to submit a complete and final package if the state applies for an extension. The extension request must be submitted to the EPA Region before the expiration of the two-year deadline (i.e., February 13, 2015). The Regional Administrator has been delegated authority to approve extension applications. Concurrence by EPA Headquarters on extensions is not required.

Therefore, the state must either adopt regulations pertaining to the RTCR and submit a complete and final primacy revision application by February 13, 2015, or request an extension of up to two years by that date. While the state may request an extension of up to two years, the EPA Region has the discretion to approve the extension period based on a lesser timeframe. When the EPA Region grants an approval of a shorter extension period than the full two years, the EPA Region and state can re-evaluate the state's ability to obtain full primacy of the RTCR and add any additional remedies required by the state as a condition of the EPA Region granting a full two-year extension period.

7.2.2 Extension Request Criteria

For an extension to be granted under 40 CFR 142.12(b), the state must demonstrate that it is requesting the extension because it cannot meet the original deadline for reasons beyond its control despite a good faith effort to do so. A critical part of the extension application is the state's proposed schedule for submission of its complete and final request for approval of a revised primacy program. The application must also demonstrate at least one of the following:

- That the state currently lacks the legislative or regulatory authority to enforce the new or revised requirements;
- That the state currently lacks the program capability adequate to implement the new or revised requirements; or,

- That the state is requesting the extension to group two or more program revisions in a single legislative or regulatory action.

In addition, the application must demonstrate that during the extension period the state is implementing federal requirements included in the program revision, taking into account the state's current authorities and capabilities.

7.2.3 Conditions of the Extension

Until states have interim or full primacy, EPA is the primary enforcement authority. However, states have historically played a role in implementation before obtaining primacy for various reasons—most importantly because states have local knowledge, expertise and established relationships with their PWSs. Therefore, until the state primacy revision application has been approved, the state and EPA Region typically share responsibility in practice. Typically, the state agrees to implement the primary program elements and EPA agrees to carry out any enforcement activities due to the state not having the authority to enforce until the rule is adopted.

During this time, the state and EPA should be viewed as partners, working toward two very specific goals. The first goal is to achieve a high level of compliance with the regulation. The second goal is to facilitate successful implementation of the regulation during the transition period between when EPA has primacy and when the state is delegated primacy, including interim primacy, for the RTCR. When an EPA Region has direct implementation and primary enforcement authorities for the RTCR, the EPA Region may use part of the PWSS grant (if funds remain in a state's allotment after the PWSS program grant has been made to the state or because no grant was made to the state) to support the Federal government's implementation of the RTCR in the absence of an acceptable state PWSS program (40 CFR 35.116). EPA has direct implementation and primary enforcement authorities when a state does not have interim primacy for the RTCR (i.e., when the state regulations for the RTCR are not effective or when a state has not submitted a complete primacy revision application to the EPA Regional Administrator) [40 CFR 142.12(e)].

In order to accomplish these goals and to ensure proper health protection, education, training and technical assistance should be provided to water suppliers explaining their responsibilities under the RTCR. Water suppliers are also encouraged to refer to the RTCR guidance materials, rule presentations, reference guides and fact sheets, available on EPA's website at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule.

EPA has developed materials to assist with the extension agreement process including:

- Table 7-2, which is a state Primacy Revision Extension Checklist that states can use as guidance for what EPA will expect from a state extension agreement. Table 7-2 is also included in Appendix C.

- An Example Extension Agreement Letter (see Example 7-1 below) to discuss the implementation, database and enforcement activities and negotiate who is responsible for each activity or how the work will be shared. A copy of this letter is also included in Appendix C for readers to pull out and use as a reference guide.

- RTCR Workload/Work Share Responsibilities Checklist, which can be used to discuss and identify any additional concerns for RTCR implementation based on the norms, culture and unique requirements of PWSs in the state. The checklist is included as Appendix F for readers to pull out and use.

Table 7-2. State Primacy Revision Extension Checklist

CFR Reference	Elements	EPA Findings/ Comments
40 CFR 142.12(b)(1)	State provides a final extension request before the deadline February 13, 2015.	
40 CFR 142.12(b)(2)	State demonstrates good faith effort to meet original deadline.	
40 CFR 142.12(b)(2)	State requests an extension due to reasons beyond its control.	
40 CFR 142.12(b)(2)	State's application for extension includes a schedule with a timeframe for the submission of a final request for state program revision. [1]	
40 CFR 142.12(b)(2)	State's application for extension includes sufficient information to demonstrate at least one of the following:	
40 CFR 142.12(b)(2)(i)(A)	State lacks legislative/regulatory authority to enforce the rule; or	
40 CFR 142.12(b)(2)(i)(B)	State lacks the program capability adequate to implement the rule; or,	
40 CFR 142.12(b)(2)(i)(C)	State requests the extension to group two or more program revisions in a single legislative/regulatory action.	
40 CFR 142.12(b)(2) 40 CFR 142.12(b)(3)(vi)	State's application for extension contains steps and includes a schedule, during the extension period, agreed to by EPA and the state, to remedy the deficiencies related to the state's lack of program capability to adequately implement the rule.	
40 CFR 142.12(b)(2)(ii)	State's application for extension includes sufficient information to demonstrate state is implementing the EPA requirements pursuant to 40 CFR 142.12(b)(3) within the scope of its authority and capabilities. (Use Appendix F for Recommended Workload Activities.)	
40 CFR 142.12(b)(2)(ii) 40 CFR 142.12(b)(3)(vi)	State demonstrates implementation of the steps to remedy the deficiencies related to the state's lack of program capability to adequately implement the rule.	
40 CFR 142.12(b)(2)(ii)	State demonstrates implementation of the RTCR pursuant to 40 CFR 142.12(b)(3) within the scope of its authority and capabilities. (Appendix F is provided to outline EPA/state responsibilities.)	

1. While the state may request an extension of up to two years to submit the final request for program revision, the EPA Region has the discretion to approve the extension period based on a lesser timeframe to allow re-evaluation of state's progress in meeting the required activities to address program/statutory deficiencies which prevented the primacy agency from obtaining primacy before April 1, 2016. When the EPA Region grants an approval for a shorter extension period (i.e., less than the full two years), the EPA Region and state can re-evaluate the state's ability to obtain full primacy of the RTCR and add any additional remedies that must be taken by the state as a condition of the EPA Region granting a full two-year extension period.

Example 7-1. Example Extension Agreement Letter

{Date}

{Regional Administrator}

Regional Administrator
U.S. EPA Region **{Region}**
{Street Address}
{City, State, Zip}

RE: Request/approval for an Extension Agreement

Dear {Regional Administrator}:

The State of **{State}** is requesting an extension to the date that final primacy revisions are due to EPA for the Revised Total Coliform Rule (RTCR) until **{insert date - no later than February 13, 2017}**, as allowed by 40 CFR 142.12, and would appreciate your approval. Staff of the **{State Department/Agency}** have conferred with your staff and have agreed to the requirements listed below for this extension. This extension is being requested because the State of **{State}**:

□ Is planning to group two or more program revisions into a single legislative or regulatory action.
□ Currently lacks the legislative or regulatory authority to enforce the new or revised requirements.
□ Currently lacks adequate program capability to implement the new or revised requirements.

{State Department/Agency} will be working with EPA to implement the RTCR within the scope of its current authority and capability, as outlined in the areas identified in 40 CFR 142.12(b)(3)(i) - (vi):

i) Informing public water systems (PWSs) of the new EPA (and upcoming state) requirements and the fact that EPA will be overseeing implementation of the requirements until EPA approves the state revision.

State	EPA	
_____	_____	Provide copies of regulation and guidance to other state agencies, PWSs technical assistance providers, associations, or other interested parties.
_____	_____	Educate and coordinate with state staff, PWSs, the public and other water associations about the requirements of this regulation.
_____	_____	Notify affected systems of their requirements under the RTCR.
_____	_____	Other:

ii) Collecting, storing and managing laboratory results, public notices and other compliance and operation data required by EPA regulations.

State	EPA	
_____	_____	Devise a tracking system for PWS reporting pursuant to the RTCR.
_____	_____	Keep PWSs informed of reporting requirements during development and implementation.
_____	_____	Report RTCR violation and enforcement information to Safe Drinking Water Information System (SDWIS) as required.
_____	_____	Other:

iii) Assisting EPA in the development of the technical aspects of the enforcement actions and conducting informal follow-up on violations (telephones calls, letters, etc.).

State	EPA	
_____	_____	Issue notices of violations (NOVs) for treatment technique, maximum contaminant level (MCL), and monitoring/reporting violations of the RTCR.
_____	_____	Provide immediate technical assistance to PWSs with treatment technique, MCL and/or monitoring/reporting violations to try and bring them into compliance.
_____	_____	Refer all violations to EPA for enforcement if they have not been resolved within 60 days of the incident that triggered the violation. Provide information as requested to conduct and complete any enforcement action referred to EPA.
_____	_____	Other:

iv) Providing technical assistance to PWSs.

State	EPA	
_____	_____	Conduct training within the state for PWSs on RTCR rule requirements.
_____	_____	Provide technical assistance through written and/or verbal correspondence with PWSs.
_____	_____	Provide on-site technical assistance to PWSs as requested and needed to ensure compliance with the regulation.
_____	_____	Coordinate with other technical assistance providers and organizations to provide accurate information and aid in a timely manner.
_____	_____	Other:

v) Providing EPA with all information prescribed by the State Reporting Requirements in 40 CFR 142.15.

State	EPA	
_____	_____	Report any violations incurred by PWSs for this regulation each quarter.
_____	_____	Report any enforcement actions taken against PWSs for this regulation this quarter.
_____	_____	Report a list of systems that the state is allowing to monitor less frequently than once per month for CWSs or less frequently than once per quarter for NCWSs including the applicable date of the reduced monitoring requirement for each system.
_____	_____	Other:

vi) For states whose request for an extension is based on a current lack of program capability to implement the new or revised requirements, taking the following steps to remedy the capability deficiency.

State	EPA	
_____	_____	Acquire additional resources to implement these regulations (list of specific steps being taken attached a {**List A}**).
_____	_____	Provide quarterly updates describing the status of acquiring additional resources.
_____	_____	Other:

In addition, please see attached Revised Total Coliform Rule Workload/Work Share Responsibilities Checklist for a full list of all RTCR implementation activities.

I affirm that the **{State Department/Agency}** will implement provisions of the RTCR as outlined in this letter and in the associated enclosures.

_____

{Agency Director or Secretary} {**Date}**

_____

{Name of State Agency}

I have consulted with my staff and approve your extension for the aforementioned regulation. I affirm that EPA Region **{Region}** will implement provisions of the RTCR as outlined in this letter and in the associated enclosures.

_____

Regional Administrator **{Date}**
EPA Region **{Region}**

This Extension Agreement will take effect upon the date of the last signature and will remain in effect until **{Insert date for which the extension agreement is approved}**.

Enclosure(s): **{Include "Appendix F: Revised Total Coliform Rule Workload/Work Share Responsibilities Checklist"}**

7.3 State Primacy Package

The final Primacy Revision Application package is considered complete when it contains the following items:

- ☐ State Primacy Revision Checklist.
- ☐ Text of the State's Regulations.
- ☐ Primacy Revision Crosswalk.
  - Including a comparison of any significant differences between the state regulations and the federal regulations including an explanation of how the state's requirements are "no less stringent" than the federal regulations. Supporting documentation, if requested by EPA, must be provided by the state.

- ☐ State Reporting and Recordkeeping Checklist.
- ☐ Special Primacy Requirements.
  - Including documentation of activities and program changes needed to address these requirements.

- ☐ Attorney General's Statement of Enforceability.

7.3.1 The State Primacy Revision Checklist [40 CFR 142.12(c)(1)]

This section includes a checklist of general primacy requirements, as shown in Table 7-3. A copy of this checklist is also included in Appendix C for readers to pull out and use as a reference guide.

In completing this checklist, the state must identify the program elements that it has revised in response to new federal requirements. **If an element has been revised, the state should indicate a "Yes" answer in the "Revision to State Program" column, provide a description of what was changed, certify that the revision did not make the state's program less stringent, and include any appropriate documentation.** If an element has not been revised, the state should indicate a "No" answer in the "Revision to State Program" column. For each element, the state needs to also include the appropriate state regulatory citation and its date of adoption in the "Revision to State Program" column. During the application review process, EPA will insert findings and comments in the final column.

The 1996 SDWA Amendments included a new PWS definition and an administrative penalty authority provision. States must adopt provisions at least as stringent as these provisions, codified at 40 CFR 142.2 and 40 CFR 142.10. Failure to revise these elements can affect primacy for the RTCR.

States must have primacy or interim primacy for all existing regulations before they can receive primacy for this regulation. States may bundle the primacy revision packages for multiple rules. If states choose to bundle requirements, the Attorney General's Statement should reference all of the rules included in the application.

Table 7-3. State Primacy Revision Checklist

CFR Citation	Required Program Elements	Revision to State Program under the RTCR YES/NO	EPA Findings/ Comments
40 CFR 142.10	Primary Enforcement Definition of Public Water System[1]		
40 CFR 142.10(a)	Regulations No Less Stringent		
40 CFR 142.10(b)(1)	Maintain Inventory		
40 CFR 142.10(b)(2)	Sanitary Survey Program		
40 CFR 142.10(b)(3)	Laboratory Certification Program		
40 CFR 142.10(b)(4)	Laboratory Capability		
40 CFR 142.10(b)(5)	Plan Review Program		
40 CFR 142.10(b)(6)(i)	Authority To Apply Regulations		
40 CFR 142.10(b)(6)(ii)	Authority To Sue In Courts Of Competent Jurisdiction		
40 CFR 142.10(b)(6)(iii)	Right of Entry		
40 CFR 142.10(b)(6)(iv)	Authority To Require Records		
40 CFR 142.10(b)(6)(v)	Authority To Require PN		

CFR Citation	Required Program Elements	Revision to State Program under the RTCR YES/NO	EPA Findings/ Comments
40 CFR 142.10(b)(6)(vi)	Authority To Assess Civil And Criminal Penalties		
40 CFR 142.10(b)(6)(vii)	Authority to require CWSs to provide CCRs		
40 CFR 142.10(c)	Maintenance of Records		
40 CFR 142.10(d)	Variance/Exemption Conditions (if applicable)[2]		
40 CFR 142.10(e)	Emergency Plans		
40 CFR 142.10(f)	Administrative Penalty Authority[1]		
40 CFR 142.10(g)	Electronic Reporting Regulations[3]		

1. Requirement from the 1996 SDWA Amendments. Regulations published in the April 28, 1998 *Federal Register*.
2. Regulations published in the August 14, 1998 *Federal Register*.
3. Regulations published in the October 13, 2005 *Federal Register*.

7.3.2 Text of the State's Regulation

Each primacy application package should include the appropriate text of the state's regulations or appropriate citations if the state is incorporating the RTCR by reference.

7.3.3 Primacy Revision Crosswalk

EPA strongly encourages states to complete and submit with the primacy application the Primacy Revision Crosswalk in Appendix A. The Crosswalk captures federal requirements and citations for the RTCR and provides a space for the state to include the corresponding state regulatory language and citation, allowing for a direct comparison. If the state's language differs from the federal language, the state must explain how the difference is "no less stringent" and provide supporting documentation if requested by EPA. The explanation should be included in the last column of the crosswalk ["Different from the Federal Requirements? (Explain on a different sheet)"]. Given the detail of EPA's review, the process may be accelerated when the state provides the justification upfront with the crosswalk.

If in the state regulatory language a reference is omitted or changed, the state needs to include an explanation as to why leaving out or changing the reference is not less stringent. For example:

- If a federal citation is to a very specific monitoring requirement but the state regulatory language more generally references all of the monitoring requirements, the state should explain in the crosswalk that the more general requirement was included to ensure that the state had all related authority to ensure compliance. In EPA's review, since the more general cite includes the more specific site, the state program would not be considered less stringent for this change.

- If the state omits a citation but includes the regulatory language instead, the state should explain that the language was included to make it easier for the reader by reducing how many times the reader has to flip to another section of the regulation. In EPA's review, since the regulatory language is the same, the state program would not be considered less stringent for this change.

- If the state omits a citation and does not provide an explanation, EPA will ask the state for an explanation.

7.3.4 State Reporting and Recordkeeping Checklist [40 CFR 142.14 and 40 CFR 142.15]

The RTCR adds eight new state recordkeeping requirements and one new state reporting requirement. The new state recordkeeping requirements at 40 CFR 142.14(a)(10)(i) and (ii) indicate that the state must maintain:

1. Records of any case-by-case decision to waive the 24-hour time limit for collecting repeat samples after a TC+ routine sample, or to extend the 24-hour limit for collection of samples following invalidation, or for an unfiltered Subpart H system to collect a total coliform sample following a turbidity measurement exceeding 1 NTU. These records must be retained for five years [40 CFR 142.14(a)(10)(i)(A)].

2. Records of any decision to allow a PWS to waive the requirement for three routine samples the month following a TC+ sample. The record of the waiver decision must contain all the items listed in those sections [40 CFR 142.14(a)(10)(i)(B)]. The record of the waiver decision must contain all the items listed in 40 CFR 141.854(j) and 40 CFR 141.855(f). These records must be retained for five years [40 CFR 142.14(a)(10)(i)(B)].

3. Records of any decision to invalidate a TC+ sample. The record of the decision to invalidate must contain all the items listed in 40 CFR 141.853(c)(1). These records must be retained for five years [40 CFR 142.14(a)(10)(i)(C)].

4. Records of any completed and approved 40 CFR 141, Subpart Y (RTCR) assessments, including reports from the PWS that corrective action has been completed as required by 40 CFR 141.861(a)(2). These records must be retained for five years [40 CFR 142.14(a)(10)(i)(D)].

5. Records of any decision to reduce the total coliform monitoring frequency for a NCWS using only ground water and serving 1,000 or fewer people to less than once per quarter, including what the reduced frequency is. A copy of the reduced monitoring frequency must be provided to the NCWS. These records must be retained in such a manner so that each system's current status may be determined [40 CFR 142.14(a)(10)(ii)(A)].

6. Records of any decision to reduce the total coliform monitoring frequency for a CWS serving 1,000 or fewer people to less than once per month, including what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the CWS. These records must be retained in such a manner so that each system's current status may be determined [40 CFR 142.14(a)(10)(ii)(B)].

7. Records of any decision to reduce the total coliform monitoring frequency for a NCWS using only ground water and serving more than 1,000 people during any month the PWS serves 1,000 or fewer people. A copy of the reduced monitoring frequency must be provided to the NCWS. These records must be retained in such a manner so that each system's current status may be determined [40 CFR 142.14(a)(10)(ii)(C)].

8. Records of any decision to forgo *E. coli* testing of a TC+ sample if that PWS assumes that the TC+ sample is *EC*+. These records must be retained in such a manner so that each system's current status may be determined [40 CFR 142.14(a)(10)(ii)(D)].

Under the new reporting requirements in the RTCR [40 CFR 142.15(c)(3)], the state must report:

1. A list of PWSs that the state is allowing to monitor less frequently than once per month for CWSs, or less frequently than once per quarter for NCWSs, including the applicable date of the reduced monitoring requirement of each PWS [40 CFR 142.15(c)(3)].

The state should use the Primacy Revision Crosswalk in Appendix A to demonstrate that state reporting and recordkeeping programs meet the federal requirements of 40 CFR 142.14 and 40 CFR 142.15. If state requirements are not the same as federal requirements, the state must explain how its requirements are "no less stringent," as required under 40 CFR 142.10. All records must be auditable and accessible to EPA.

7.3.5 Special Primacy Requirements [40 CFR 142.16]

Special primacy conditions pertain to specific provisions, where implementation of the rule involves activities beyond general primacy provisions. States must include these RTCR-distinct provisions in an application for approval or revision of their program. The Special Primacy Requirements section of the Primacy Revision Crosswalk in Appendix A is where the state has the opportunity to describe how it will satisfy these provisions. Section 7.4 provides guidance on how states may choose to meet the Special Primacy Requirements of the RTCR.

7.3.6 Attorney General's Statement of Enforceability [40 CFR 142.12(c)(2)]

The complete and final primacy revision application must include an Attorney General's Statement certifying that the state regulations were duly adopted and are enforceable (unless EPA has waived this requirement by letter to the state). The Attorney General's Statement should also certify that the state does not have any audit privilege and/or immunity laws or, if it has such laws, that these laws do not prevent the state from meeting the requirements of the SDWA. If a state has submitted this certification with a previous revision package, then the state should indicate the date of submittal and the Attorney General need only certify that the status of the audit privilege and/or immunity laws has not changed since the prior submittal.

An example of an Attorney General's Statement is presented in Example 7-2. A copy of this letter is also included in Appendix C for readers to pull out and use.

Example 7-2. Example Attorney General's Statement

Model Language

I hereby certify, pursuant to my authority as (1) and in accordance with the Safe Drinking Water Act as amended, and (2), that in my opinion the laws of the [State/Commonwealth of (3)] [or tribal ordinances of (4)] to carry out the program set forth in the "Program Description" submitted by the (5) have been duly adopted and are enforceable. The specific authorities provided are contained in statutes or regulations that are lawfully adopted at the time this Statement is approved and signed and will be fully effective by the time the program is approved.

I. For States with No Audit Privilege and/or Immunity Laws

Furthermore, I certify that [State/Commonwealth of (3)] has not enacted any environmental audit privilege and/or immunity laws.

II. For States with Audit Privilege and/or Immunity Laws that do Not Apply to the State Agency Administering the Safe Drinking Water Act

Furthermore, I certify that the environmental [audit privilege and/or immunity laws] of the [State/Commonwealth of (3)] do not affect the ability of (3) to meet enforcement and information gathering requirements under the Safe Drinking Water Act because the [audit privilege and/or immunity laws] do not apply to the program set forth in the "Program Description." The Safe Drinking Water Act program set forth in the "Program Description" is administered by (5); the [audit privilege and/or

immunity laws] do not affect programs implemented by (5), thus the program set forth in the "Program Description" is unaffected by the provisions of [State/Commonwealth of (3)] [audit privilege and/or immunity laws].

III. For States with Audit Privilege and/or Immunity Laws that Worked with EPA to Satisfy Requirements for Federally Authorized, Delegated or Approved Environmental Programs

Furthermore, I certify that the environmental [audit privilege and/or immunity laws] of the [State/Commonwealth of (3)] do not affect the ability of (3) to meet enforcement and information gathering requirements under the Safe Drinking Water Act because [State/Commonwealth of (3)] has enacted statutory revisions and/or issued a clarifying Attorney General's Statement to satisfy requirements for federally authorized, delegated or approved environmental programs.

Seal of Office

_____
Signature

_____
Name and Title

_____
Date

(1) State Attorney General or attorney for the primacy agency if it has independent legal counsel.
(2) 40 CFR 142.11(a)(6)(i) for initial primacy applications or 40 CFR 142.12(c)(1)(iii) for primacy program revision applications.
(3) Name of state or commonwealth.
(4) Name of tribe.
(5) Name of primacy agency.

7.3.6.1 Guidance for States on Audit Privilege and/or Immunity Laws

In order for EPA to properly evaluate the state's request for approval, the State Attorney General or independent legal counsel should certify that the state's environmental audit privilege and/or immunity laws do not affect its ability to meet enforcement and information gathering requirements under the SDWA. This certification should be reasonably consistent with the wording of the state audit laws and should demonstrate how state program approval criteria are satisfied.

EPA applies the criteria outlined in its "Statement of Principles" memo issued on February 14, 1997 to determine whether states with audit laws have retained adequate enforcement authority for any authorized federal programs. The principles articulated in the Guidance are based on the requirements of federal law, specifically the enforcement and compliance and state program approval provisions of environmental statutes and their corresponding regulations. The principles provide that if provisions of state law are ambiguous, it will be important to obtain opinions from the State Attorney General, or independent legal counsel, interpreting the law as meeting specific federal requirements. If the law cannot be so interpreted, changes to state laws may be necessary to obtain federal program approval. Before submitting a package for approval, states with audit privilege and/or immunity laws should initiate communications with appropriate EPA Regional offices to identify and discuss the issues raised by the state's audit privilege and/or immunity laws.

7.4 Guidance for the Special Primacy Requirements of the RTCR

In addition to adopting the basic primacy requirements specified in 40 CFR 142, states must adopt primacy provisions pertaining to specific regulations where implementation of the rule involves activities beyond general primacy provisions. The purpose of these provisions is to allow state flexibility in implementing a regulation that: (1) applies to specific water system configurations within the state; and (2) can be integrated with a state's existing PWSS Program. States must include these rule-distinct provisions in their complete and final primacy revision application.

This Section contains information and guidance that states can use when addressing the Special Primacy Requirements of the RTCR. Section 142.16(q)(2) requires a state's application for primacy for 40 CFR 141, Subpart Y to include a written description for each provision included in 40 CFR 142.16(q)(2)(i) through (viii). The Guidance addresses Special Primacy Conditions in the same order that they occur in the Rule.

In the state primacy revision application package, the state must explain, among other things, how it intends to accomplish the requirements of 40 CFR 142.16. States that adopt the RTCR by reference can make this demonstration by showing they have adopted the federal rule by reference (i.e., 40 CFR 141, Subpart Y). For those not adopting by reference, the Special Primacy Requirements may be satisfied by including a description of the statutes, rules and policies the state will use to ensure compliance with the RTCR and a description of any program changes the state will make to implement these authorities. The appropriate section(s) of each source of authority must be cited and copies of the written documents must be included in the revision application. In addition, states must describe their authority to take administrative or legal actions and assess penalties.

7.4.1 Special Primacy Requirements Regarding Baseline and Reduced Monitoring

> *40 CFR 142.16(q)(1) - Special primacy requirements. The state's application for primacy for Subpart Y must indicate what baseline and reduced monitoring provisions of 40 CFR part 141, Subpart Y the state will adopt and must describe how the state will implement these provisions.*

Guidance

The state must describe its baseline monitoring criteria and which reduced monitoring criteria the state will adopt, if any. Subpart Y allows the state to reduce monitoring for ground water systems serving 1,000 or fewer people (see 40 CFR 141.854 and §141.855). In addition, Subpart Y specifies that a NCWS on quarterly or annual monitoring is triggered into increased monthly monitoring if it experiences any of the events specified in 40 CFR 141.854(f)(1) through (f)(4); while a CWS on quarterly monitoring is triggered into monthly monitoring under 40 CFR 141.855(e)(1) through (e)(4). A NCWS on annual monitoring is triggered into quarterly monitoring if it experiences the event specified in 40 CFR 141.854(f)(5).

The state must provide descriptions for the following monitoring provisions:

1. The application must describe how the state will implement these provisions, the specific types or categories of PWSs that will be covered by reduced monitoring, and whether the state will use all or a reduced set of the criteria specified in 40 CFR 141.854(h)(2) and §141.855(d)(1)(iii) to determine the PWSs eligible for reduced monitoring.

2. If the state allows a less-than-monthly monitoring frequency (e.g., quarterly or annual), it must also describe the criteria it will adopt to allow a system to return to less-than-monthly monitoring

after it has been triggered into more frequent (increased) monitoring [see 40 CFR 141.854(g), §141.854 (h), and §141.855(d)].

3. If the state will not allow a system to return from its more frequent monitoring schedule (e.g., monthly) after being triggered into that schedule, to a less frequent monitoring schedule (e.g., quarterly), the state must indicate this in the primacy crosswalk.

4. If the state requires routine monthly monitoring for all systems, then it must describe its baseline criteria only, and stipulate in its primacy package that it is not adopting the reduced monitoring provisions of 40 CFR 141.854 and §141.855.

Note that although it is not covered in Subpart Y, a state could require a monthly baseline monitoring schedule for non-community ground water systems serving 1,000 or fewer people, instead of the quarterly baseline provided in Subpart Y, and could allow reduced quarterly monitoring but not annual. Note also that in this situation, a system on reduced quarterly monitoring may not remain on quarterly monitoring if it triggers the return to monthly monitoring criteria specified in 40 CFR 141.854(f). If a state adopts provisions such as these, it must describe the criteria used to implement the program as described in item 1 above.

Section 7.4.3 addresses how states will determine whether PWSs qualify for reduced monitoring, and Section 7.4.9 addresses how states will require PWSs to demonstrate the additional criteria that are required for CWSs on reduced monitoring.

7.4.2 Special Primacy Requirements Regarding Sample Siting Plans

> *40 CFR 142.16(q)(2) - Special primacy requirements. The state's application for primacy must include a written description for… (i) Sample Siting Plans - The frequency and process used to review and revise sample siting plans in accordance with 40 CFR part 141, Subpart Y to determine adequacy.*

Guidance

PWSs must develop sample siting plans that identify sampling locations and schedules representative of the water in the distribution system. States' applications must demonstrate how they will evaluate each sample siting plan, describing the process that will be used to review and revise the plans. This provision of the RTCR is designed to allow the state flexibility with respect to how the review and how the revision of siting plans will be conducted. For many states, the implementation of this provision may be consistent with their practices under the TCR. States are encouraged to communicate with their PWSs about the deadline when the PWSs must update its sample siting plan to meet state/EPA requirements.

7.4.2.1 Review Frequency

The primacy application must describe the frequency at which the state will review sampling plans. In describing the frequency of sampling plan reviews, the state should be specific about the minimum time interval between sampling plan reviews for water systems. States could consider linking the review and revision of the sample siting plan to:

- Changes in PWS type and/or source of supply. For example, states should review a sampling plan when a system goes from being a NCWS to CWS or when a PWS adds a different source type (e.g., a ground water only system begins using a surface water, GWUDI or blended surface water/GWUDI source(s)).

- The sanitary survey conducted at 3- to 5-year intervals for all PWSs.

- PWS size or type. For instance, the state may decide that CWSs need more frequent reviews than NTNCWSs, and TNCWSs may require them even less frequently. Or, the state can decide that systems serving a certain population may need more frequent reviews. For instance, water systems serving fewer than 10,000 people have a more narrow range between population fluctuations to the change in the required minimum number of samples. In addition, water systems serving greater than five million people may require a special review to determine if the minimum number of samples is appropriate for the population served, and given the complexity and size of the distribution system.

- Any major change to the water system's infrastructure that changes the layout or geographic area of the distribution system or pressure zones. This option could include a requirement for the submittal of a sample siting plan along with the construction plans and specifications (if these are reviewed by the state), prior to any change to the PWS.

- Changes in disinfection practices or treatment technologies. For instance, systems that install aeration technology, which could decrease the level of disinfectant residual in the distribution system, may benefit from review to determine if sampling locations should be moved to vulnerable areas. Also, systems that change type of disinfection to begin using chloramination may experience greater biofilm growth in certain areas of the distribution system and could benefit from sampling plan reviews to determine if sampling locations should be moved to critical areas.

7.4.2.2 Review and Revision Process

The primacy application must address the review and revision process the state will undertake to ensure the adequacy of the PWS's sample siting plan. If not reviewed on-site, the state should identify alternatives as to how and when they will review the plan (e.g., permit revisions or modifications, or changes to system infrastructure) and how the state will communicate any input on the plan to the PWS and record in the state's drinking water database.

The primacy application should confirm that the state's review will consider such items as the sampling locations, the sampling schedule and other items including:

- Routine, repeat, additional routine and triggered source monitoring under the GWR. Considerations can include ensuring that: the sites are representative of quality throughout the distribution system; each pressure zone is represented; and there are sites in areas of high water age, areas served by each source and areas served by each storage tank.

- Whether the system is taking the correct number of routine samples based on the population served by the PWS.

- The rationale for any alternative site selections (i.e., sites other than within five service connections upstream and downstream of the positive result), and how the PWS has determined that a site is representative of a pathway for contamination.

- Whether ground water systems serving 1,000 or fewer people that intend to use dual purpose sampling sites (for both repeat samples under the RTCR and triggered source water monitoring sites under the GWR) have clearly identified these sites in their siting plans and the rationale for the use of any dual purpose sites. If a PWS proposes sampling at one or more entry points in order to differentiate between potential source water and distribution system contamination, the plan review should include consideration of how representative entry point sampling would be of source water quality.

- An evaluation of the most vulnerable or critical months for monitoring for PWSs that are monitoring quarterly or annually.

The process for obtaining revisions to sampling plans must be included in the primacy application and could include the state reviewer making modifications directly to the plan itself or requiring the PWS to make changes based on the state's review. States review and revise the plans, as appropriate, to ensure that the PWS will meet the requirements of the RTCR.

7.4.3 Special Primacy Requirements Regarding Reduced Monitoring Criteria

> *40 CFR 142.16(q)(2) - Special primacy requirements. The state's application for primacy for Subpart Y must include a written description for… (ii) Reduced Monitoring Criteria - An indication of whether the state will adopt the reduced monitoring provisions of 40 CFR part 141, Subpart Y. If the state adopts the reduced monitoring provisions, it must describe the specific types or categories of water systems that will be covered by reduced monitoring and whether the state will use all or a reduced set of the additional mandatory criteria. For each of the reduced monitoring criteria, both mandatory and additional selection(s), the state must describe how the criteria will be evaluated to determine when water systems qualify.*

This section addresses how states will determine whether PWSs qualify for reduced monitoring. Section 7.4.9 addresses how states will require PWSs to demonstrate the additional criteria that are required for CWSs on reduced monitoring.

Guidance

In their applications, states must indicate whether they will adopt the reduced monitoring provisions that allow ground water systems serving 1,000 or fewer people to reduce sampling. In the event that a state adopts the reduced monitoring requirements, the state must describe in its primacy package the specific types or categories of PWSs that will be covered by reduced monitoring and whether the state will use all or a reduced set of the additional mandatory criteria. Table 7-4 identifies the mandatory and additional selected criteria for reduced monitoring eligibility by PWS type.

Table 7-4. Reduced Monitoring Criteria

Reduced Monitoring Criteria	NCWSs (from quarterly to no less than annually) [40 CFR 141.854(e)]	CWSs (from monthly to no less than quarterly) [40 CFR 141.855(d)]
Clean compliance history – 12 months	Mandatory	Mandatory
No sanitary defects in most recent sanitary survey (or corrected all sanitary defects)	Mandatory	Mandatory
Protected water supply	Mandatory	Mandatory
Meets approved construction standards	Mandatory	Mandatory
Annual site visit by state	Mandatory	Mandatory Additional[2]
Cross-connection control program	Mandatory Additional[1]	Mandatory Additional[2]
Continuous disinfection entering distribution and residual in distribution in accordance with criteria specified by state	Mandatory Additional[1]	Mandatory Additional[2]
4-log demonstration of removal or inactivation of viruses under 40 CFR 141.403(b)(3)	Mandatory Additional[1]	Mandatory Additional[2]

Reduced Monitoring Criteria	NCWSs (from quarterly to no less than annually) [40 CFR 141.854(e)]	CWSs (from monthly to no less than quarterly) [40 CFR 141.855(d)]
Other equivalent enhancements approved by the state	Mandatory Additional[1]	Mandatory Additional[2]
Certified operator or regular visits by a state certified circuit rider	Mandatory Additional[1]	N/A
Certified operator provisions	N/A	Mandatory

1. Select one or more of the criteria from 40 CFR 141.854(h)(2).
2. Select one or more of the criteria from 40 CFR 141.855(d)(iii).

The state must describe how each adopted criteria (mandatory and mandatory additional selection(s)) will be evaluated to determine when a PWS qualifies for reduced monitoring. The review process that a state proposes should ensure that the PWS is well-operated and that effective barriers are in place to provide appropriate risk mitigation such that reduced monitoring does not pose a risk to public health.

The state may consider allowing reduced monitoring for ground water CWSs serving 1,000 or fewer people, ground water NCWSs serving 1,000 or fewer people, or both PWS types. They may also consider allowing (or not allowing) reduced monitoring for a smaller subset of either PWS type. For instance, the state may decide to allow reduced monitoring for TNCWSs serving no more than 1,000 people but not allow NTNCWSs or water systems that have a food establishment permit to reduce monitoring. The state may also set the PWS size for reduced monitoring at a lower population level than 1,000 people.

The state's primacy revision application must declare which and/or what combinations of the mandatory additional criteria for CWSs the state will require. It must also describe how the state will evaluate whether a PWS applying for reduced monitoring meets each of the mandatory and the mandatory additional criteria. Options for addressing the criteria will fall on the PWS, on the state or on a combination of both and could include:

- Requiring the PWS to submit a request for reduced monitoring accompanied by a list of each applicable criterion, and a certification that the PWS has met each criterion. This option puts a relatively low burden on both the state and the PWS.

- An evaluation of each criterion during the annual site visit. Some of the criteria could likely be verified through a review of documentation (e.g., certified operator license, copies of compliance results, or a copy of the most recent sanitary survey) and others through visual inspection (e.g., treatment system or water supply protection efforts).

- Requiring the PWS to submit a request for reduced monitoring accompanied by documentation of each of the criteria (e.g., copy of the certified operator license, compliance results, a copy of the most recent sanitary survey, documentation of source protection). This approach puts most of the burden on the PWS.

- Requiring the PWS to only submit a request for reduced monitoring and following up the request with a file review by the state programs to determine compliance with each criterion.

7.4.4 Special Primacy Requirements Regarding Assessments and Corrective Actions

40 CFR 142.16(q)(2) - Special primacy requirements. The state's application for primacy for Subpart Y must include a written description for… (iii) Assessments and Corrective Actions — The process for implementing the new assessment and corrective action phase of the rule, including… (A) Elements of Level 1 and Level 2 assessments. This must

include an explanation of how the state will ensure that Level 2 assessments provide a more detailed examination of the water system (including the water system's monitoring and operational practices) than do Level 1 assessments through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices. (B) Examples of sanitary defects. (C) Examples of assessment forms or formats. (D) Methods that systems may use to consult with the state on appropriate corrective actions.

Guidance

For this Special Primacy Requirement, states must describe the process for implementing the assessment and corrective action phases of the Rule. EPA believes many states have existing authorities that are adequate to comply with the intent of this Special Primacy Requirement. These authorities can often be found in broad statutory language designed to provide public health protection. However, EPA does not believe that states' existing authorities to address imminent and substantial endangerment, in general, are sufficient to meet this Special Primacy Requirement. This is because the authority must be specific enough to allow the state to require correction of conditions that have the potential for causing the introduction of contamination into the water delivered to consumers. The state must have authority to require expedited actions to address any areas of concern from the assessment and to require correction of all sanitary defects, including when the sanitary defect(s) does not rise to the level of imminent and substantial endangerment. The authority under the Ground Water Rule to require systems to correct significant deficiencies may not be sufficient because not all significant deficiencies are sanitary defects, and because the state may only have this authority for GWR-covered water systems instead of all PWSs affected by the RTCR.

In the primacy revision application, states must:

- Explain how Level 2 assessments will provide a more detailed examination of the PWS (including the PWS's monitoring and operational practices) than Level 1 assessments. In order to show the differences in the level of analysis and examination, states can use more comprehensive investigations and reviews of available information, additional internal and external resources and other relevant practices to perform Level 2 assessments.

- Provide examples of sanitary defects, examples of assessment forms or formats and methods that PWSs may use to consult with the state on appropriate corrective actions. The state may want to address how findings will be communicated to the PWS.

- Address their authority to take administrative or legal actions and assess penalties. Also, states may wish to include a description of how the appropriate rules or other authority, including formal enforcement actions, will be used to ensure that PWSs take the necessary steps to correct sanitary defects.

In order for states to demonstrate how they will ensure that Level 2 assessments are more comprehensive than what is required for a Level 1 assessment, the primacy application should explain how each element of each type of assessments will be considered complete. For instance, if a system experiences an atypical event that may affect water quality or indicate the impairment of water quality, a Level 1 assessment may require the operator to provide documentation noting the event. Under a Level 2 assessment, however, the state may require independent third-party documentation, such as pumping or usage record or documentation of customer complaints of taste and odor problems. Similarly, in the assessment of monitoring data, under a Level 1 assessment, the state may review (or require the submission of) monitoring data from a limited timeframe. For a Level 2 assessment, the state could require the review of more extensive monitoring data, such as a monitoring data that covered the previous 12-month period.

In addition, states must also describe the criteria they will use for the approval of Level 2 assessors. See Section 7.4.6 below for additional information on this special primacy requirement. More information on assessments and corrective actions can be found in the *Revised Total Coliform Rule Assessments and Corrective Actions Guidance Manual Interim Final*. EPA 815-R-14-006. September 2014. Available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-assessments-and-corrective-actions.

7.4.4.1 Sanitary Defects

In addition to adopting an equivalent definition to sanitary defect, the state must also provide examples of sanitary defects that could provide a pathway of entry for microbial contamination into the distribution system or that are indicative of a failure or imminent failure of a barrier that is already in place. Some sanitary defects the state might consider include:

- Source issues, including shallow well or inadequate well construction (including unscreened well vents or covers with no sanitary seals) or activity in wellhead areas, which could result in contamination.
- Treatment issues, including lack of redundancy, history of failures in treatment or history of power outages that interrupt treatment.
- Water mains of inadequate construction or material.
- Inadequate distribution system pressures.
- Potential cross connection(s).
- Inadequate tank controls resulting in poor turnover.
- Improperly screened storage tank vents.

Some states may wish, in the rulemaking process, to identify specific sanitary defects and provide authority to require the correction of each of the identified defects. This has the added benefit of establishing a transparent process that ensures the state's administrative procedural requirements are met.

The state may want to address the differences between a sanitary defect (identified during a Level 1 or Level 2 assessment indicating a pathway for microbial contamination or barrier failure) and a significant deficiency (usually identified during a sanitary survey). Each of these poses a potential public health risk and a sanitary defect may also be identified as a significant deficiency. However, these two types of identified risks have differing compliance implications.

7.4.4.2 Example Forms

The state must provide examples of assessment forms or formats that will be used for Level 1 and 2 assessments. Example assessment forms can be found in the *Revised Total Coliform Rule Assessments and Corrective Actions Guidance Manual*. See Section 8.1 of this document for more information.

7.4.4.3 Consultation

The state must identify methods that PWSs can use to consult with the state about appropriate corrective actions. If a sanitary defect has already been addressed by the time the system submits the assessment

report, it may be adequate for the PWS to provide details of the sanitary defect, the taken corrective action and how the corrective action addressed the defect.

For defects that have not been addressed before submittal of the report, the corrective action must be completed in compliance with a timetable approved by the state, and the PWS must notify the state when each scheduled corrective action has been completed. At any time during the assessment or the corrective action, either the PWS or the state may request a consultation to determine the appropriate actions to be taken (including timeframe). The methods for communicating the appropriateness of the proposed corrective action must be outlined in the primacy application.

7.4.5 Special Primacy Requirements Regarding Invalidation of Routine or Repeat Samples

> *40 CFR 142.16(q)(2) - Special primacy requirements. The state's application for primacy for Subpart Y must include a written description for… (iv) Invalidation of routine and repeat samples collected under 40 CFR part 141, Subpart Y —The criteria and process for invalidating total coliform and EC+ samples under 40 CFR part 141, Subpart Y. This description must include criteria to determine if a sample was improperly processed by the laboratory, reflects a domestic or other non-distribution system plumbing problem or reflects circumstances or conditions that do not reflect water quality in the distribution system.*

Guidance

This Special Primacy Requirement addresses a state's criteria and process for invalidating routine or repeat samples. States must describe the criteria they will use to determine if a sample was improperly processed by a laboratory, reflects a domestic or other non-distribution system plumbing problem or reflects circumstances or conditions that do not reflect water quality in the distribution system.

For this Special Primacy Requirement, states must describe criteria they will use to determine whether a positive sample does not reflect the true distribution system water quality and should, therefore, be invalidated. Criteria should not be based solely on a belief that improper sample collection procedures were used. Suspected improper sample collection procedures are not considered adequate cause, because a sample collector handling error would not be expected to cause contamination.

A state may invalidate a TC+ sample result only if one or more of the following conditions are met:

- If the laboratory establishes that improper sample analysis caused the TC+ result.
  - In this case, the PWS must collect another sample from the same location within 24 hours of being notified by the state of its invalidation decision, and have that sample analyzed for total coliform. The state may extend the 24-hour time limit (see Section 7.4.10 for more information).
  - The state should document in writing its decision to invalidate a sample and the rationale for the decision. The decision should be approved and signed by the supervisor or the state official who recommended the invalidation, and the document should be made available to EPA and the public upon request. The written documentation should state the specific cause of the TC+ or *EC+* sample and what action was taken by the PWS in response.

- The state determines that the TC+ sample resulted from a domestic or other non-distribution system plumbing problem based on the results of repeat samples.
  - This invalidation can only be allowed if the repeat sample(s) collected at the same tap as the original TC+ sample is also TC+, and all repeat samples collected at other locations are not TC+.
  - The state should document its decision to invalidate a sample, along with the rationale for the decision, in writing. The decision should be approved and signed by the supervisor or the state official who recommended the invalidation, and the document should be made available to EPA and the public upon request. The written documentation should state the specific cause of the TC+ sample and what action was taken by the PWS in response.
- The state has substantial grounds to believe that a TC+ result is due to a circumstance or condition that does not reflect water quality in the distribution system.
  - In this case, the PWS must still collect all repeat samples and use them to determine whether a coliform TT-trigger has been exceeded.
  - The state should document its decision to invalidate a sample, along with the rationale for the decision, in writing. The decision should be approved and signed by the supervisor or the state official who recommended the invalidation, and the document should be made available to EPA and the public upon request. The written documentation should state the specific cause of the TC+ sample and what action was taken by the PWS in response.
  - The state may not invalidate a TC+ sample solely on the grounds that all repeat samples are not TC+.

7.4.6 Special Primacy Requirements Regarding Approval of Individuals Allowed to Conduct Level 2 Assessments

40 CFR 142.16(q)(2) - Special primacy requirements. The state's application for primacy for Subpart Y must include a written description for… (v) Approval of Individuals Allowed to Conduct Level 2 Assessments under 40 CFR 141, Subpart Y—The criteria and process for approval of individuals allowed to conduct Level 2 assessments under 40 CFR Part 141, Subpart Y.

Guidance

This Special Primacy Requirement addresses a state's rules or other authorities under which the state can qualify individuals to conduct Level 2 assessments. Whereas Level 1 assessments can be performed by the PWS, the RTCR requires the state or a party approved by the state to conduct Level 2 assessments. In its primacy revision application, the state must describe the criteria and process that will be used to qualify individuals to conduct Level 2 assessments. States may wish to include in their applications whether or not they will consider approving PWSs to perform Level 2 assessments.

States may consider both the qualifications of the assessor as well as water system specifics when approving Level 2 assessors. Qualifications to consider include whether the assessor should be a member of the state staff, a licensed professional engineer hired by the state or PWS, a PWS professional (circuit rider or contract operator) or a certified operator at the PWS. Information related to the PWS may also be a consideration and may include PWS size, source type and history such as ongoing microbial contamination issues. A higher level of qualification may be required for a larger and/or more complicated PWS. Table 7-5 is an example of Level 2 assessor criteria.

Regarding the process associated with Level 2 assessor approval, the state should consider an application or certification process in which a potential assessor provides qualifications to the state and requests certification as a Level 2 assessor for a given type of PWS. The primacy application should identify what documentation the state will require during the application/certification process.

The state can consider qualifying Level 2 assessors on a case-by-case basis as PWSs become in need of a Level 2 assessment; however, the state must still provide qualification criteria and a description of the approval process.

7.4.7 Special Primacy Requirements Regarding Special Monitoring Evaluations

> *40 CFR 142.16(q)(2) - Special primacy requirements. The state's application for primacy for Subpart Y must include a written description for… (vi) Special Monitoring Evaluation — The procedure for performing special monitoring evaluations during sanitary surveys for ground water systems serving 1,000 or fewer people to determine whether water systems are on an appropriate monitoring schedule.*

Guidance

This Special Primacy Requirement addresses the state's rules or other authorities for performing special monitoring evaluations performed during sanitary surveys of ground water systems serving 1,000 or fewer people. The evaluations aim to determine whether the PWS is on an appropriate monitoring schedule (i.e., monthly, quarterly, annually) and has the appropriate number of samples, and is monitoring at the appropriate locations; and whether a seasonal system is monitoring during an appropriately designated time period.

The sanitary survey, that must be conducted for each PWS on a three- to five-year basis, provides a convenient opportunity for the state to evaluate the PWS's existing monitoring schedule (under the TCR) and determine the appropriateness of applying it under the RTCR. The state's primacy application must identify procedures that the state will use to evaluate the monitoring schedule and the factors that will be used in the review including; the PWS's water quality and compliance history, as well as the establishment and maintenance of contamination barriers and other appropriate protections. The state should consider the criteria used to determine the current monitoring schedule, as well as the PWS's performance since that decision was made.

The evaluation may result in samples being taken during the site visit and in the state modifying the PWS's monitoring schedule. The state may amend the PWS's sampling schedule as a result of this evaluation; however, it may not change the PWS's schedule to less frequent monitoring unless the PWS has already met the criteria for reduced monitoring. The state may not approve that a PWS go on a reduced monitoring schedule during the special monitoring evaluation in anticipation of changes the PWS intends to make to meet reduced monitoring criteria.

The primacy application should also consider including guidance as to what situations or criteria may result in the PWS losing its reduced monitoring status. In general, these criteria would be based on the reviewer's concern that sampling on a quarterly or annual basis would not be adequate to identify microbial contamination.

7.4.8 Special Primacy Requirements Regarding Seasonal Systems

40 CFR 142.16(q)(2) - Special primacy requirements. The state's application for primacy for Subpart Y must include a written description for… (vii) Seasonal Systems —How the state will identify seasonal systems, how the state will determine when systems on less than monthly monitoring must monitor, and what start-up provisions seasonal system must meet under 40 CFR Part 141, Subpart Y.

Guidance

This Special Primacy Requirement addresses a state's rules or other authorities to ensure that seasonal systems comply with the RTCR requirements under 40 CFR 141, Subpart Y. The state must describe how it will identify seasonal systems as defined in 40 CFR 141.2, how it will determine monitoring schedules for seasonal systems on less than monthly routine coliform monitoring and what start-up procedures seasonal systems must meet.

7.4.8.1 Identifying Seasonal Systems

The RTCR defines a seasonal system as a NCWS that is not operated as a PWS on a year-round basis and starts up and shuts down at the beginning and end of each operating season [40 CFR 141.2]. In its primacy application, the state must describe how these PWSs will be identified in the state's PWS inventory. Some options states could consider for this identification include:

- Using the state's database (SDWIS/State or other) if it includes a field to categorize PWSs that operate seasonally. Use of this database would be a straight-forward and an efficient approach to this task.
- Reviewing historic TCR sampling data to identify PWSs that have had gaps in sampling, or reviewing distribution system pressurization information to flag or indicate potential seasonal systems.
- Using an outreach program in which NCWSs receive a mailer summarizing the implications of the RTCR and a request to indicate whether the system is a seasonal system. The mailer could also ask for the time period of operation.
- Referring to the sanitary survey or other site visit information to determine whether systems are classified as seasonal systems.

7.4.8.2 Determining Monitoring Frequencies for Seasonal Systems

The state must describe how it will determine monitoring schedules for seasonal systems on less than monthly routine coliform monitoring.

In determining eligibility, the state must consider certain criteria before allowing eligible systems to monitor quarterly or annually. Eligible seasonal water systems must meet **ALL** of the following criteria to qualify for monitoring less than monthly:

- Has a clean compliance history for a minimum of 12 months:
  - In accordance with 40 CFR 141.2; a clean compliance history means having a record of no *E. coli* MCL violations under 40 CFR 141.63; no monitoring violations under 40 CFR 141, Subpart Y; and no TT-triggers of a Level 1 or Level 2 assessment or TT violations under 40 CFR 141, Subpart Y.

- Has a protected water source.
- Meets approved construction standards.
- Most recent sanitary survey was conducted at appropriate frequency and covered all eight elements.
- Most recent sanitary survey shows that the system is free of sanitary defects or has corrected all identified sanitary defects.
- The state has conducted an annual site visit within the last 12 months and the system has corrected all identified sanitary defects.

A system is not eligible to reduce monitoring to less than monthly if the system is:

- A seasonal system that uses a surface water, GWUDI or surface water/GWUDI blended source.
- A seasonal system that uses only ground water and serves 1,000 or fewer people and the system triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period; has an *E. coli* MCL violation; a coliform TT violation; two RTCR monitoring violations in a rolling 12-month period; or one RTCR monitoring violation and one Level 1 assessment in a rolling 12-month period.

7.4.8.3 Seasonal Systems: Determining the Appropriate Timeframe for Monitoring

In any month where a seasonal system using only ground water serves more than 1,000 people, the PWS must monitor monthly [40 CFR 141.857(d)].

If a seasonal system using only ground water meets the reduced monitoring criteria and is on quarterly or annual monitoring, the system must sample during the time period approved by the state. In its primacy application, the state must identify how this time period will be determined. Some site-specific considerations the state should address when determining the optimal time for monitoring include sampling:

- During the period of highest demand. Although it is difficult to predict when peak demand will occur, seasonal systems may be able to anticipate when the population served will be highest or during planned events when usage is likely to be greatest.
- During the period when the source is most vulnerable to contamination (e.g., wet season).
- During the period of highest water age and most stagnant water in the distribution system.
- After potential sources of contamination are introduced to a well's zone of influence (e.g., the spreading of animal waste for fertilizer).

7.4.8.4 Start-up Provisions

The primacy application must describe the state's approved start-up procedures that seasonal NCWSs must follow prior to placing a PWS back into service after it has been out of service. In addition, states must describe the criteria for exempting any seasonal water systems from conducting some or all of the state-approved start-up procedures. If the state decides to alter its current procedures, or if the state does

not currently have seasonal system start-up requirements, EPA recommends that some or all of the following start-up steps be required of seasonal systems prior to serving water to the public:

- Inspect water system components, including source(s), treatment components, distribution lines and storage tanks. Address any issues.
- Open hydrants and/or faucets. Drain storage facilities.
- Activate source(s) and flush water through the distribution system.
- Chlorinate the water system and leave chlorinated water in the distribution system for at least 24 hours. Flush the water system to void any highly chlorinated water.
- Collect coliform samples at key locations in the distribution system to ensure that the PWS is free of microbial contamination.
- Have a site visit conducted by the state or state-approved third party.
- Verify that any historical or current sanitary defects have been corrected.

In addition, the state should provide clear timeframes for when the PWS must complete all the state-approved start-up procedures and guidelines on when and how the PWS should contact the state to certify completion of the state-approved start-up procedures.

States should consider that the rationale behind the seasonal system requirements is based on mitigating the risk associated with dewatering and depressurizing the water system. The state should consider whether it will exempt PWSs that are seasonal, but remain pressurized throughout the entire period of shutdown, from some or all of the seasonal NCWS requirements. If certain seasonal systems are exempted from the requirements, the state should have concluded that public health protection will be maintained through the period when water is not provided to the public into the period when the PWS returns to service. Considerations may include length of time of shutdown, the type and size of PWS, flushing programs and whether the water system has gravity storage.

Note that PWSs that operate intermittently (e.g., churches) and PWSs that seasonally shut down portions of their distribution system, while still in operational status are not considered seasonal systems. However, the state may consider whether to have some of the requirements associated with seasonal systems apply to PWSs that may experience similar risks.

In summary, the state should develop and have a clearly written state protocol which identifies the criteria that will be used to exempt those PWSs, which remain pressurized year-round, from performing state-approved start-up procedures. Furthermore, the state needs to develop SOPs with specific timelines for seasonal systems to follow prior to starting up and serving water to the public.

7.4.9 Special Primacy Requirements Regarding Additional Criteria for Reduced Monitoring

> *40 CFR 142.16(q)(2) - Special Primacy Requirements. The state's application for primacy for Subpart Y must include a written description of how the state will require for… (viii) Additional criteria for reduced monitoring.*

Guidance

This Special Primacy Requirement addresses a state's rules or other authorities to require demonstration of the additional reduced monitoring criteria for PWSs using only ground water and serving 1,000 or

fewer people. States must describe in their primacy revision application how they will require a PWS to demonstrate that the system has an enhancement to a water system barrier such as continuous disinfection entering the distribution system and a residual in the distribution system, cross-connection control, a wellhead protection program, a program addressing storage facility maintenance, a water main flushing program or a water main replacement program.

This Section addresses how states will require systems on reduced monitoring to demonstrate the additional criteria required for reduced monitoring. Section 7.4.3 addresses how the state will determine whether PWSs qualify for reduced monitoring.

To demonstrate continuous disinfection and disinfectant residual, the state may require periodic submittal of PWS treatment and sampling records. If a PWS is conducting compliance monitoring under the GWR, the monthly monitoring reports could be used to document disinfection. Another option would be to require the PWS to make these records available to the state for review during the site visit.

The state may require a PWS to demonstrate that a cross-connection control program is in place by requiring documentation or records of certification, backflow protection activities or backflow prevention assembly testing; documentation from a certified backflow tester; records of public education or training of PWS staff; documentation of authority to require inspection, installation, maintenance or appropriate protection; and ongoing enforcement activities.

If the state has approved any other enhancements or barriers as part of the reduced monitoring criteria, demonstration that these barriers remain in place will be tailored to the specific protective measure. For instance, if the enhancement is a wellhead protection program, the state may require the state's source water protection program to verify on a periodic basis that the system has an approved, up-to-date program and that it is being implemented.

7.4.10 Special Primacy Requirements Regarding Criteria for Extending 24-hour Period for Collecting Repeat Samples

> *40 CFR 142.16(q)(2) - Special primacy requirements. The state's application for primacy for Subpart Y must include a written description for… (ix) Criteria for Extending the 24-Hour Period for Collecting Repeat Samples. — Under §§ 141.858(a) and 141.853(c)(2) of this chapter, criteria for systems to use in lieu of case-by-case decisions to waive the 24-hour time limit for collecting repeat samples after a total coliform-positive routine sample, or to extend the 24-hour limit for collection of samples following invalidation. If the state elects to use only case-by-case waivers, the state does not need to develop and submit criteria.*

Guidance

This Special Primacy Requirement addresses a state's rules or other authorities to extend the 24-hour period for collecting repeat samples. States must describe the criteria for PWSs to use in lieu of case-by-case decisions for waiving the 24-hour time limit for collecting repeat samples after a TC+ routine sample, or extending the 24-hour time limit for collection of samples following sample invalidation. If the state elects to use only case-by-case waivers, it does not need to develop and submit criteria, but may wish to indicate this decision in their application.

Factors to consider for extending this timeframe may include lab availability (e.g., lab closed on the weekend); limited delivery service from the PWS to the lab; or reduced availability of sample bottles for small and very small systems that rely on the lab to send them. States may allow a delay in sampling when extreme conditions or circumstances would put the sample collector in danger (e.g., severe weather conditions) or the delay cannot be avoided. If additional time is allowed for sampling, the PWS should

sample as close to the 24-hour window as possible or as soon as the sample bottles are received. EPA suggests that states require PWSs to call for pre-approval of an extension.

7.5 State Implementation Activities

7.5.1 Overview of Implementation

PWSs must take specific actions to comply with the RTCR. States should clearly define the monitoring, reporting, performance and follow-up requirements of the RTCR to help PWSs understand how the rule affects them and what they must do to comply. To meet these goals, states must carry out numerous implementation activities, including:

- Evaluating whether systems qualify for reduced monitoring, if the state adopts the reduced monitoring provisions (see Section 7.4.3).
- Developing and implementing state procedures for Level 1 and Level 2 assessments and requiring corrective action when a violation occurs or when a sanitary defect has been identified. Also, states must consult with a PWS that must conduct an assessment or take corrective action to determine the appropriate action and track compliance (see Section 7.4.4).
- Developing criteria for the invalidation of samples, and documenting in writing its decision to invalidate a sample and the rationale for the decision (see Section 7.4.5).
- Performing Level 2 assessments or have the authority to approve third-party assessors in the event that the state does not perform Level 2 assessments (see Section 7.4.6).
- Performing special monitoring evaluations during each water system's sanitary survey for NCWSs serving 1,000 or fewer and using only ground water (see Section 7.4.7).
- Ensuring seasonal systems are completing their start-up procedures and start-up monitoring, if required (see Section 7.4.8).

In addition, states should:

- Communicate requirements to PWSs and consult with PWSs regarding water system changes and how they affect RTCR requirements and compliance (see Section 7.5.2).
- Update data management systems, track regulated PWS compliance progress, and implement enforcement actions as needed (see Section 7.5.3).
- Develop, revise and implement state practices or procedures for monitoring requirements (see Section 7.4.1).
- Evaluate and revise as necessary the state's review and revision process for updating sample siting plans (see Section 7.4.2).

The remainder of this section discusses these different implementation functions specific to the RTCR. Also, to further help state implementation efforts, this guidance manual offers suggestions and alternatives that go beyond the minimum state requirements specified in the subsections of 40 CFR 142.16. Such suggestions are prefaced by "may" or "should" and are to be considered advisory. They are not required elements of state applications for program revision.

7.5.2 Communicating RTCR Requirements to All PWSs

States should provide outreach and training to PWSs, operators, third-party assistance providers and third-party assessors (if allowed) in order to implement the RTCR successfully. States should identify what actions they plan to take and develop a schedule for carrying out those actions so that the RTCR is implemented in a timely and effective manner. One important step for states is communicating with PWSs and preparing them to comply with the relevant provisions. PWSs should be notified of new requirements early enough to ensure their ability to budget for, and schedule their compliance actions. The more communication there is between the state and PWSs, the more prepared all parties will be as the compliance date approaches. For some PWSs, compliance actions may not be required for some time once the regulation has taken effect (e.g., seasonal systems). Many of these water systems are NCWSs where ownership can change frequently. Communicating the RTCR (and other) requirements should, therefore, be an ongoing process.

This section provides guidance to states on notifying PWSs of RTCR requirements. It also includes suggestions for organizing outreach efforts based on the provisions and compliance dates that apply to different categories of PWSs.

7.5.2.1 Requirements and Target Notification Timeframes

States should consider categorizing PWSs early on in their RTCR communication efforts so that each PWS is only provided with the applicable provisions and deadlines. States often notify PWSs of upcoming requirements before the compliance date using a form letter. Based on the RTCR's provisions and different compliance monitoring schedules, states may find it useful to draft and send out different form letters to different categories of PWSs.

States may want to consider drafting different form letters regarding the RTCR requirements for:

- NCWSs serving 1,000 or fewer people and using only ground water.
- CWSs serving 1,000 or fewer people and using only ground water.
- Surface water and GWUDI (Subpart H) PWSs serving 1,000 or fewer people.
- PWSs serving more than 1,000 people.
- Seasonal NCWSs.

7.5.2.1.1 Written Notice

Providing rule requirements to PWSs in a written notice serves two main purposes: (1) the recipient PWS obtains a formal notice of upcoming regulatory requirements and a timeline for compliance; and (2) the state has documentation that can be used in subsequent compliance tracking efforts.

Written notification can be in the form of a letter from the state to affected PWSs. The letter should include a summary of rule requirements, timeframes for compliance and appropriate contact information should questions arise. States should consider including fact sheets or other summary materials with the letter.

EPA intends to distribute publications to PWSs through mailings, training sessions and other educational forums. These publications provide overviews of the RTCR to help PWSs better understand the provisions and benefits of the rule, and determine which provisions apply to them. Although these publications provide valuable information, they do not substitute for official rule language. States should consider either including rule language in the letter, or including a reference (such as a website address) where the regulatory language can be found. These publications are available on EPA's website at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule.

An example letter is provided in Example 7-3. A copy of this letter is also included in Appendix C for readers to pull out and use. In this example, the letter is tailored to the PWS based on its population size. As described earlier, states may wish to tailor the letter further to accommodate PWSs for which the provisions are either limited or unique. While such tailored efforts are ideal, their preparation can be resource intensive. States may instead consider preparing letters that can be sent to groups of PWSs based on their population category (e.g., PWSs serving 1,000 or fewer people), source water type and monitoring frequency. The form letters could include a hyperlink and/or quick reference guide to fill in details such as what PWSs are considered "seasonal." Note that the requirements listed in the example letter are specific to EPA requirements and would need to be adjusted to take into account any state-specific requirements.

Example 7-3. Example RTCR Notification Letter

State Letterhead

John Smith, Supt.
Town Water System, PWSID XXXXXXX
Town, ST 12345

RE: Revised Total Coliform Rule

Dear Mr. Smith:

This letter is to notify you that your public water system (PWS) will be affected by the Revised Total Coliform Rule (RTCR). The RTCR applies to all PWSs and its requirements will take effect April 1, 2016.

Our records show that your PWS is a community water system (CWS) that uses ground water as its source. Our records also show that your PWS serves 1,750 people. Please let us know if this information is not accurate and we will update our records.

Based on these characteristics, the RTCR will affect your system in the following ways (some of these requirements are the same as they were under the Total Coliform Rule (TCR)):

- You must have available for review an up-to-date coliform sample siting plan by April 1, 2016.
- You will be required to collect two routine total coliform samples a month, according to that sample siting plan.
- If one of your routine monthly coliform samples tests positive for total coliform bacteria (i.e., TC+ sample), then at least three repeat samples must be collected within 24 hours of being notified of that TC+ result. If both of your routine monthly samples test positive for total coliform bacteria, then at least three repeat samples need to be collected for each positive routine sample (i.e., at least six repeat samples would be collected).
- If any routine or repeat total coliform sample is TC+, the laboratory must also analyze that sample for *E. coli*.
- The total coliform maximum contaminant level (MCL) requirements have been replaced by treatment technique (TT) requirements. This is one of the most significant revisions to the TCR. Starting April 1, 2016, there will no longer be a total coliform MCL. Instead, there are thresholds that trigger additional actions by the water system if they are exceeded. The thresholds are referred to as "TT-triggers" and are explained in the handouts accompanying this letter. For example, for systems taking < 40 samples/month a system must conduct a Level 1 assessment if it incurs two or more TC+ (routine and/or repeats samples) in one month [40 CFR 141.859(a)(1)(ii)].
- If your PWS exceeds one of the TT-triggers, you must complete either a Level 1 or Level 2 assessment, depending on which trigger was exceeded. You will also need to complete corrective action(s) to address any sanitary defects that are identified during the assessment(s).

A Quick Reference Guide and Fact Sheets on the RTCR are enclosed. The Quick Reference Guide provides more information on this regulation, and the Fact Sheets explain the monitoring and corrective actions in more detail. In addition to these materials, please refer to additional guidance and the state regulations addressing the RTCR requirements on the state website at www.xxxxx.xx.gov. We will be notifying you of upcoming training opportunities within the next month.

Please contact Ann Smith at this office at (555) 555-1234 if you have any questions about this letter or the RTCR and its effect on your PWS. We appreciate your attention to this request.

Sincerely,

Enclosures: RTCR Quick Reference Guide, RTCR Fact Sheets, [list other enclosures]

7.5.2.1.2 Slide Presentations

Written communication alone may not be enough to reach all PWSs. Training programs, including slide presentations, can be used by state staff and other training providers to present the background of the Rule, its benefits and its requirements.

EPA training materials from 2014 are available at the Association for State Drinking Water Administrator's website at: https://www.asdwa.org/regulatory/revised-total-coliform-rule-rtcr/.

7.5.2.1.3 Guidance Documents

Technical guidance documents developed for the RTCR are useful for explaining rule requirements and specific aspects of rule implementation, including monitoring and compliance determinations. The guidance documents can be used as stand-alone references or as supporting materials during RTCR training events. See Sections 8.1 and 8.2 of this Guidance for more information on these references.

7.5.3 Updating State Data Management Systems

Although state data management systems vary to meet state-specific requirements and needs, EPA recommends that all states ensure that their data management systems are capable of efficiently tracking affected PWSs, compliance status and other information needed to implement the RTCR. Under the RTCR recordkeeping requirements, states must keep any currently applicable or most recent state determinations, along with all supporting information and explanations of the technical basis for each decision, for the following:

- Decisions to waive the 24-hour time limit for collecting repeat samples after a TC+ routine sample, to extend the 24-hour limit for collection of samples following invalidation, or for an unfiltered surface water system to collect a total coliform sample following a turbidity measurement exceeding 1 NTU.
- Waivers for the additional routine monitoring requirement.
- Criteria and process for TC+ sample invalidation.
- Completed assessments, including completed corrective action reports, schedule approvals and state-specified interim measures.
- Decisions to reduce monitoring frequency for CWSs or NCWSs serving 1,000 or fewer people and using only ground water, and the reduced monitoring frequency.
- Decisions to allow PWSs to forgo *E. coli* testing of a TC+ sample if the PWS assumes that the TC+ sample is *EC*+.

Under the RTCR reporting requirements, states must report the following information to EPA:

- A list of CWSs that the state allows to monitor less frequently than once per month; and
- A list of NCWSs that the state allows to monitor less frequently than once per quarter.

The state must also include the applicable date of the reduced monitoring requirements for each PWS.

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Section 8

Resources and Other Guidance Documents

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In addition to this Guidance manual, EPA has prepared a variety of resource materials and technical guidance documents to facilitate understanding and implementation of the RTCR. Sections 8.1 and 8.2 include an overview of these resources and instructions on how to obtain the documents. Additional resources include:

- In Section 8.3, examples of PN and CCR for various PWS scenarios, which may assist states and PWSs with implementation of these RTCR requirements. Additional monitoring scenarios appear in Appendix E.

- In Section 8.4, a set of questions and answers about the RTCR.

8.1 Technical Guidance Manuals

Technical guidance manuals are available to help PWSs comply with the RTCR. These manuals will aid EPA, states and affected PWSs in implementing the RTCR and will help ensure that implementation among these groups is consistent. Completed documents (i.e., with a publication number) are posted to EPA website located at: https://www.epa.gov/dwreginfo/total-coliform-rule-compliance-help-public-water-systems. Planned documents for development include:

1. *Revised Total Coliform Rule Assessments and Corrective Actions Guidance Manual Interim Final*. EPA 815-R-14-006. September 2014.

   - The objective of this guidance manual is to provide states with an overview of Level 1 and Level 2 assessments, information on how to conduct assessments to identify the causes of total coliform and *E. coli* occurrence in the distribution system, and corrective actions that PWSs may take to correct defects found. Available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-assessments-and-corrective-actions.

2. *A Small Systems Guide to the Revised Total Coliform Rule*.

   - This guidance manual is designed for use by PWSs serving 1,000 or fewer people, either CWSs or NCWSs, using either surface water or ground water as the source. It is divided into four parts, Parts A, B, C and D. Each part is designed as a stand-alone document and can be downloaded and used separately. Available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-guide-small-public-water-systems.

3. *Revised Total Coliform Rule (RTCR) Placards.* EPA 815-B-18-001A-F. September 2018.

   - This collection of six e-fillable placards on the RTCR requirements were designed for states or TA providers to provide to small PWSs that serve 1,000 or fewer persons. The placards contain information on collecting routine samples per month, quarter or annually, repeat requirements, additional routine sampling, requirements for seasonal systems and Level 1 or Level 2 assessment requirements. Available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-sampling-resources.

4. *Revised Total Coliform Rule (RTCR) Sample Siting Plan with Template Manual*. EPA 815-B-18-005. September 2018.

   - This manual includes protocols, recommended instructions and an e-fillable sample siting plan template for PWSs to you to document selecting representative sample locations (i.e., routine and repeat samples). It was designed for states to provide to small PWSs that serve

1,000 or fewer persons. Available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-sampling-resources.

In addition to the technical guidance manuals developed to support the RTCR, EPA has developed other guidance manuals that may help states and affected PWSs with implementing the RTCR. These include:

1. *The Ground Water Rule (GWR) Implementation Guidance*. EPA 816-R-09-004. January 2009. Available at: https://www.epa.gov/dwreginfo/ground-water-rule-compliance-help-primacy-agencies.

2. *Sanitary Survey Guidance Manual for Ground Water Systems*. EPA 815-R-08-015. October 2008; and *Guidance Manual for Conducting Sanitary Surveys of Public Water Systems; Surface Water and Ground Water Under the Direct Influence (GWUDI)*. EPA 815-R-99-016. April 1999.

   - The objective of the sanitary survey guidance manuals is to provide states with a brief review of the sanitary survey regulatory provisions, give specific examples of what might constitute a significant deficiency, and provide a checklist of elements that should be evaluated during the course of a sanitary survey inspection. Available at: https://www.epa.gov/dwreginfo/sanitary-surveys.

3. *Revised State Implementation Guidance for the Public Notification (PN) Rule*. EPA 816-R-09-012. March 2010. Available at: https://www.epa.gov/dwreginfo/public-notification-compliance-help-primacy-agencies.

4. *Revised Public Notification Handbook.* EPA 816-R-09-013. March 2010. Available at: https://www.epa.gov/dwreginfo/public-notification-rule-compliance-help-water-system-owners-and-operators.

5. *Public Notification Instructions and Templates for the Revised Total Coliform Rule (RTCR)*. EPA 816-F-16-003. March 2016. Available at: https://www.epa.gov/dwreginfo/public-notification-instructions-and-templates-revised-total-coliform-rule-rtcr.

6. *Revised State Implementation Guidance for the Consumer Confidence Report (CCR) Rule*. EPA 816-R-09-010. April 2010. Available at: https://www.epa.gov/ccr/state-implementation-and-primacy-guidance-ccr.

7. *Preparing Your Drinking Water Consumer Confidence Report Revised Guidance for Water Suppliers*. EPA 816-R-09-011. April 2010. Available at: https://www.epa.gov/ccr/how-water-systems-comply-ccr-requirements.

8. *Manual for the Certification of Laboratories Analyzing Drinking Water*. 5th ed. EPA 815-R-05-004. January 2005. Available at: https://www.epa.gov/dwlabcert/laboratory-certification-manual-drinking-water.

8.2 Fact Sheets and Quick Reference Guides

Fact sheets and Quick Reference Guides for the RTCR may be useful for conveying basic information about the Rule to PWSs, new personnel and stakeholders. These documents include:

1. RTCR Rule Fact Sheets:

   a. *Announcement of Revisions to the Total Coliform Rule*. EPA 815-F-12-007. December 2012. Available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule.

2. RTCR Quick Reference Guides:

    a. *Revised Total Coliform Rule: A Quick Reference Guide*. EPA 815-B-13-001. September 2013. Available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule.

8.3 PWS PN and CCR: RTCR Examples

This section includes examples and scenarios that may assist states and PWSs with implementation of the RTCR. The EPA CCRiWriter tool was updated to reflect the relevant RTCR requirements. See Appendix E for RTCR field scenarios, which cover additional concepts, such as PWS monitoring.

- General information Consumer Confidence Report (CCR): https://www.epa.gov/ccr.
- CCR for compliance tools and documents: https://www.epa.gov/ccr/how-water-systems-comply-ccr-requirements.
- Public Notification Instructions and Templates for the Revised Total Coliform Rule (RTCR): https://www.epa.gov/dwreginfo/public-notification-instructions-and-templates-revised-total-coliform-rule-rtcr.

Scenario 1: **E. coli** *MCL Violation*

PWS Description – System A

System A is a CWS serving 10,000 people. Under the RTCR, the PWS must take 10 routine samples per month.

Violation Information

On April 2, 2016, the CWS collects one of its 10 routine monthly RTCR samples for April. The CWS is notified by the laboratory on the afternoon of April 4 that one of its routine samples is TC+, but *E. coli*-absent. On the morning of April 5, the CWS collects a set of three repeat samples according to its state-reviewed sample siting plan and delivers the samples to the laboratory for analysis. On April 7, the CWS learns that one of the three repeat samples is *EC*+. The CWS has incurred an *E. coli* MCL violation and has exceeded one of the triggers for a Level 2 assessment. A Level 2 assessment must be completed by the CWS as soon as possible and the assessment form and documentation must be submitted to the state within 30 days (i.e., by May 7, 2016). System A submitted a completed Level 2 assessment form to the state on May 1, 2016. In coordination with the State Department of Public Health, System A subsequently implemented corrective action involving treatment modifications (increasing the disinfectant residual in the distribution system).

PN and CCR Requirements

Public Notification

The PWS has incurred an *E. coli* MCL violation and it must provide Tier 1 PN as soon as practical, but no later than 24 hours of learning that the repeat sample was *EC*+ (i.e., no later than April 8, 2016). Notification can be made via radio, TV, hand delivery, posting or other method approved by the state in writing, along with other methods, if needed, to reach persons served. The CWS must notify the state within 24 hours of learning of the *EC*+ sample result (or by April 8, 2016). An example of a public notice that fulfills the Tier 1 PN requirement for this scenario is shown in Example 8-1.

CCR

The CWS must include the *E. coli* information in the Water Quality Data Table in the CCR addressing the 2016 calendar year. The system must also include the health effects language found in 40 CFR Appendix A to Subpart O and one or more of the statements in 40 CFR 141.153(h)(7)(iii) to describe the noncompliance. Example 8-2 provides an example that fulfills the CCR requirement for this scenario.

Example 8-1. Example Tier 1 PN for Violating the *E. coli* MCL

DRINKING WATER WARNING
E. coli is Present in System A's Water
BOIL YOUR WATER BEFORE DRINKING OR USING

Our water system detected *E. coli* bacteria in a pipe of our distribution system. As our customers, you have a right to know what happened and what we are doing to correct this situation. On April 4, 2016, we learned that coliform bacteria were present and one of our routine samples collected on April 2, 2016, was total coliform-positive (TC+). As required by the Revised Total Coliform Rule, one of our follow-up steps was to collect repeat samples at and near the location where the TC+ sample was originally taken. One of these repeat samples collected on April 5 tested positive for *E. coli*. We are now conducting additional sampling to determine the extent of the problem and are conducting a thorough investigation to determine the source of the contamination.

What should I do?
DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST. Bring all water to a rolling boil, let it boil for one minute, and let it cool before using it. Boiling kills bacteria and other organisms in the water. You may also use bottled water. Use boiled or bottled water for drinking, making ice, preparing food and washing dishes until further notice.

Also, if you have a severely compromised immune system, have an infant, or are elderly, you may be at increased risk and should seek advice about drinking water from your health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at (800) 426-4791. If you have specific health concerns, consult your doctor. We are also providing regular updates on this situation on Channel 22 or Radio Station KMMM (97.3 FM).

What does this mean?
Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps and associated headaches. *E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.* These symptoms are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice.

What is being done?
We are conducting a thorough investigation to determine the source of the contamination and will be working with the State Department of Public Health to implement corrective actions to ensure that our water supplies are protected against contamination. We will keep you informed of the steps we are taking to protect your drinking water and will provide information on any steps you should be taking. We will inform you when tests show no bacteria and you no longer need to boil your water. We are also providing regular updates on this situation on Channel 22 or Radio Station KMMM (97.3 FM).

For more information, please contact John Johnson, manager of System A, at (555) 555-1234 or write to 2600 Winding Rd., Townsville, TM 12345.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by System A.

State Water System ID# TM1234582. Sent: 4/7/2016

Example 8-2. Example of Water Quality Data Table in the CCR for Violating the *E. coli* MCL

Water Quality Data

Contaminant	MCLG or MRDLGMCLG	MCL, TT, or MRDL	Detect In Your Water	Range Low	Range High	Sample Date	Violation	Typical Sources
E. coli (RTCR) - in the distribution system	0	Routine and repeat samples are total coliform positive and either is *EC+* or system fails to take repeat samples following *EC+* routine sample or system fails to analyze total coliform positive repeat sample for *E. coli*.	1	NA	NA	April 7, 2016	Yes*	Human and animal fecal waste

* System A detected *E. coli* in a water sample following a total coliform-positive routine sample. More information about this situation is provided in the Situation section below.

Situation

- On April 4, 2016, we were informed that one of our routine total coliform samples collected on April 2nd was TC+. As required by the Revised Total Coliform Rule, we collected repeat samples from the distribution system on April 5, 2016, and had them analyzed. One of the three samples was positive for *E. coli* (*EC+*).
- Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps and associated headaches. *E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.*
- In response, we sent notices to all of our customers within 24 hours of learning of this *EC+* sample.
- We were required to complete a Level 2 assessment because we found *E. coli* in our water system. A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
- In addition, we were required to take two corrective actions to address a sanitary defect that was found during the assessment, and we completed these two actions. System A determined the sanitary defect to be inadequate disinfectant residuals and we implemented required corrective actions established by the State Department of Public Health to address the defect. We developed a plan with the State Department of Public Health and increased the disinfectant residual in the distribution system. This change was implemented by June 1, 2016.

Scenario 2: Failure to Perform a Level 1 Assessment

PWS Description – System B

System B is a CWS using only ground water and serving 3,500 people. Under the RTCR, the CWS must take four routine coliform samples per month.

Violation Information

On June 12, 2016, the CWS collects its four routine monthly RTCR samples for June. The CWS is notified by the laboratory on the afternoon of June 15 that one of the routine samples is TC+. On the morning of June 16, the CWS collects a set of three repeat samples and delivers the samples to the laboratory for analysis. On June 19, System B learns that one of the three repeat samples is TC+. The CWS has exceeded one of the triggers for a Level 1 assessment. Level 1 assessments must be completed by the CWS as soon as possible, and the assessment form and documentation must be submitted to the state within 30 days (i.e., by July 19, 2016). System B fails to submit a completed Level 1 assessment form to the state within the specified timeframe. On August 5, 2016, System B completes the Level 1 assessment and submits the completed form to the state. The assessment identified a sanitary defect; a large hole in the vent screen of the CWS's storage tank that is allowing contaminants to enter the tank. The system agrees to complete the corrective action (replacing the vent screen and disinfecting the tank) in accordance with a schedule approved by the state.[6]

PN and CCR Requirements

Public Notification

Failure to complete and submit the Level 1 assessment within 30 days is a TT violation and requires Tier 2 PN. The CWS must provide PN within 30 days of learning of the violation. Notification must be provided by mail or other direct delivery method approved by the state in writing, and any other reasonable method should be used to reach affected individuals who would not have received the information by mail or the direct delivery method. If the system has any unresolved violations following an initial situation requiring Tier 2 PN, the PN must be repeated every three months for as long as the violations persist. The CWS is notified of the TT violation on July 21, 2016, and therefore, must provide Tier 2 PN by August 20, 2016. An example of a public notice that fulfills the Tier 2 PN requirements for this violation is shown in Example 8-3.

CCR

This CWS must also include information regarding the Level 1 assessment requirements in the CCR addressing the year the TT-trigger occurred (i.e., 2016 for System B). Example 8-4 provides an example that fulfills this CCR requirement for this scenario.

[6] A large hole in a vent screen may also be considered a significant deficiency under the GWR and, if it is, the PWS must also address these GWR requirements.

Example 8-3. Example of a Tier 2 PN for Failure to Perform a Level 1 Assessment

DRINKING WATER NOTICE
System B Failed to Conduct an Assessment of the Facility and Distribution System

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the distribution system. In one sample we collected on June 12, 2016, and one sample collected on June 16, 2016, we found coliforms, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct an assessment to identify problems and to correct any problems that are found. We were required to conduct a Level 1 assessment within 30 days of learning of the second total coliform-positive (TC+) sample. A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system. As our customers, you have a right to know what happened and what we are doing to correct this situation. As required by the Revised Total Coliform Rule, *we failed to conduct the required Level 1 assessment* within 30 days, and have therefore, violated a requirement of the Revised Total Coliform Rule.

What does this mean?
This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

Failure to conduct an assessment to identify the sanitary defect that triggered the assessment has the potential to cause distribution system contamination. *Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.* Failure to perform the assessment prolonged the risk of fecal contamination of our distribution system water. While we have not detected any evidence of fecal contamination in our distribution system, we are committed to correcting the deficiency to eliminate the potential threat of contamination.

What should I do?
- You do not need to boil your water or take other corrective actions. However, if you have specific health concerns, consult your doctor.
- If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from their health care providers about drinking this water. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at (800) 426-4791.

You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. We will announce any emergencies on Channel 22 or Radio Station KMMM (97.3 FM).

What is being done?
We have since completed the Level 1 assessment and identified the cause of the sanitary defect; damage to the storage tank. We are implementing the corrective action plan established by the State Department of Public Health. Under this plan, the damage will be repaired and the tank will be disinfected by August 31, 2016.

For more information, please contact John Johnson, manager of System B, at (555) 555-1234 or write to 2600 Winding Rd., Townsville, TM 12345.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being posted by System B.

State Water System ID# TM1234583. Sent: 8/10/2016

Example 8-4. Example of Water Quality Data Table in the CCR for a Total Coliform TT Violation (Failure to Perform a Level 1 Assessment)

Water Quality Data

Contaminant	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range Low	Range High	Sample Date	Violation	Typical Sources
Total Coliform (RTCR)	NA	TT	NA	NA	NA	June 19, 2016	Yes*	Naturally present in the environment

*System B triggered a Level 1 assessment on June 19, 2016, and failed to complete the required assessment on time. More information about this situation is provided in the Situation section below.

Situation

- During the past year, we were required to conduct a Level 1 assessment. We did not complete the required Level 1 assessment on time.
- On June 12, 2016, System B collected four samples, one that was total coliform-positive (TC+). As required by the Revised Total Coliform Rule, we collected repeat samples from the distribution system and had them analyzed. One of these repeat samples also tested positive for total coliform bacteria. *Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.* We were required to conduct one Level 1 assessment, which was not completed on time.
- We sent notices to all of our customers within 30 days of learning of the failure to complete the required Level 1 assessment on time.
- The Level 1 assessment was completed on August 5, 2016, and identified the cause of the sanitary defect to be damage to the storage tank. We implemented the corrective action plan established by the State Department of Public Health, repaired the damage to the storage tank and disinfected the tank on August 31, 2016.

Scenario 3: Failure to Perform Corrective Actions Following a Level 1 Assessment

PWS Description – System B

System B, as described in Scenario 2, is a CWS using only ground water and serving 3,500 people. Under the RTCR, the PWS must take four routine coliform samples per month.

Violation Information

On June 12, 2016, the CWS collects its four routine monthly RTCR samples for June. The CWS is notified by the laboratory on the afternoon of June 15 that one of routine samples is TC+. On the morning of June 16, the PWS collects a set of three repeat samples according to their state-reviewed sample siting plan and delivers the samples to the laboratory for analysis. On June 19, the analysis shows that one of the three repeat samples is also positive for total coliform. The CWS has exceeded one of the triggers for a Level 1 assessment. Level 1 assessments must be completed by the CWS as soon as possible, and the completed assessment form and any required documentation must be submitted to the state within 30 days (by July 19, 2016). System B submits a completed Level 1 assessment to the state by July 19, 2016. The Level 1 assessment identified the cause of the sanitary defect to be to be a large hole in the vent screen of the storage tank that is allowing contaminants to enter the tank. Based on the corrective action plan established by the state, the CWS is required to replace the vent screen and disinfect the tank by August 31, 2016. The CWS failed to correct this deficiency by August 31, 2016 and the state notified the CWS of this violation on September 1, 2016.

PN and CCR Requirements

Public Notification

Failure to complete corrective action is a TT violation and requires Tier 2 PN. The CWS must provide PN within 30 days of learning of the violation. Notification must be provided by mail or other direct delivery method approved by the state in writing, and any other reasonable method to reach affected individuals who would not have received the information by mail or the direct delivery method. For any unresolved violation following an initial situation requiring Tier 2 PN, the public notice must be repeated every three months for as long as the violation persists. The CWS is notified of the violation on September 1, 2016, and therefore, must provide Tier 2 PN by October 1, 2016. An example of a public notice that fulfills the Tier 2 PN requirements for this violation is shown in Example 8-5.

CCR

In addition to any TT violation, this CWS must also include information regarding the Level 1 assessment requirements in the CCR addressing the year the TT-trigger occurred (i.e., 2016 for System B). Example 8-6 provides an example that fulfills this CCR requirement for this scenario.

Example 8-5. Example of a Tier 2 PN for Failure to Perform Corrective Action

DRINKING WATER NOTICE
System B Failed to Perform Corrective Action Following an Assessment of the Facility and Distribution System

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the distribution system. We found coliforms, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that are found. This past summer, we were required to conduct a Level 1 assessment. We completed the required Level 1 assessment and identified the cause of the sanitary defect to be damage to the storage tank. *While we failed to correct the sanitary defect within the required timeframe,* we are implementing the corrective action plan established by the State Department of Public Health. As our customers, you have a right to know what happened and what we are doing to correct this situation. As required by the Revised Total Coliform Rule, we failed to complete the corrective action within the required timeframe, and have therefore, violated a requirement of the Revised Total Coliform Rule.

What does this mean?
This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

Failure to correct the identified defect that was found during the assessment has the potential to cause distribution system contamination. *Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.*

What should I do?
- You do not need to boil your water or take other corrective actions. However, if you have specific health concerns, consult your doctor.
- If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from their health care providers about drinking this water. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at (800) 426-4791.

You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. We will announce any emergencies on Channel 22 or Radio Station KMMM (97.3 FM).

What is being done?
Since being informed of the failure, we have begun to correct the sanitary defect identified during the Level 1 assessment. During the assessment, the sanitary defect was determined to be damage to the storage tank. We are in communication with the State Department of Public Health and have modified the corrective action plan's schedule to repair and disinfect the storage tank.

For more information, please contact John Johnson, manager of System B, at (555) 555-1234 or write to 2600 Winding Rd., Townsville, TM 12345.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being posted by System B.

State Water System ID# TM1234583. Sent: 9/20/2016

Example 8-6. Example of Water Quality Data Table in the CCR for a Total Coliform TT Violation (Failure to Perform Corrective Action)

Water Quality Data

Contaminant	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range Low	Range High	Sample Date	Violation	Typical Sources
Total Coliform (RTCR)	NA	TT	NA	NA	NA	June 19, 2016	Yes*	Naturally present in the environment

*System B triggered a Level 1 assessment on June 19, 2016. System B completed the required assessment within the required 30 days, by July 19, 2016. However, System B failed to correct the sanitary defect identified during the assessment within the required timeframe established by the State Department of Public Health. More information about this situation is provided below in the Situation discussion.

Situation

- During the past year, we were required to conduct one Level 1 assessment which was completed in July 2016. In addition, we were required to take two corrective actions which we did not complete on time.
- On June 12, 2016, System B collected four samples, one that was total coliform-positive (TC+). As required by the Revised Total Coliform Rule, we collected repeat samples from the distribution system and had them analyzed. One of these repeat samples also tested positive for total coliforms. *Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the distribution system. We found coliforms, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.*
- The Level 1 assessment was completed by July 19, 2016, within the required timeframe. During the assessment, the sanitary defect was determined to be damage to the storage tank. System B failed to correct the sanitary defect by August 31, 2016, the timeframe established by the State Department of Public Health.
- We sent notices to all of our customers within 30 days of learning of the failure to correct the sanitary defect within the timeframe established by the state.
- After being informed of the failure to correct the sanitary defect within the required timeframe established by the State Department of Public Health, System B modified the corrective action plan with approval from the state and repaired and disinfected the damaged tank by November 20, 2016.

Scenario 4: Failure to Perform a Level 2 Assessment

PWS Description – System C

System C is a CWS serving 4,200 people. Under the RTCR, the CWS must take five routine samples per month.

Violation Information

On July 12, 2016, the CWS collects two of its five routine monthly RTCR samples for July (the three remaining routine samples were taken on different days later in July). The CWS is notified by the laboratory on the afternoon of July 14 that one of the two routine samples is TC+. On the morning of July 15, the CWS collects a set of three repeat samples according to the system's state-reviewed sample siting plan and delivers the samples to the laboratory for analysis. The analysis shows that one of the three repeat samples is positive for *E. coli*, which means the CWS has incurred an *E. coli* MCL[7] and therefore exceeded one of the TT for a Level 2 assessment. Level 2 assessments must be completed by the CWS as soon as possible and a completed assessment form and any required documentation must be submitted to the state within 30 days of learning of the assessment trigger (i.e., within 30 days of the system's learning of the *EC*+ repeat sample or in this case, by August 19, 2016). System C doesn't submit a completed Level 2 assessment form to the state until August 31, 2016. No sanitary defects are identified during the assessment and numerous surveillance samples the system collected in August are all negative for *E. coli* and total coliform.

Additional Information

The CWS has incurred an *E. coli* MCL violation and must issue Tier 1 PN (see Scenario 1 and examples 8-1 and 8-2 for PN and CCR requirements related to an *E. coli* MCL violation).

PN and CCR Requirements

Public Notification

Failure to complete and submit the Level 2 assessment within 30 days triggers a TT violation and requires Tier 2 PN. System C must provide PN within 30 days of learning of the violation. Notification must be provided by mail or other direct delivery method approved by the state in writing, and any other reasonable method to reach affected individuals who would not have received the information by mail or the direct delivery method. For any unresolved violation following an initial situation requiring Tier 2 PN, the public notice must be repeated every three months for as long as the violation or situation persists. System C is notified of the on-going violation on August 20, 2016, and therefore, must provide Tier 2 PN by September 20, 2016. An example of a PN that fulfills the Tier 2 PN requirements for this violation is shown in Example 8-7.

CCR

This CWS must also include information regarding the Level 2 assessment requirements in the CCR addressing the year the TT-trigger occurred (i.e., 2016 for System C). Example 8-8 provides an example that fulfills this CCR requirement for this scenario.

[7] For guidance on providing information to the public regarding an *E. coli* MCL violation see Scenario 1.

Example 8-7. Example of a Tier 2 PN for Failure to Perform a Level 2 Assessment

DRINKING WATER NOTICE
System C Failed to Conduct an Assessment of the Facility and Distribution System

Our water system detected E. coli in the distribution system. E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for E. coli, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found. During the past summer, we were required to conduct a detailed Level 2 assessment and submit documentation to the state within 30 days of learning of the *E. coli* violation. *We failed to conduct the required assessment* within 30 days. As our customers, you have a right to know what happened and what we are doing to correct this situation. As required by the Revised Total Coliform Rule, we failed to complete the Level 2 assessment on time and therefore have violated a requirement of the Revised Total Coliform Rule.

What does this mean?
This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

Failure to conduct a timely assessment to identify the sanitary defect that triggered the assessment has the potential to cause distribution system contamination. *Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.* Failure to perform the assessment in a timely manner prolonged the risk of fecal contamination in our distribution system. While we have not detected any evidence of fecal contamination in our distribution system, we are committed to correcting the deficiency to eliminate the threat of contamination.

What should I do?
- You do not need to boil your water or take other corrective actions. However, if you have specific health concerns, consult your doctor.
- If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from their health care providers about drinking this water. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at (800) 426-4791.

You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. We will announce any emergencies on Channel 22 or Radio Station KMMM (97.3 FM).

What is being done?
Since being informed of the failure, we have completed the assessment and no sanitary defects were identified. In addition, several surveillance coliform samples were collected during August and all of these samples tested negative for coliforms and *E. coli*. We will continue to collect extra surveillance samples in the upcoming months and test them for coliforms and *E. coli*, to be vigilant and provide additional oversight of the water system.

For more information, please contact John Johnson, manager of System C, at (555) 555-1234 or write to 2600 Winding Rd., Townsville, TM 12345.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being posted by System C.

State Water System ID# TM1234583. Sent: 9/4/2016

Example 8-8. Example of Water Quality Data Table in the CCR for an *E. coli* TT Violation (Failure to Perform a Level 2 Assessment)

Water Quality Data[8]

Contaminant	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range Low	Range High	Sample Date	Violation	Typical Sources
E. coli	0	Routine and repeat samples are total coliform positive and either is *EC+* or system fails to take repeat samples following *EC+* routine sample or system fails to analyze total coliform positive repeat sample for *E. coli*.	3			July 13, 2016	Yes	Human and animal fecal waste
E. coli	NA	TT	NA	NA	NA	July 19, 2016*	Yes	Human and animal fecal waste

*System C triggered a Level 2 assessment on July 19, 2016 and failed to complete the required assessment within 30 days. More information about this situation is provided below in the Situation section.

Situation

- During the past year, we were required to conduct a Level 2 assessment and certify that it was completed. System C did not certify completion of the assessment within 30 days. In addition, we were required to take corrective action which we completed.
- On July 12, 2016, System C collected two routine samples, one of which was total coliform-positive (TC+). As required by the Revised Total Coliform Rule, we collected repeat samples from the distribution system and had them analyzed. One of the repeat samples was positive for *E. coli. E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for E. coli, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that were found during these assessments.* We were required to complete a Level 2 assessment because we found *E. coli* in our water system. This assessment was completed after the required 30-day time period.
- In response, we sent notices to all of our customers within 24 hours of learning of this positive *E. coli* sample. Additionally, we sent notices to all of our customers within 30 days of learning of the failure to complete the required Level 2 assessment on time.
- After being informed of the failure to perform a Level 2 assessment on time, System C completed the Level 2 assessment and no sanitary defects were identified. In addition, several surveillance coliform samples were collected during August and all of these samples tested negative for coliforms and *E. coli*. System C continued to collect extra surveillance samples in the remaining months of 2016 and tested them for coliforms and *E. coli*, to be vigilant and provide additional oversight of the water system. All of these samples tested negative.

[8] This Water Quality Table would also include water quality data related to the *E. coli* MCL violation. For additional information on including an *E. coli* MCL violation in a CCR see Scenario 1.

Scenario 5: Failure to Meet Total Coliform Monitoring, Testing or Reporting Requirements

PWS Description – System D

System D is a CWS serving 15,000 people. Under the RTCR, to the system must collect 15 routine samples per month.

Violation Information

During December 2016, the CWS takes 12 of the required 15 routine monthly total coliform samples (on different days). The state notifies the CWS on January 11, 2017, of the failure to take the required number of routine samples. System D has committed a monitoring violation by not taking the total number of routine monthly total coliform samples within the required compliance period.

PN and CCR Requirements

Public Notification

The CWS must provide Tier 3 PN within one year of learning of the violation. Notification must be provided by mail or other direct delivery method approved in writing by the state and any other reasonable method to reach affected individuals that would not have received the information by mail or the direct delivery method used. Notice must be provided to each customer receiving a bill and other service connections to which water is delivered. For any unresolved violation following an initial situation requiring Tier 3 PN, the public notice must be repeated annually for as long as the violation persists. An example of a PN that fulfills the Tier 3 PN requirements for this violation is shown in Example 8-9.

CCR

Since System D is a CWS, it can use the CCR to inform the public of the Tier 3 violation if the CCR is released within one year of the CWS learning of the violation. For this particular example, the CWS became aware of the monitoring violation on January 11, 2017. The public could, therefore, be informed of the violation in the CCR produced for calendar year 2016. Example 8-10 provides an example that fulfills this CCR requirement for this scenario.

Example 8-9. Example Tier 3 PN for Failure to Take All Routine Total Coliform Samples in the Required Compliance Period

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
Monitoring Requirements Not Met for System D

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During December 2016, we did not complete all monitoring or testing for total coliform, and therefore, cannot be sure of the quality of your drinking water during that time.

On January 11, 2017, we became aware that our water system failed to collect all of the required monthly routine total coliform distribution system samples in December 2016. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation. None of the 12 samples that we did collect was positive for total coliform or *E. coli* bacteria.

What should I do?
There is nothing you need to do. You do not need to boil your water or take other corrective actions. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. We will also announce any emergencies on Channel 22 and Radio Station KMMM (97.3 FM).

What was done?
We collected all 15 of the required routine total coliform samples in January and tested them for *E. coli.* None of the samples collected in January was positive for *E. coli*.

For more information, please contact John Johnson, manager of System D, at (555) 555-1234 or write to 2600 Winding Rd., Townsville, TM 12345.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by System D.

State Water System ID# TM1234585. Sent: 1/10/2018

Example 8-10. Example of a Notice in the CCR for Failure to Take All Routine Total Coliform Samples in the Required Compliance Period

Violation

Our water system failed to collect three of the required 15 drinking water total coliform samples between December 1 and December 31, 2016. None of the 12 samples that we did collect were positive for total coliform or *E. coli* bacteria. We were informed of this monitoring violation on January 11, 2017. During the January 1 through January 31, 2017 compliance period, we took all 15 of the required routine total coliform samples.

Failure to conduct routine total coliform monitoring within the required compliance period is a monitoring violation.

Scenario 6: Seasonal System Failure to Follow State-Approved Start-Up Procedures Prior to Serving Water to the Public

PWS Description – System E

System E is a NCWS using only ground water and serving 800 people. The NCWS has two wells in use for six months out of the year, beginning service in October and ending in March. As defined in the RTCR, System E is considered a seasonal NCWS and has been approved by the state for reduced quarterly monitoring.

Violation Information

The NCWS begins service on October 1, 2017, and fails to complete the state-approved start-up procedures prior to serving water to the public. On November 1, 2017, the state notifies the NCWS that it is in violation of the RTCR seasonal NCWS start-up procedure requirements because the system has not provided certification to the state that it has completed the procedures. Failure to submit certification of start-up procedures is a reporting violation under the RTCR.

PN and CCR Requirements

Public Notification

System E has committed a TT violation. Because it is a seasonal NCWS, it must complete the state-approved start-up procedures prior to serving water to the public. The system must provide Tier 2 PN within 30 days of learning of the violation. Notification must be provided by mail or other direct delivery method approved by the state in writing, and any other reasonable method to reach affected individuals who would not have received the information by mail or the direct delivery method. For any unresolved violation following an initial situation requiring Tier 2 PN, the public notice must be repeated every three months for as long as the violation persists. The seasonal NCWS is notified of the violation on November 1, 2017 and therefore, must provide Tier 2 PN by December 1, 2017. An example of a public notice that fulfills the Tier 2 PN requirements for this violation is shown in Example 8-11.

CCR

Because System E is a NCWS, it is not required to prepare and distribute a CCR.

Example 8-11. Example of a Tier 2 PN for Failure of a Seasonal NCWS to Perform State-Approved Start-up Procedures Prior to Serving Water to the Public

DRINKING WATER NOTICE
System E Failed to Perform State-Approved Start-up Procedures Prior to Serving Water to the Public

Prior to serving water to the public in October, we failed to perform the state-approved start-up procedures for our water system. As our customers, you have a right to know what happened and what we are doing to correct this situation. Because we failed to implement these procedures, we have violated a requirement of the Revised Total Coliform Rule.

What does this mean?
This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

Failure to perform state-approved start-up procedures prior to serving water to the public has the potential to cause source water contamination. *Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.* Failure to perform the start-up procedures prolonged the risk of fecal contamination of our source water. While we have not detected any evidence of fecal contamination in our source water, we are committed to correcting the deficiency to eliminate the threat of contamination.

What should I do?
- If you have specific health concerns, consult your doctor.
- If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from their health care providers about drinking this water. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at (800) 426-4791.

What is being done?
Since being informed of the failure, we have completed the required start-up procedures and have provided certification to the state. We have also collected three coliform samples and all three samples were coliform-negative.

If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

For more information, please contact John Johnson, manager of System E, at (555) 555-1234 or write to 2600 Winding Rd., Townsville, TM 12345.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly. You can do this by posting this notice in a public place.

This notice is being posted by System E.

State Water System ID# TM1234583. Sent: 11/27/2016

Scenario 7: Failure to Meet E. coli Monitoring, Testing or Reporting Requirements

PWS Description – System F

System F is a CWS serving 6,000 people. Under the RTCR, the CWS must collect seven routine samples per month.

Violation Information

On April 11, 2016, the CWS is notified by the laboratory that one of its routine monthly total coliform samples is *EC+*. The CWS collects three repeat samples according to its state-reviewed sample siting plan and those three repeat samples are all total coliform-negative. The CWS fails to notify the state of the *EC+* routine sample by the end of the day that the CWS learns of the violation.

PN and CCR Requirements

Public Notification

System F has committed a reporting violation. It must notify the state of the *EC+* routine sample by the end of the day that the CWS learns of the violation. Since the three repeat samples were negative for the presence of coliforms, System F has not violated the *E. coli* MCL. The CWS must provide Tier 3 PN within one year of learning of the violation. Written notification must be provided by mail or other direct delivery method approved by the state, and any other reasonable method to reach affected individuals that would not have received the information by mail or the direct delivery method used. Notice must be provided to each customer receiving a bill and other service connections to which water is delivered. An example of a PN that fulfills the Tier 3 PN requirements for this violation is shown in Example 8-12.

CCR

Since System F is a CWS, it could use the CCR to inform the public of the Tier 3 violation if the CCR is distributed within one year of the CWS learning of the violation. For this particular example, the CWS became aware of the monitoring violation on April 11, 2016. The public could, therefore, be informed of the violation in the CCR produced for calendar year 2016 as long as that CCR was published before April 12, 2017 (the deadline for distribution of the 2016 CCR is July 1, 2017, under the CCR Rule). Example 8-13 provides an example that fulfills this CCR requirement for this scenario.

Example 8-12. Example Tier 3 PN for Failure to Notify the State Following an *EC+* Sample Result

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
Reporting Requirements Not Met for System F

Our system failed to notify the state of an *E. coli*-positive (*EC+*) routine sample by the end of the day that we learned of the violation. The water system has not exceeded the *E. coli* MCL standard set by the Revised Total Coliform Rule. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

What should I do?
There is nothing you need to do. You do not need to boil your water or take other corrective actions. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. We will also announce any emergencies on Channel 22 and Radio Station KMMM (97.3 FM).

What was done?
We notified the state of the routine monitoring sample that was *EC+*.

For more information, please contact John Johnson, manager of System F, at (555) 555-1234 or write to 2600 Winding Rd., Townsville, TM 12345.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by System F.

State Water System ID# TM1234585. Sent: 3/11/2017

Example 8-13. Example of a Notice in the CCR for Failure to Notify the State Following an *EC+* Sample Result

Violation

Our water system failed to notify the state of a routine monitoring sample collected in April 2016 that was *E. coli*-positive (*EC+*). Our water system did not exceed the *E. coli* MCL standard set by the Revised Total Coliform Rule.

Failure to notify the state by the end of the day when we are notified of an *EC+* test result is a violation.

8.4 Questions & Answers

Q&As on the RTCR are provided in this section. These questions have been asked of EPA through the Safe Drinking Water Hotline, implementation training or other means.

8.4.1 PWS Questions

Background Information

Q1. What is the purpose of the RTCR?

A1. One purpose of the RTCR is to improve public health protection by reducing fecal pathogens to minimal levels by responding to the occurrence of total coliform bacteria as an indicator of a potential pathway of contamination into the distribution system. The RTCR also aims to provide an immediate response to the occurrence of *Escherichia coli* (*E. coli*) as an indicator of fecal contamination. The objectives of the rule are to evaluate the effectiveness of treatment, to determine the integrity of the distribution system and to signal the possible presence of fecal contamination. The RTCR addresses these objectives by requiring PWSs that may be vulnerable to fecal contamination (as indicated by their monitoring results), to conduct an assessment, to identify whether any sanitary defects are present and to correct the defects.

Q2. To which PWSs does the RTCR apply?

A2. The RTCR applies to all PWSs, except for those excluded from regulation by Section 1411 of the SDWA (42 U.S.C. 300g) and those subject to the Aircraft Drinking Water Rule (40 CFR 141, Subpart X).

Q3. When do PWSs need to comply with the requirements of the RTCR?

A3. PWSs must comply with the requirements of the RTCR beginning April 1, 2016, unless states with primacy select an earlier implementation date.

Q4. What are the key provisions of the RTCR?

A4. The key provisions of the RTCR include:

- Replacement of the total coliform MCL violation with a total coliform TT violation.
- Creation of an *E. coli* MCL violation.
- Clarification of routine, reduced, increased, repeat and additional routine monitoring requirements.
- Provisions allowing PWSs to transition to the RTCR using their existing TCR monitoring frequency, including PWSs on reduced monitoring under the existing TCR.
- Requirement to conduct assessments and complete corrective action(s) when TT-triggers are exceeded.

Q5. Where can a PWS find EPA resources on the RTCR?

A5. Information can be found online at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule.

Q6. How does the RTCR apply to seasonal systems?

A6. A seasonal system is any NCWS that is not operated as a PWS on a year-round basis and that starts up and shuts down at the beginning of each operating season. Seasonal systems must demonstrate completion of a state-approved start-up procedure, which may include a requirement for start-up sampling prior to serving water to the public. Seasonal systems must monitor monthly, but may be eligible for reduced monitoring as approved by the state. The state may exempt any seasonal system from some or all of the start-up system requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating. NCWSs which monitor less frequently than monthly must monitor during the vulnerable period designated by the state and all seasonal water systems must monitor for total coliforms as there is no exemption from this requirement.

Q7. What is the relationship between the RTCR and the GWR?

A7. If a routine sample collected under the RTCR is TC+, then a ground water system must perform triggered source water monitoring under the GWR. GWR triggered source water monitoring is the basis for identifying fecally contaminated ground water sources and requiring corrective actions to address them. The RTCR also requires corrective actions to address sanitary defects identified during Level 1 or 2 assessments. Additionally, ground water systems serving 1,000 or fewer people, with a single well, and a TC+ routine sample may, with prior written state approval, take one of their RTCR repeat samples at the monitoring location required for triggered source water monitoring under the GWR. This dual purpose sample would meet the monitoring requirements of both the RTCR and the GWR.

Q8. Why has EPA eliminated the total coliform MCL violation and introduced an *E. coli* MCL violation?

A8. The RTCR establishes an MCLG and an MCL for *E. coli* and eliminates the MCLG and MCL for total coliform, replacing it with a TT for total coliform that requires a PWS to conduct an assessment and complete corrective actions if the TT is triggered, as appropriate. The RTCR establishes an *E. coli* MCLG of zero and an *E. coli* MCL, because *E. coli* is a more specific indicator of fecal contamination and potential harmful pathogens than total bacteria. Under the RTCR, total coliform bacteria serve only as an indicator of a potential pathway of contamination into the distribution system. A PWS that exceeds a specified frequency of total coliform occurrences must conduct an assessment to determine if any sanitary defects exist and, if found, correct them. In addition, a PWS which incurs an *E. coli* MCL violation must conduct an assessment and correct any sanitary defects found.

Q9. Must a CWS include the health effects language in its CCR for an EC+ sample result if the system did not trigger an *E. coli* MCL violation?

A9. No, the CWS would only need to report the total number of EC+ in the CCR's detected contaminants table. However, EPA strongly recommends including a statement to explain that although the system has detected *E. coli*, it is not in violation of the *E. coli* MCL as

included in 40 CFR 141.153(h)(7)(iv). Note: EPA has included recommended language in the CCR-iwriter (https://ofmpub.epa.gov/apex/safewater/f?p=140:LOGIN_DESKTOP:::::).

Q10. How does the RTCR provide equivalent or more public health protection than the 1989 TCR?

A10. The new assessment and corrective action provisions of the RTCR are more protective of public health than the TCR, because they require PWSs that are found to be vulnerable to microbial contamination to identify and fix problems. The RTCR also establishes criteria for PWSs to qualify for and stay on reduced monitoring, thereby providing incentives for improved water system operation.

Monitoring

Q11. Can a PWS use its existing TCR sample siting plan?

A11. Yes, as long as the sample siting plan meets the RTCR requirements specified at 40 CFR 141.853(a). However, PWSs should use the RTCR as an opportunity to review and revise their existing sample siting plans, as necessary. At a minimum, PWSs will need to remove or modify the TCR requirement for five additional total coliform samples the month following a TC+ sample result (assuming the state also eliminates this requirement). Additionally, PWSs that collected four repeat samples under the TCR will need to update their siting plan to indicate that collection of only three repeat samples are required under the RTCR. In addition, a seasonal water system that monitors less than monthly, must have the designated timeframe for monitoring (i.e., vulnerable period for monitoring) specified in its monitoring plan.

Q12. Does the RTCR allow for transition of a PWS's routine monitoring frequency from the existing TCR?

A12. Yes. Beginning April 1, 2016, PWSs continue on their existing TCR monitoring frequency that is in effect through March 31, 2016, unless the state determines that circumstances exist (e.g., triggers for increased monitoring) that would warrant a modified monitoring frequency. The state must perform a special monitoring evaluation for ground water systems serving 1,000 or fewer people to determine whether the PWS is on an appropriate monitoring schedule and sampling at appropriate sites.

Q13. What is a special monitoring evaluation?

A13. A special monitoring evaluation is performed by the state and is a review of the status of ground water systems serving 1,000 or fewer people (including seasonal PWSs) to determine whether the PWS's monitoring frequency, monitoring locations, or number of sampling sites need to be modified. It must be performed during each water system's sanitary survey, unless the evaluation is conducted sooner by the state.

Q14. If the state requires all PWS to monitor at a monthly frequency (including those ≤ 1,000 persons) is a special monitoring evaluation needed?

A14. Yes. The RTCR requires a special monitoring evaluation for all ground water systems serving 1,000 or fewer people. The requirement is based on system size not monitoring frequency. A state requiring monthly monitoring would still need to conduct a special monitoring evaluation for all ground water systems serving 1,000 or fewer people. The special monitoring evaluation, which is conducted as part of the periodic sanitary survey,

should consider not only whether the system is on the appropriate monitoring frequency, but should also consider whether monitoring is conducted at location(s) that are representative of water throughout the distribution system [as required by 40 CFR 141.853(a)(1)]. While a single monitoring location may be determined to be adequate for many systems with a single source and a limited distribution system, the state may want to determine whether a single location is adequate in those systems with multiple sources or pressure zones, complex hydraulics, or an extended distribution system (e.g., a rural system serving scattered customers). To accomplish this, the state may require that a system monitor more frequently or at more locations or that the system rotate monitoring locations periodically. The special monitoring evaluation is consistent with the existing requirements for sanitary surveys, while recognizing the limited resources such systems may have to make decisions that protect human health.

Q15. Records of decisions to reduce the total coliform monitoring frequency for PWSs (specifically for a NCWS using only ground water and serving 1,000 or fewer people to less than once per quarter, and for a CWS serving 1,000 or fewer people to less than once per month), were made years ago by the states. With the TCR to RTCR transition can the documentation of the special monitoring evaluation satisfy this requirement?

A15. Please note that states should ideally still have records of the decisions to reduce monitoring, even those made years ago. Requirements to keep records of decisions regarding reduced monitoring are not new to the RTCR and in fact existed as part of the 1989 TCR. The language in the 1989 TCR is similar to that of the RTCR and is provided here:

A. 40 CFR 141.14 (a)(5)(ii) —Records of each of the following decisions must be retained in such a manner so that each system's current status may be determined.

B. 40 CFR 141.21(a)(2)—Any decision to reduce the total coliform monitoring frequency for a community water system serving 1,000 persons or fewer, that has no history of total coliform contamination in its current configuration and had a sanitary survey conducted within the past five years showing that the system is supplied solely by a protected groundwater source and is free of sanitary defects, to less than once per month, as provided in § 141.21(a)(2); and what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.

C. 40 CFR 141.21(a)(3)(i)—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving 1,000 persons or fewer to less than once per quarter, as provided in § 141.21(a)(3)(i), and what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.

D. 40 CFR 141.21(a)(3)(ii)—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving more than 1,000 persons during any month the system serves 1,000 persons or fewer, as provided in § 141.21(a)(3)(ii). A copy of the reduced monitoring frequency must be provided to the system. Records must be kept as long as needed to determine system is monitoring at the required routine frequency.

Records of any decisions to reduce the monitoring of NCWSs using only ground water and serving 1,000 or fewer people to less than once per quarter, and CWSs serving 1,000 or fewer people to less than once per month; must be kept as long as needed so that the state can determine at any point if the system is monitoring at the required frequency. If the monitoring

frequency decision is made or confirmed as part of the special monitoring evaluation, the special monitoring evaluation records can be kept to satisfy the requirement in the RTCR. However, because the state may not conduct a special monitoring evaluation as often as it decides to reduce a system's monitoring frequency (or allows a PWS to return to a reduced monitoring frequency); the state must keep a separate record of the decision when the decision to reduce the monitoring frequency is made outside of the special monitoring evaluation. In this case records from the special monitoring evaluation may not be used as the sole means to satisfy the RTCR requirement.

Q16. What does EPA define as a "clean compliance history"?

A16. Under the RTCR, a clean compliance history is when a PWS has no record of MCL violations under 40 CFR 141.63 (MCLs for microbiological contaminants under the TCR; no monitoring violations under 40 CFR 141.21 (coliform sampling under the TCR), or 40 CFR 141, Subpart Y (the RTCR); and no TT-trigger has occurred or TT violations has been incurred under the RTCR. States may have a more stringent definition for clean compliance history and may define a minimum time period for maintaining compliance (e.g., a 12-month period). EPA recommends that states consider whether PWSs have any violations related to unresolved significant deficiencies or other compliance issues under other rules when evaluating a PWS's compliance history. The purpose of evaluating PWSs for a clean compliance history is to allow eligible PWSs to reduce monitoring.

Q17. Why does the RTCR add so many additional requirements for a reduced monitoring?

A17. EPA and the Total Coliform Rule Distribution System Advisory Committee (TCRDSAC) believe that these additional requirements are necessary to ensure that PWSs on a routine monitoring frequency that is less than monthly are properly operating and maintained. The goal is to ensure that these water system collecting samples less than monthly can ensure that public health protection is equivalent to that provided for a PWS that is monitoring on a routine monthly basis.

Q18. In order to meet reduced monitoring criteria, the Rule requires NCWSs and CWSs to have both a protected water supply <u>and</u> meet approved construction standards. Are these two separate criteria or do systems need to have a protected water supply that meets all construction standards?

A18. In 40 CFR 141.854(e)(2) for NCWSs and 40 CFR 141.855(d)(1)(i) for CWSs, these are (and were intended to be), two separate requirements. A protected water source would be an aquifer that provided physical exclusion of microbial contamination. The state determines whether a system meets approved construction standards, using its own requirements for both well siting and construction and distribution system siting and construction. For many systems covered by this provision, the more significant construction standards are those for the well since the system has little distribution system.

Q19. If a PWS on quarterly or annual monitoring has a TC+ sample that results in an *E. coli* MCL violation and must start monthly monitoring the following month, will that PWS also be required to collect the three additional routine samples the following month?

A19. The RTCR specifies that only PWSs on less than monthly monitoring must perform additional routine monitoring. For PWSs which are triggered into monthly monitoring, the additional routine monitoring requirements do not apply. The PWS must remain on monthly

monitoring until it can comply with the requirements to return to less than monthly monitoring.

Q20. When does a system on less then monthly monitoring (e.g., quarterly) stop taking the additional routine monitoring samples?

A20. A system must continue to conduct additional routine monitoring until total coliforms are not detected or the monitoring results trigger the system into an increased monthly monitoring frequency. Note that each additional routine sample that is TC+ requires a set of three repeat samples and analysis for *E. coli* even if a TT-trigger occurs.

Q21. How should states/PWSs handle situations where the combination of routine and repeat sampling crosses over into a new calendar month?

A21. As with the TCR, repeat samples are associated with the month in which the TC+ routine sample was collected, even if the repeat samples were taken in the following month. States should continue to direct their PWSs to collect their routine coliform samples in enough days before the end of each month so that this scenario rarely occurs.

Q22. When does a PWS stop collecting repeat samples?

A22. For each TC+ routine sample, including each "additional" routine sample, systems must take at least three repeat samples (a set) even if a TT-trigger occurs. For example if all three required "additional" routine samples were TC+, the PWS would collect 9 repeat samples (3 for each routine). The system would STOP collecting repeats on a routine TC+ when all repeat samples in a set are TC-negative.

However, for one or more TC+ repeat sample in a set, a system would collect at least three repeat samples. The system would STOP collecting repeats when all samples in one set are TC-negative or a TT-trigger occurs.

Q23. Does a PWS triggered into increased monitoring due to a monitoring violation (i.e., from quarterly to monthly, or annually to either quarterly or monthly), need to remain on monthly monitoring for at least 12 months even if the state conducts a special monitoring evaluation during a sanitary survey before the PWS has completed 12 months of sampling?

A23. Yes. Once a PWS has triggered increased monitoring due to a monitoring violation, the PWS must complete 12 months of monitoring without a monitoring violation, and satisfy all additional RTCR criteria and requirements before being allowed to return to a reduced monitoring schedule.

Q24. Is a PWS on reduced monitoring that triggers a Level 1 or Level 2 assessment required to increase monitoring, even if the PWS has completed the assessment and all corrective actions?

A24. If the system triggers a Level 2 assessment or two Level 1 assessment in a rolling 12-month period, then yes, even if the assessment and all corrective actions are completed, the system must conduct increased monthly monitoring beginning the month following the event. A NCWS may not return to quarterly or annual monitoring until it meets all the applicable criteria as stipulated in 40 CFR 141.854(g) and 40 CFR 141.854(h) which includes the definition of clean compliance history for 12 rolling months. A CWS may not return to quarterly monitoring until it meets all the applicable criteria as stipulated in 40 CFR 141.855(d) which also includes the definition of clean compliance history for 12 rolling

months. A system on reduced monitoring is not required to increase monitoring based solely on triggering its first Level 1 assessment in a rolling 12-month period.

Q25. What happens to a seasonal NCWS's monitoring frequency if the PWS does not monitor during the most vulnerable time (i.e., when the NCWS is providing water to the public)?

A25. A seasonal system that is on annual monitoring would trigger into quarterly monitoring when it incurs its first monitoring violation (e.g., failure to monitor during the most vulnerable time). A seasonal system that is on quarterly monitoring would be triggered into monthly monitoring (i.e., increased monitoring) when it incurs two monitoring violations in a rolling 12-month period, even if one of the monitoring violations during the rolling 12-month period occurred when the system was on annual monitoring. The PWS may not return to quarterly or annual monitoring until it meets all the applicable criteria as stipulated in 40 CFR 141.854(g) and 40 CFR 141.854(h) which includes the definition of clean compliance history for 12 rolling months.

Q26. If a seasonal system completes the start-up procedures but fails to submit a certification of completion to the state, does this affect the NCWS's monitoring frequency?

A26. No. Failure to submit certification of completion of start-up procedures is a reporting violation and the system will have to issue a Tier 3 PN for this violation. In order for a seasonal system to remain on reduced monitoring (either quarterly or annually), the PWS must have a clean compliance history for a minimum of 12 months. Under the RTCR, a clean compliance history is when a PWS has no record of MCL violations, no RTCR monitoring violations, and no TT-trigger has occurred or TT violations has been incurred under the RTCR. Since failure to submit certification of completion of start-up procedures is a reporting violation, it is not a factor when determining clean compliance history under the RTCR.

Q27. If a PWS provides disinfection and is on reduced monitoring under the RTCR, does the PWS still have to increase monitoring in accordance with the RTCR triggers?

A27. Yes. A clean compliance history for the last 12 months is a condition for a PWS to remain on reduced monitoring, regardless of whether the PWS disinfects.

Assessments

Q28. What is the difference between a Level 1 and Level 2 assessment?

A28. The RTCR includes two levels of assessments (Level 1 and Level 2) to address the level of concern raised by the results of indicator sampling and the corresponding level of effort required for the assessments. A Level 2 assessment is triggered by more concerning or persistent conditions than a Level 1 assessment and therefore, requires a more thorough, and detailed evaluation of the system.

Q29. Who must conduct assessments?

A29. Level 1 assessments are intended to be conducted by the PWS. However, the state or a party approved by the state may conduct the Level 1 assessment on behalf of the PWS, if necessary. In addition, the state may wish to specify operator certification requirements for Level 1 assessors. The Level 2 assessment must be conducted by the state or a party approved by the state. A Level 2 assessment may be conducted by the PWS if allowed by the state.

Q30. What types of items need to be considered when conducting an assessment?

A30. The RTCR requires that both a Level 1 and Level 2 assessment include review and identification of the following elements:

- Inadequacies in sample sites, sampling protocol and sample processing.
- Atypical events that may have affected distributed water quality or indicate that distributed water quality was impaired.
- Changes in distribution system maintenance and operation that may have affected or are affecting distributed water quality, including water storage.
- An evaluation of source water quality and treatment changes or conditions that may affect water quality in the distribution system, where appropriate.
- Existing water quality monitoring data.

Q31. What are the TT-triggers for a Level 1 assessment?

A31. A Level 1 assessment is triggered if any one of the following occurs:

- A PWS collecting fewer than 40 routine and repeat samples per month has two or more routine and/or repeat samples per month that are TC+.
- A PWS collecting at least 40 routine and repeat samples per month has greater than 5.0 percent of the routine and/or repeat samples in a month that are TC+.
- A PWS fails to take every required repeat sample after any single TC+ sample.

Q32. What are the TT-triggers for a Level 2 assessment?

A32. A Level 2 assessment is triggered by any one of the following:

- An *E. coli* MCL violation, which is triggered if any of these conditions occur: 1) a TC+ routine sample followed by an *EC*+ repeat sample; 2) an *EC*+ routine sample followed by a TC+ repeat sample; 3) failure to collect all required repeat samples within the required timeframe following an *EC*+ routine sample; or 4) failure to test for *E. coli* following a TC+ repeat sample.
- A *second* Level 1 assessment within a rolling 12-month period, unless the state has determined that the PWS found the sanitary defect that likely caused the first Level 1 TT-trigger, and the PWS corrected or fixed the sanitary defect before the second Level 1 TT-trigger occurred. If the state makes this determination and approves, the system would not trigger a Level 2 assessment but would need to conduct a second Level 1 assessment.
- For PWSs on state-approved annual monitoring, a Level 1 trigger in 2 consecutive years.

Q33. Could both a Level 1 and Level 2 assessment be required in the same month?

A33. Yes, however the intent of the requirements under 40 CFR 141.859(a) is that the system triggers one separate provision per month. For instance, if the system triggers a Level 1 assessment due to 40 CFR 141.859(a)(1)(i), it does not trigger another Level 1 assessment

due to this provision within the same month. However, if the system triggers 40 CFR 141.859(a)(1)(i) and 40 CFR 141.859(a)(1)(iii) -- failed to take all repeat samples -- in the same month, it has triggered two separate provisions. In this case, the system would submit both a Level 1 and Level 2 assessment form but the assessment could be combined and the system could complete just the Level 2 assessment by the due date of the first TT-trigger in that month. The system should consult with the state for approval to combine the assessments and instruction on how to complete the Level 1 and Level 2 forms by the due date of the initial TT-trigger.

Q34. If a system triggers both a Level 1 and Level 2 assessment, can the system only submit the Level 2 assessment form if the Level 2 assessment covers the Level 1 assessment factors?

A34. If a PWS triggers more than one assessment in a month, the rule requires the PWS to submit a completed form for each assessment within 30 days after the system learns that it has exceeded a TT-trigger. However, the assessments can be combined with approval from the state during consultation [40 CFR 141.859(d)]. During consultation, if the state determines to combine multiple assessments, the higher level assessment (i.e., Level 2) must be completed by the due date of the first TT-trigger. The state can use discretion and instruct the PWSs on what to "complete" on both forms. If the state reviews the completed forms and determine the assessment is not sufficient, the state must consult with the system. If the state requires revisions after consultation, the PWS must submit a revised assessment form to the state on an agreed upon schedule not to exceed 30 days from the date of the consultation. [40 CFR 141.859(b)(3)(ii); 40 CFR 141.859(b)(4)(iii)]. These decisions should be made in consultation with the system to demonstrate the best professional judgment in the interest of public health.

Q35. What happens if a Level 1 trigger is exceeded for a third time within 12-rolling months? Do assessments stop at some point?

A35. For each TT-triggered, the applicable assessment must be completed within 30-days after the system learns that it has the TT-exceedance. Assessments are required for each TT-trigger and serve as a means to identify the cause of contamination and remedy with corrective action.

How to count multiple Level 1 TT-triggers: For each subsequent Level 1 assessment (after the initial Level 1 assessment) in 12-rolling months, the even numbered Level 1 TT-trigger is a Level 2 assessment; the odd numbered Level 1 TT-trigger is a Level 1 assessment. Note that if the state has determined the PWS has found the sanitary defect that likely caused the first Level 1 TT-trigger (i.e., odd numbered TT-trigger), and the PWS has corrected or fixed the sanitary defect before the second Level 1 TT-trigger occurred, the state can reset the second/even numbered Level 1 TT-trigger to a Level 1 assessment (i.e., instead of the system conducting a Level 2 assessment) [CFR 141.859(a)(2)(ii)].

Q36. How to calculate multiple TT-triggers in 12-rolling months?

A36. The following example reflects a ground water CWS that serves 1,000 or fewer people and collects one routine sample per month:

Date sample results received	Type of TT-trigger	Type of assessment
November 10, 2017	1st Level 1 TT-trigger	Level 1 assessment

Date sample results received	Type of TT-trigger	Type of assessment
December 10, 2017	2nd Level 1 TT-trigger	Level 2 assessment unless state determines otherwise in accordance with 40 CFR 141.859(a)(2)(ii)
January 10, 2018	3rd Level 1 TT-trigger	Level 1 assessment unless state determines otherwise
June 10, 2018	4th Level 1 TT-trigger	Level 2 assessment unless state determines otherwise in accordance with 40 CFR 141.859(a)(2)(ii)

Q37. How is the rolling 12-month period determined? Is it by date or month?

A37. Rolling 12-month period is determined by the month. For purposes of determining clean compliance history and increased monitoring, month one is the month in which the triggered event or violation occurred.

Q38. What is a sanitary defect?

A38. The RTCR defines a sanitary defect as a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place. Examples of sanitary defects include, but are not limited to:

- Cross connections with privately owned wells that have not been properly disconnected.
- Holes in finished water storage tanks that could allow insects, rodents or birds to enter.
- Insufficient minimum pressures within the distribution system that could allow back pressure or back-siphonage of contaminated water into the distribution system.
- Cracks in well seals or casings.
- Low pressure episodes/zones in the distribution system.
- Improperly cleaned and maintained storage tanks.
- Underground valve vaults that become flooded during wet weather.
- Improperly inspected and maintained backflow prevention devices (e.g., continuous discharge from the relief device on a reduced pressure zone [RPZ] device).

Q39. What is the difference between a sanitary defect under the RTCR and a significant deficiency under the GWR and the Interim Enhanced Surface Water Treatment Rule (IESWTR)?

A39. Significant deficiencies are associated with the eight elements of a sanitary survey and include, but are not limited to: defects in design, operation or maintenance; or a failure or malfunction of the sources, treatment, storage or distribution system that the state determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers. States were required to provide examples of significant deficiencies for each of the eight elements of a sanitary survey under the GWR and IESWTR. The

difference between significant deficiencies and sanitary defects can vary based on how the state identified significant deficiencies. Sanitary defects are defined by the RTCR to be deficiencies that could provide a pathway of entry for microbial contamination into the distribution system or are indicative of a failure or imminent failure in a barrier that is already in place. Some sanitary defects could also be significant deficiencies. PWSs should coordinate with their state to determine how to characterize the problem and coordinate the corrective action with the appropriate regulation and timeframe.

Q40. Can a state use a common term for both a significant deficiency under the GWR and a sanitary defect under the RTCR when communicating with PWSs?

A40. Yes. It does not matter what terminology is used by the state, if PWSs are required to complete all the associated regulatory actions required for significant deficiencies and sanitary defects. Do note that the regulatory basis for the compliance schedule must be clear as the timeframes for corrective action for a significant deficiency and sanitary defect are different.

Q41. What if no sanitary defects are identified but there are significant deficiencies identified at a water system during a sanitary survey? Will the system still be eligible for reduced monitoring?

A41. As discussed in Q39, some significant deficiencies may not necessarily be considered sanitary defects and vice versa. An example of this is a significant deficiency in the area of monitoring, reporting and data verification. A state may consider a failure of a system to keep six months or more of operating data a significant deficiency but not a sanitary defect. Although, the RTCR specifically calls out the absence of sanitary defects (or if identified during an assessment, site visit or sanitary survey, the correction of them) as one of the criteria for reduced monitoring, EPA recommends that states also consider the presence of significant deficiencies when determining a system's eligibility for reduced monitoring. Reduced monitoring is granted to well-operated systems as long as they can demonstrate that they are ensuring the delivery of safe water. A significant deficiency, although not a sanitary defect, can be an indicator of the presence of vulnerabilities in the system that could lead to contamination in the future. States, therefore, should consider the presence of significant deficiencies and how the system is addressing or will address them before putting the system on reduced monitoring.

Q42. What about the situation where a PWS triggers a Level 2 assessment, and because of the timing, the state can do the system's sanitary survey at the same time. If a condition at the system is both a sanitary defect under the RTCR and a significant deficiency under the GWR, do we track and report the condition as both a sanitary defect and a significant deficiency? Or does one supersede the other?

A42. The condition should be reported and tracked in SDWIS as a sanitary defect. Overall, the intent is for the state to track violations and return to compliance (RTC) under one rule, but can use the information to satisfy other rule requirements, where applicable. A correction of the sanitary defect under the RTCR requires a quicker response than is required under the GWR for significant deficiencies (i.e., 30 days under the RTCR vs. 120 days under the GWR) and the sanitary defect finding under the RTCR carries more weight in terms of consequences (e.g., can affect whether the system has a clean compliance history). The condition should be tracked and reported to SDWIS solely as a sanitary defect. Note: the state can determine a significant deficiency at any time and under any situation, and does not have to wait for a TT-exceedance, as in the case of the RTCR.

Q43. Would the situation in Q42 be any different if we find a sanitary defect/significant deficiency during a sanitary survey, but the system has not trigger an assessment? How should we track and report these findings?

A43. In this case, since a TT-trigger was not the initiating event, the significant deficiency found during the sanitary survey should be tracked and reported as a significant deficiency. As stated above, a state can determine that a system condition is a significant deficiency at any time and under any situation, and does not have to wait for a trigger (as in the case of RTCR). Sanitary defects can only be identified during an assessment triggered in accordance with the RTCR.

Q44. Where can I find additional information on assessments?

A44. For more information, see the RTCR Assessments and Corrective Action Guidance Manual available at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-assessments-and-corrective-actions.

Return to Compliance

Q45. If a seasonal system fails to complete state-approved start-up procedures prior to serving water to the public, how is the system returned to compliance (RTC)?

A45. RTC is achieved when the PWS completes the state approved start-up procedure(s) and/or completes any associated state directives or corrective actions related to start-up procedures and submits the start-up procedures certification.

Q46. If the violation is not returned to compliance until the next season, does the system need to repeat the Tier 2 PN over a period of 12 months?

A46. PWSs must repeat Tier 2 PN every three months as long as the violation or situation persists, unless the state determines that appropriate circumstances warrant a different repeat notice frequency.

8.4.2 State Questions

Q47. How should a state (particularly a state that adopts the RTCR by reference), handle the error identified in 40 CFR 141.857(d), where the cross reference in the paragraph should be (b) instead of (a)?

A47. EPA is providing the recommended language to include in the primacy application for the state primacy agency that adopts the RTCR by reference:

The state primacy agency adopts the Revised Total Coliform Rule by reference as published on February 13, 2013, in the *Federal Register* Volume 78, No. 30, and as updated on February 26, 2014, in the *Federal Register* Volume 79, No. 38, and with 40 CFR 141.857(d) with the correct federal cross reference to paragraph (b), in lieu of paragraph (a), such that:

> *Reduced monitoring. Systems may not reduce monitoring, except for non-community water systems using only ground water (and not ground water under the direct influence of surface water) serving 1,000 or fewer people in some months and more than 1,000 when more than 1,000 persons are served, the systems must monitor at the frequency specified in paragraph (b)* of this section. In months when 1,000 or fewer people are served, the State may reduce*

the monitoring frequency, in writing, to a frequency allowed under § 141.854 for a similarly situated system that always serves 1,000 or fewer people, taking into account the provisions in § 141.854(e) through (g).

At a future date, EPA may correct this error in the *Federal Register*. However, EPA strongly encourages states to fix this error (as noted above) in their state regulations as part of the RTCR primacy application. In this way, subsequent resubmittal of the primacy application will not be necessary once the error is addressed in the *Federal Register*.

Q48. What is EPA's position on monitoring in unsafe conditions?

A48. Operators should not be sent out to sample in unsafe conditions. Required timeframes for meeting monitoring requirements can be extended by the state, but not waived. The state can provide PWSs with additional time to collect repeat samples (if needed) on a case-by-case basis or apply criteria used to extend the 24-hour time limit, if it is described in their primacy application and approved by EPA.

Q49. My state currently requires all PWSs to conduct monthly monitoring. Do I need to adopt the reduced monitoring provisions?

A49. No. States are not required to adopt the reduced monitoring provisions of the RTCR. States that choose to allow reduced monitoring must adopt all of the RTCR requirements associated with the reduced monitoring provisions.

Q50. If a state only adopts the monthly monitoring provisions and associated requirements in the RTCR and not the reduced monitoring provisions, is the state rule more stringent than the federal rule?

A50. No. EPA believes that requiring all PWSs to monitor monthly is no more stringent than allowing NCWSs serving 1,000 or fewer people and using only ground water to monitor less frequently (e.g., quarterly) while also having to meet additional requirements and criteria, as provided for under the federal RTCR. The different monitoring frequency provisions provide equivalent public health protection (i.e., are equally stringent) when combined with the mandatory additional criteria. If a state requires all PWSs to monitor at least monthly, there are no additional criteria that the PWS must meet to remain on monthly monitoring, since that is the most frequent monitoring specified in the RTCR. However, systems monitoring less frequently (quarterly or annually), must also comply with additional mandatory criteria and requirements to remain on and/or qualify for the less frequent monitoring. In addition, systems monitoring less frequently than monthly must conduct additional routine monitoring in any month following a TC+ sample result, and may be triggered to conduct monthly monitoring for failing to continually meet the additional criteria. These criteria and requirements for less frequent monitoring were recommended by the TCRDSAC to make the less frequent sampling scenarios equivalent to monthly monitoring in terms of public health protection. Therefore, EPA believes that a state that adopts only monthly monitoring is not being any more or less stringent than the federal rule. EPA also believes that providing multiple approaches for compliance allows states (as co-regulators), to choose the option(s) that provide the required public health protection while allowing states to maximize resources and authorities. In granting primacy, EPA does not require states to adopt all possible options for demonstrating compliance and does not determine that a state that does not adopt all compliance options is more stringent (or more protective of public health).

Q51. My state already requires monthly monitoring for all PWSs. Do I need to adopt the RTCR or can I just use my current rules?

A51. Most likely you will have to modify your existing rules. Your current rule provisions may satisfy most of the RTCR requirements, so you may not need to adopt all of the RTCR requirements, but your existing rule needs to be as stringent as the RTCR. There are new provisions for assessments, corrective actions, seasonal system start-up procedures, and other requirements that may not be part of your current rule, so modifications will likely be needed to your existing rule, even if you continue to require monthly monitoring for all PWSs.

Q52. Some states have existing cooperative agreements with other state and local agencies and existing tools to address various levels of public health threats. Can states integrate these working relationships into their rules and continue to use these relationships as part of their implementation programs?

A52. It is not EPA's intent to take this discretion away from the states, or to undermine these cooperative agreements with other state and local agencies. If a state deems that a given situation calls for an elevated level of PN, or requires a more immediate action to ensure that public health is protected, then it can do so under its own discretion and authority.

Q53. Can a state integrate the GWR and RTCR requirements in its state rules?

A53. There is nothing in the RTCR that prohibits the states from integrating the requirements of the GWR and RTCR where appropriate. EPA encourages states to make any necessary modifications to their regulations to make the most efficient use of limited state resources and to better integrate these rules for PWSs with little-to-no distribution system, provided that the revisions satisfy the primacy requirements for both the GWR and the RTCR.

Q54. Are there any RTCR special primacy requirements that must be included in a state's rule, as opposed to only being submitted as part of the state's primacy package?

A54. Some of the items that the state needs to describe in its primacy application should be reflected in its rule language. For example, the state's rule language should clearly explain whether reduced monitoring is allowed and if so, what criteria PWSs need to meet in order for the state to approve a reduced monitoring frequency. Other items, such as the start-up provisions for seasonal systems and how the state will require PWSs to demonstrate compliance with the additional criteria for reduced monitoring, can be codified in the state rule language.

Q55. In my state we have one type of water systems that have 15 or more connections, but serve less than 25 people on an average day. How does the RTCR affect these types of systems?

A55. Since these systems meet the federal definition of a PWS, the RTCR applies. These PWSs would need to meet the requirements for systems serving equal to or less than 1,000 persons.

Q56. Can state regulators use "expedited" or "additional actions" to require the system to, for example, take investigative samples, shock chlorinate the system, examine the well or perform leak detection if an assessment is not triggered?

A56. In accordance with 40 CFR 141.859(b)(4) a state can immediately require any "expedited" or "additional action" in the case of an *E. coli* MCL violation. While there is no formal federal definition of an "expedited" or "additional action." As a rule of thumb, "expedited" and

"additional actions" are those actions required to be completed by the PWS on an earlier or more urgent timeframe than within the 30 days of an assessment completion date.

Additionally, for any TT-trigger occurrence, 40 CFR 141.859(d) allows, at any time during the assessment or corrective action phase, either the water system or the state to consult with the other party to determine the appropriate action to be taken, including appropriate timeframe. This means a PWS must complete those actions the state deems necessary for public health protection once a TT-trigger occurs. And, recall, identifying significant deficiencies as part of a sanitary survey can also be used to require immediate actions.

EPA's intent with allowing states to require "expedited" or "additional actions" consistent with state requirements was to keep discretion and authority with the states to require immediate action to address potential risk to public health. Therefore, if a state deems that a given situation calls for an elevated level of action, then it should make the most efficient use of existing authorities to protect public health.

Appendix A

Primacy Revision Crosswalk

NOTE: This crosswalk includes federal requirements as published on February 13, 2013, in the *Federal Register* Vol. 78, No. 30, and minor corrections made as updated on February 26, 2014, in the *Federal Register* Vol. 79, No. 38. Additionally, it includes the error identified in 40 CFR 141.857(d) *Reduced Monitoring*, with the correct federal cross reference to paragraph (b), in lieu of paragraph (a) and 40 CFR 141.858(a)(1) *Repeat monitoring*, which says "though" instead of "through."

EPA is providing the recommended language to include in the primacy application for the state primacy agency that adopts the Revised Total Coliform Rule by reference:

The state primacy agency adopts the Revised Total Coliform Rule by reference as published on February 13, 2013, in the *Federal Register* Volume 78, No. 30, and as updated on February 26, 2014, in the *Federal Register* Volume 79, No. 38, and with 40 CFR 141.857(d) with the correct federal cross reference to paragraph (b), in lieu of paragraph (a), such that:

Reduced monitoring. Systems may not reduce monitoring, except for non-community water systems using only ground water (and not ground water under the direct influence of surface water) serving 1,000 or fewer people in some months and more than 1,000 when more than 1,000 persons are served, the systems must monitor at the frequency specified in paragraph (b)* of this section. In months when 1,000 or fewer people are served, the State may reduce the monitoring frequency, in writing, to a frequency allowed under § 141.854 for a similarly situated system that always serves 1,000 or fewer people, taking into account the provisions in § 141.854(e) through (g).

The state primacy agency adopts the Revised Total Coliform Rule by reference as published on February 13, 2013, in the *Federal Register* Volume 78, No. 30, and as updated on February 26, 2014, in the *Federal Register* Volume 79, No. 38, and with 40 CFR 141.858(a)(1) with the correct phrasing of through instead of though, such that:

If a sample taken under §§ 141.854 through* 141.857 is total coliform-positive, the system must collect a set of repeat samples within 24 hours of being notified of the positive result. The system must collect no fewer than three repeat samples for each total coliform-positive sample found. The State may extend the 24-hour limit on a case-by-case basis if the system has a logistical problem in collecting the repeat samples within 24 hours that is beyond its control. Alternatively, the State may implement criteria for the system to use in lieu of case-by-case extensions. In the case of an extension, the State must specify how much time the system has to collect the repeat samples. The State cannot waive the requirement for a system to collect repeat samples in paragraphs (a)(1) through (a)(3) of this section.

*NOTE: At a future date, EPA will address these errors in a second RTCR minor correction federal notice. However, EPA strongly encourages states to fix these errors now (as noted above) as part of their RTCR primacy application for February 13, 2015. In this way, subsequent resubmittal of the primacy application will not be necessary once the errors are addressed as part of a published minor correction federal notice.

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SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Part 141 National Primary Drinking Water Regulations			
SUBPART A – GENERAL			
40 CFR 141.2 DEFINITIONS.			
Clean compliance history is, for the purposes of subpart Y, a record of no MCL violations under § 141.63; no monitoring violations under § 141.21 or subpart Y; and no coliform treatment technique trigger exceedances or treatment technique violations under subpart Y.	40 CFR 141.2		
Level 1 assessment is an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. It is conducted by the system operator or owner. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., whether a ground water system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system.	40 CFR 141.2		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Level 2 assessment is an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. A Level 2 assessment provides a more detailed examination of the system (including the system's monitoring and operational practices) than does a Level 1 assessment through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices. It is conducted by an individual approved by the State, which may include the system operator. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., whether a ground water system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system. The system must comply with any expedited actions or additional actions required by the State in the case of an *E. coli* MCL violation.	40 CFR 141.2		
Sanitary defect is a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place.	40 CFR 141.2		
Seasonal system is a non-community water system that is not operated as a public water system on a year-round basis and starts up and shuts down at the beginning and end of each operating season.	40 CFR 141.2		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
40 CFR 141.4 VARIANCES AND EXEMPTIONS.			
Variances or exemptions from certain provisions of these regulations may be granted pursuant to sections 1415 and 1416 of the Act and subpart K of part 142 of this chapter (for small system variances) by the entity with primary enforcement responsibility, except that variances or exemptions from the MCLs for total coliforms and *E. coli* and variances from any of the treatment technique requirements of subpart H of this part may not be granted.	40 CFR 141.4(a)		
EPA has stayed the effective date of this section relating to the total coliform MCL of § 141.63(a) for systems that demonstrate to the State that the violation of the total coliform MCL is due to a persistent growth of total coliforms in the distribution system rather than fecal or pathogenic contamination, a treatment lapse or deficiency, or a problem in the operation or maintenance of the distribution system. This is stayed until March 31, 2016, at which time the total coliform MCL is no longer effective. Note to paragraph (a): As provided in § 142.304(a), small system variances are not available for rules addressing microbial contaminants, which would include subparts H, P, S, T, W, and Y of this part.	40 CFR 141.4(b)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
SUBPART C – MONITORING AND ANALYTICAL REQUIREMENTS			
40 CFR 141.21 COLIFORM SAMPLING.			
The provisions of paragraphs (a) and (d) of this section are applicable until March 31, 2016. The provisions of paragraphs (b), (c), (e), (f), and (g) of this section are applicable until all required repeat monitoring under paragraph (b) of this section and fecal coliform or *E. coli* testing under paragraph (e) of this section that was initiated by a total coliform-positive sample taken before April 1, 2016 is completed, as well as analytical method, reporting, recordkeeping, public notification, and consumer confidence report requirements associated with that monitoring and testing. Beginning April 1, 2016, the provisions of subpart Y of this part are applicable, with systems required to begin regular monitoring at the same frequency as the system-specific frequency required on March 31, 2016.	40 CFR 141.21(h)		
SUBPART F – MAXIMUM CONTAMINANT LEVEL GOALS AND MAXIMUM RESIDUAL DISINFECTANT LEVEL GOALS			
40 CFR 141.52 MAXIMUM CONTAMINANT LEVEL GOALS FOR MICROBIOLOGICAL CONTAMINANTS.			
MCLGs for the following contaminants are as indicated: Contaminant MCLG (1) *Giardia lamblia* ..... zero (2) Viruses ..... zero (3) *Legionella* ..... zero (4) Total coliforms (including fecal coliforms and *Escherichia coli*) ..... zero (5) *Cryptosporidium* ..... zero (6) *Escherichia coli (E. coli)* ..... zero	40 CFR 141.52(a)(1)-(6)		
The MCLG identified in paragraph (a)(4) of this section is applicable until March 31, 2016. The MCLG identified in paragraph (a)(6) of this section is applicable beginning April 1, 2016.	40 CFR 141.52(b)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
SUBPART G – NATIONAL PRIMARY DRINKING WATER REGULATIONS: MAXIMUM CONTAMINANT LEVELS AND MAXIMUM RESIDUAL DISINFECTANT LEVELS			
40 CFR 141.63 MAXIMUM CONTAMINANT LEVELS (MCLS) FOR MICROBIOLOGICAL CONTAMINANTS.			
Until March 31, 2016, the total coliform MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.	40 CFR 141.63(a)		
For a system that collects at least 40 samples per month, if no more than 5.0 percent of the samples collected during a month are total coliform-positive, the system is in compliance with the MCL for total coliforms.	40 CFR 141.63(a)(1)		
For a system that collects fewer than 40 samples per month, if no more than one sample collected during a month is total coliform-positive, the system is in compliance with the MCL for total coliforms.	40 CFR 141.63(a)(2)		
Until March 31, 2016, any fecal coliform-positive repeat sample or *E. coli*-positive repeat sample, or any total coliform-positive repeat sample following a fecal coliform-positive or *E. coli*-positive routine sample, constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in subpart Q of this part, this is a violation that may pose an acute risk to health.	40 CFR 141.63(b)		
Beginning April 1, 2016, a system is in compliance with the MCL for *E. coli* for samples taken under the provisions of subpart Y of this part unless any of the conditions identified in paragraphs (c)(1) through (c)(4) of this section occur. For purposes of the public notification requirements in subpart Q of this part, violation of the MCL may pose an acute risk to health.	40 CFR 141.63(c)		
The system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample.	40 CFR 141.63(c)(1)		
The system has a total coliform-positive repeat sample following an *E. coli*-positive routine sample.	40 CFR 141.63(c)(2)		
The system fails to take all required repeat samples following an *E. coli*-positive routine sample.	40 CFR 141.63(c)(3)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.	40 CFR 141.63(c)(4)		
Until March 31, 2016, a public water system must determine compliance with the MCL for total coliforms in paragraphs (a) and (b) of this section for each month in which it is required to monitor for total coliforms. Beginning April 1, 2016, a public water system must determine compliance with the MCL for *E. coli* in paragraph (c) of this section for each month in which it is required to monitor for total coliforms.	40 CFR 141.63(d)		
The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant level for total coliforms in paragraphs (a) and (b) of this section and for achieving compliance with the maximum contaminant level for *E. coli* in paragraph (c) of this section:	40 CFR 141.63(e)		
Protection of wells from fecal contamination by appropriate placement and construction;	40 CFR 141.63(e)(1)		
Maintenance of a disinfectant residual throughout the distribution system;	40 CFR 141.63(e)(2)		
Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, cross connection control, and continual maintenance of positive water pressure in all parts of the distribution system;	40 CFR 141.63(e)(3)		
Filtration and/or disinfection of surface water, as described in subparts H, P, T, and W of this part, or disinfection of ground water, as described in subpart S of this part, using strong oxidants such as chlorine, chlorine dioxide, or ozone; and	40 CFR 141.63(e)(4)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
For systems using ground water, compliance with the requirements of an EPA-approved State Wellhead Protection Program developed and implemented under section 1428 of the SDWA.	40 CFR 141.63(e)(5)		
The Administrator, pursuant to section 1412 of the Act, hereby identifies the technology, treatment techniques, or other means available identified in paragraph (e) of this section as affordable technology, treatment techniques, or other means available to systems serving 10,000 or fewer people for achieving compliance with the maximum contaminant level for total coliforms in paragraphs (a) and (b) of this section and for achieving compliance with the maximum contaminant level for *E. coli* in paragraph (c) of this section.	40 CFR 141.63(f)		
SUBPART H – FILTRATION AND DISINFECTION			
40 CFR 141.71 CRITERIA FOR AVOIDING FILTRATION.			
The public water system must comply with the maximum contaminant level (MCL) for total coliforms in § 141.63(a) and (b) and the MCL for *E. coli* in § 141.63(c) at least 11 months of the 12 previous months that the system served water to the public, on an ongoing basis, unless the State determines that failure to meet this requirement was not caused by a deficiency in treatment of the source water.	40 CFR 141.71(b)(5)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
40 CFR 141.74 ANALYTICAL AND MONITORING REQUIREMENTS.			
Until March 31, 2016, the residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in § 141.21. Beginning April 1, 2016, the residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in §§ 141.854 through 141.858. The State may allow a public water system which uses both a surface water source or a ground water source under direct influence of surface water, and a ground water source, to take disinfectant residual samples at points other than the total coliform sampling points if the State determines that such points are more representative of treated (disinfected) water quality within the distribution system. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) as specified in paragraph (a)(1) of this section, may be measured in lieu of residual disinfectant concentration.	40 CFR 141.74(b)(6)(i)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Until March 31, 2016, the residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in § 141.21. Beginning April 1, 2016, the residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in §§ 141.854 through 141.858. The State may allow a public water system which uses both a surface water source or a ground water source under direct influence of surface water, and a ground water source, to take disinfectant residual samples at points other than the total coliform sampling points if the State determines that such points are more representative of treated (disinfected) water quality within the distribution system. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) as specified in paragraph (a)(1) of this section, may be measured in lieu of residual disinfectant concentration.	40 CFR 141.74(c)(3)(i)		
SUBPART L – DISINFECTANT RESIDUALS, DISINFECTION BYPRODUCTS, AND DISINFECTION BYPRODUCT PRECURSORS			
40 CFR 141.132 MONITORING REQUIREMENTS.			
Routine monitoring. Until March 31, 2016, community and non-transient non-community water systems that use chlorine or chloramines must measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in § 141.21. Beginning April 1, 2016, community and non-transient non-community water systems that use chlorine or chloramines must measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in §§ 141.854 through 141.858. Subpart H systems of this part may use the results of residual disinfectant concentration sampling conducted under § 141.74(b)(6)(i) for unfiltered systems or § 141.74(c)(3)(i) for systems which filter, in lieu of taking separate samples.	40 CFR 141.132(c)(1)(i)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
SUBPART O – CONSUMER CONFIDENCE REPORTS			
40 CFR 141.153 CONTENT OF THE REPORTS.			
A report that contains information regarding a Level 1 or Level 2 Assessment required under Subpart Y of this part must include the applicable definitions:	40 CFR 141.153(c)(4)		
Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.	40 CFR 141.153(c)(4)(i)		
Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.	40 CFR 141.153(c)(4)(ii)		
For contaminants subject to an MCL, except turbidity, total coliform, fecal coliform and *E. coli*, the highest contaminant level used to determine compliance with an NPDWR and the range of detected levels, as follows:	40 CFR 141.153(d)(4)(iv)		
For total coliform analytical results until March 31, 2016:	40 CFR 141.153(d)(4)(vii)		
For fecal coliform and *E. coli* until March 31, 2016: The total number of positive samples;	40 CFR 141.153(d)(4)(viii)		
For *E. coli* analytical results under subpart Y: The total number of positive samples.	40 CFR 141.153(d)(4)(x)		
Systems required to comply with subpart Y.	40 CFR 141.153(h)(7)		
Any system required to comply with the Level 1 assessment requirement or a Level 2 assessment requirement that is not due to an *E. coli* MCL violation must include in the report the text found in paragraph (h)(7)(i)(A) and paragraphs (h)(7)(i)(B) and (C) of this section as appropriate, filling in the blanks accordingly and the text found in paragraphs (h)(7)(i)(D)(1) and (2) of this section if appropriate.	40 CFR 141.153(h)(7)(i)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.	40 CFR 141.153(h)(7)(i)(A)		
During the past year we were required to conduct [INSERT NUMBER OF LEVEL 1 ASSESSMENTS] Level 1 assessment(s). [INSERT NUMBER OF LEVEL 1 ASSESSMENTS] Level 1 assessment(s) were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.	40 CFR 141.153(h)(7)(i)(B)		
During the past year [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] Level 2 assessments were required to be completed for our water system. [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] Level 2 assessments were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.	40 CFR 141.153(h)(7)(i)(C)		
Any system that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate:	40 CFR 141.153(h)(7)(i)(D)		
During the past year we failed to conduct all of the required assessment(s).	40 CFR 141.153(h)(7)(i)(D)(*1*)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
During the past year we failed to correct all identified defects that were found during the assessment.	40 CFR 141.153(h)(7)(i)(D)(*2*)		
Any system required to conduct a Level 2 assessment due to an *E. coli* MCL violation must include in the report the text found in paragraphs (h)(7)(ii)(A) and (B) of this section, filling in the blanks accordingly and the text found in paragraphs (h)(7)(ii)(C)(1) and (2) of this section, if appropriate.	40 CFR 141.153(h)(7)(ii)		
E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.	40 CFR 141.153(h)(7)(ii)(A)		
We were required to complete a Level 2 assessment because we found *E. coli* in our water system. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.	40 CFR 141.153(h)(7)(ii)(B)		
Any system that has failed to complete the required assessment or correct all identified sanitary defects, is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate:	40 CFR 141.153(h)(7)(ii)(C)		
We failed to conduct the required assessment.	40 CFR 141.153(h)(7)(ii)(C)(*1*)		
We failed to correct all sanitary defects that were identified during the assessment that we conducted.	40 CFR 141.153(h)(7)(ii)(C)(*2*)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
If a system detects *E. coli* and has violated the *E. coli* MCL, in addition to completing the table as required in paragraph (d)(4) of this section, the system must include one or more of the following statements to describe any noncompliance, as applicable:	40 CFR 141.153(h)(7)(iii)		
We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample.	40 CFR 141.153(h)(7)(iii)(A)		
We had a total coliform-positive repeat sample following an *E. coli*-positive routine sample.	40 CFR 141.153(h)(7)(iii)(B)		
We failed to take all required repeat samples following an *E. coli*-positive routine sample.	40 CFR 141.153(h)(7)(iii)(C)		
We failed to test for *E. coli* when any repeat sample tests positive for total coliform.	40 CFR 141.153(h)(7)(iii)(D)		
If a system detects *E. coli* and has not violated the *E. coli* MCL, in addition to completing the table as required in paragraph (d)(4) of this section, the system may include a statement that explains that although they have detected *E. coli*, they are not in violation of the *E. coli* MCL.	40 CFR 141.153(h)(7)(iv)		

Appendix A to Subpart O of Part 141—Regulated contaminants

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Microbiological contaminants:						
Total Coliform Bacteria †	MCL (systems that collect ≥ 40 samples/month) 5% of monthly samples are positive; (systems that collect < 40 samples/month) 1 positive monthly sample.		MCL (systems that collect ≥ 40 samples/month) 5% of monthly samples are positive; (systems that collect < 40 samples/month) 1 positive monthly sample.	0	Naturally present in the environment.	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Total Coliform Bacteria ‡	TT		TT	N/A	Naturally present in the environment.	Use language found in § 141.153(h)(7)(i)(A)
Fecal coliform and *E. coli* †	0		0	0	Human and animal fecal waste.	Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
E. coli ‡	Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.		Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.	0	Human and animal fecal waste.	*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems.
† Until March 31, 2016. ‡ Beginning April 1, 2016.						

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
SUBPART Q – PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS			
40 CFR 141.202 – TIER 1 PUBLIC NOTICE—FORM, MANNER, AND FREQUENCY OF NOTICE.			
TABLE 1 TO § 141.202—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 1 PUBLIC NOTICE	40 CFR 141.202(a)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Violation of the MCL for *E. coli* (as specified in § 141.63(c));	40 CFR 141.202(a)(1)		
40 CFR 141.203 – TIER 2 PUBLIC NOTICE—FORM, MANNER, AND FREQUENCY OF NOTICE.			
The public water system must repeat the notice every three months as long as the violation or situation persists, unless the primacy agency determines that appropriate circumstances warrant a different repeat notice frequency. In no circumstance may the repeat notice be given less frequently than once per year. It is not appropriate for the primacy agency to allow less frequent repeat notice for an MCL or treatment technique violation under the Total Coliform Rule or subpart Y of this part or a treatment technique violation under the Surface Water Treatment Rule or Interim Enhanced Surface Water Treatment Rule. It is also not appropriate for the primacy agency to allow through its rules or policies across-the-board reductions in the repeat notice frequency for other ongoing violations requiring a Tier 2 repeat notice. Primacy agency determinations allowing repeat notices to be given less frequently than once every three months must be in writing.	40 CFR 141.203(b)(2)		
40 CFR 141.204 – TIER 3 PUBLIC NOTICE—FORM, MANNER, AND FREQUENCY OF NOTICE.			
TABLE 1 TO § 141.204—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 3 PUBLIC NOTICE	40 CFR 141.204(a)		
Availability of unregulated contaminant monitoring results, as required under § 141.207;	40 CFR 141.204(a)(4)		
Exceedance of the fluoride secondary maximum contaminant level (SMCL), as required under § 141.208; and	40 CFR 141.204(a)(5)		
Reporting and Recordkeeping violations under subpart Y of 40 CFR part 141.	40 CFR 141.204(a)(6)		

Appendix A to Subpart Q of Part 141—NPDWR Violations and Other Situations Requiring Public Notice[1]

Contaminant	MCL/MRDL/TT violations[2] Tier of public notice required	MCL/MRDL/TT violations[2] Citation	Monitoring, testing & reporting procedure violations Tier of public notice required	Monitoring, testing & reporting procedure violations Citation
I. Violations of National Primary Drinking Water Regulations (NPDWR):[3]				
A. Microbiological Contaminants				
1.a Total coliform bacteria †	2	141.63(a)	3	141.21(a)-(e)
1.b Total coliform (TT violations resulting from failure to perform assessments or corrective actions, monitoring violations, and reporting violations) ‡	2	141.860(b)(1)	3	141.860(c)(1) 141.860(d)(1)
1.c Seasonal system failure to follow State-approved start-up plan prior to serving water to the public or failure to provide certification to State. ‡	2	141.860(b)(2)	3	141.860(d)(3)
2.a Fecal coliform/*E. coli* †	1	141.63(b)	[4]1,3	141.21(e)
2.b *E. coli* (MCL, monitoring, and reporting violations) ‡	1	141.860(a)	3	141.860(c)(2) 141.860(d)(1) 141.860(d)(2)
2.c *E. coli* (TT violations resulting from failure to perform level 2 Assessments or corrective action) ‡	2	141.860(b)(1)		

Appendix A—Endnotes

† Until March 31, 2016.

‡ Beginning April 1, 2016.

1. Violations and other situations not listed in this table (e.g., failure to prepare Consumer Confidence Reports), do not require notice, unless otherwise determined by the primacy agency. Primacy agencies may, at their option, also require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under § 141.202(a) and § 141.203(a).

2. MCL – Maximum contaminant level, MRDL – Maximum residual disinfectant level, TT – Treatment technique

3. The term Violations of National Primary Drinking Water Regulations (NPDWR) is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.

4. Failure to test for fecal coliform or *E. coli* is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3.

Appendix B to Subpart Q of Part 141—Standard Health Effects Language for Public Notification

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
National Primary Drinking Water Regulations (NPDWR)			
A. Microbiological Contaminants			

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
1a. Total coliform †	Zero	See footnote[3]	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
1b. Fecal coliform/*E. coli* †	Zero	Zero	Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
1e. Subpart Y Coliform Assessment and/or Corrective Action Violations ‡	N/A	TT	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found. [THE SYSTEM MUST USE THE FOLLOWING APPLICABLE SENTENCES.] We failed to conduct the required assessment. We failed to correct all identified sanitary defects that were found during the assessment(s).
1f. Subpart Y *E. coli* Assessment and/or Corrective Action Violations ‡	N/A	TT	*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for *E. coli*, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found. [THE SYSTEM MUST USE THE FOLLOWING APPLICABLE SENTENCES.] We failed to conduct the required assessment. We failed to correct all identified sanitary defects that were found during the assessment that we conducted.

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
1g. *E. coli* ‡	Zero	In compliance unless one of the following conditions occurs: (1) The system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample. (2) The system has a total coliform-positive repeat sample following an *E. coli*-positive routine sample. (3) The system fails to take all required repeat samples following an *E. coli*-positive routine sample. (4) The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.	*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems.
1h. Subpart Y Seasonal System TT Violations ‡	N/A	TT	When this violation includes the failure to monitor for total coliforms or *E. coli* prior to serving water to the public, the mandatory language found at 141.205(d)(2) must be used. When this violation includes failure to complete other actions, the appropriate elements found in 141.205(a) to describe the violation must be used.

† Until March 31, 2016.

‡ Beginning April 1, 2016.

1. MCLG—Maximum contaminant level goal

2. MCL—Maximum contaminant level

3. For water systems analyzing at least 40 samples per month, no more than 5.0 percent of the monthly samples may be positive for total coliforms. For systems analyzing fewer than 40 samples per month, no more than one sample per month may be positive for total coliforms.

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Subpart S – Ground Water Rule			
40 CFR 141.402 Ground Water Source Microbial Monitoring and Analytical Methods.			
Triggered source water monitoring—	40 CFR 141.402(a)		
General requirements. A ground water system must conduct triggered source water monitoring if the conditions identified in paragraphs (a)(1)(i) and either (a)(1)(ii) or (a)(1)(iii) of this section exist.	40 CFR 141.402(a)(1)		
The system does not provide at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for each ground water source; and either	40 CFR 141.402(a)(1)(i)		
The system is notified that a sample collected under § 141.21(a) is total coliform-positive and the sample is not invalidated under § 141.21(c) until March 31, 2016, or	40 CFR 141.402(a)(1)(ii)		
The system is notified that a sample collected under §§ 141.854 through 141.857 is total coliform-positive and the sample is not invalidated under § 141.853(c) beginning April 1, 2016.	40 CFR 141.402(a)(1)(iii)		
Sampling requirements. A ground water system must collect, within 24 hours of notification of the total coliform-positive sample, at least one ground water source sample from each ground water source in use at the time the total coliform-positive sample was collected under § 141.21(a) until March 31, 2016, or collected under §§ 141.854 through 141.857 beginning April 1, 2016, except as provided in paragraph (a)(2)(ii) of this section.	40 CFR 141.402(a)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
The State may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the ground water source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the State must specify how much time the system has to collect the sample.	40 CFR 141.402(a)(2)(i)		
If approved by the State, systems with more than one ground water source may meet the requirements of this paragraph (a)(2) by sampling a representative ground water source or sources. If directed by the State, systems must submit for State approval a triggered source water monitoring plan that identifies one or more ground water sources that are representative of each monitoring site in the system's sample siting plan under § 141.21(a) until March 31, 2016, or under § 141.853 beginning April 1, 2016, and that the system intends to use for representative sampling under this paragraph.	40 CFR 141.402(a)(2)(ii)		
Until March 31, 2016, a ground water system serving 1,000 or fewer people may use a repeat sample collected from a ground water source to meet both the requirements of § 141.21(b) and to satisfy the monitoring requirements of paragraph (a)(2) of this section for that ground water source only if the State approves the use of *E. coli* as a fecal indicator for source water monitoring under this paragraph (a). If the repeat sample collected from the ground water source is *E. coli*-positive, the system must comply with paragraph (a)(3) of this section.	40 CFR 141.402(a)(2)(iii)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Beginning April 1, 2016, a ground water system serving 1,000 or fewer people may use a repeat sample collected from a ground water source to meet both the requirements of subpart Y and to satisfy the monitoring requirements of paragraph (a)(2) of this section for that ground water source only if the State approves the use of *E. coli* as a fecal indicator for source water monitoring under this paragraph (a) and approves the use of a single sample for meeting both the triggered source water monitoring requirements in this paragraph (a) and the repeat monitoring requirements in § 141.858. If the repeat sample collected from the ground water source is *E. coli*-positive, the system must comply with paragraph (a)(3) of this section.	40 CFR 141.402(a)(2)(iv)		
Additional requirements. If the State does not require corrective action under § 141.403(a)(2) for a fecal indicator-positive source water sample collected under paragraph (a)(2) of this section that is not invalidated under paragraph (d) of this section, the system must collect five additional source water samples from the same source within 24 hours of being notified of the fecal indicator-positive sample.	40 CFR 141.402(a)(3)		
Consecutive and wholesale systems.	40 CFR 141.402(a)(4)		
In addition to the other requirements of this paragraph (a), a consecutive ground water system that has a total coliform-positive sample collected under § 141.21(a) until March 31, 2016, or under §§ 141.854 through 141.857 beginning April 1, 2016, must notify the wholesale system(s) within 24 hours of being notified of the total coliform-positive sample.	40 CFR 141.402(a)(4)(i)		
In addition to the other requirements of this paragraph (a), a wholesale ground water system must comply with paragraphs (a)(4)(ii)(A) and (a)(4)(ii)(B) of this section.	40 CFR 141.402(a)(4)(ii)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
A wholesale ground water system that receives notice from a consecutive system it serves that a sample collected under § 141.21(a) until March 31, 2016, or collected under §§ 141.854 through 141.857 beginning April 1, 2016, is total coliform-positive must, within 24 hours of being notified, collect a sample from its ground water source(s) under paragraph (a)(2) of this section and analyze it for a fecal indicator under paragraph (c) of this section.	40 CFR 141.402(a)(4)(ii)(A)		
If the sample collected under paragraph (a)(4)(ii)(A) of this section is fecal indicator-positive, the wholesale ground water system must notify all consecutive systems served by that ground water source of the fecal indicator source water positive within 24 hours of being notified of the ground water source sample monitoring result and must meet the requirements of paragraph (a)(3) of this section.	40 CFR 141.402(a)(4)(ii)(B)		
Exceptions to the triggered source water monitoring requirements. A ground water system is not required to comply with the source water monitoring requirements of paragraph (a) of this section if either of the following conditions exists:	40 CFR 141.402(a)(5)		
The State determines, and documents in writing, that the total coliform-positive sample collected under § 141.21(a) until March 31, 2016, or under §§ 141.854 through 141.857 beginning April 1, 2016, is caused by a distribution system deficiency; or	40 CFR 141.402(a)(5)(i)		
The total coliform-positive sample collected under § 141.21(a) until March 31, 2016, or under §§ 141.854 through 141.857 beginning April 1, 2016, is collected at a location that meets State criteria for distribution system conditions that will cause total coliform-positive samples.	40 CFR 141.402(a)(5)(ii)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
40 CFR 141.405 Reporting and Recordkeeping for Ground water Systems.			
For consecutive systems, documentation of notification to the wholesale system(s) of total coliform-positive samples that are not invalidated under § 141.21(c) until March 31, 2016, or under § 141.853 beginning April 1, 2016. Documentation shall be kept for a period of not less than five years.	40 CFR 141.405(b)(4)		
Subpart X – Aircraft Drinking Water Rule			
40 CFR 141.803 Coliform Sampling.			
Air carriers must conduct analyses for total coliform and *E. coli* in accordance with the analytical methods approved in § 141.21(f)(3) and 141.21(f)(6)) until March 31, 2016, and in accordance with the analytical methods approved in § 141.852 beginning April 1, 2016.	40 CFR 141.803(a)(3)		
The invalidation of a total coliform sample result can be made only by the Administrator in accordance with § 141.21(c)(1)(i), (ii), or (iii) or by the certified laboratory in accordance with § 141.21(c)(2) until March 31, 2016, or in accordance with § 141.853(c) beginning April 1, 2016, with the Administrator acting as the State.	40 CFR 141.803(a)(5)		
Subpart Y – Revised Total Coliform Rule			
40 CFR 141.851 General.			
General. The provisions of this subpart include both maximum contaminant level and treatment technique requirements.	40 CFR 141.851(a)		
Applicability. The provisions of this subpart apply to all public water systems.	40 CFR 141.851(b)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Compliance date. Systems must comply with the provisions of this subpart beginning April 1, 2016, unless otherwise specified in this subpart.	40 CFR 141.851(c)		
Implementation with EPA as State. Systems falling under direct oversight of EPA, where EPA acts as the State, must comply with decisions made by EPA for implementation of subpart Y. EPA has authority to establish such procedures and criteria as are necessary to implement subpart Y.	40 CFR 141.851(d)		
Violations of national primary drinking water regulations. Failure to comply with the applicable requirements of §§ 141.851 through 141.861, including requirements established by the State pursuant to these provisions, is a violation of the national primary drinking water regulations under subpart Y.	40 CFR 141.851(e)		
40 CFR 141.852 Analytical Methods and Laboratory certification.			
Analytical methodology	40 CFR 141.852(a)		
The standard sample volume required for analysis, regardless of analytical method used, is 100 ml.	40 CFR 141.852(a)(1)		
Systems need only determine the presence or absence of total coliforms and *E. coli*; a determination of density is not required.	40 CFR 141.852(a)(2)		
The time from sample collection to initiation of test medium incubation may not exceed 30 hours. Systems are encouraged but not required to hold samples below 10 deg. C during transit.	40 CFR 141.852(a)(3)		
If water having residual chlorine (measured as free, combined, or total chlorine) is to be analyzed, sufficient sodium thiosulfate ($Na_2S_2O_3$) must be added to the sample bottle before sterilization to neutralize any residual chlorine in the water sample. Dechlorination procedures are addressed in Section 9060A.2 of *Standard Methods for the Examination of Water and Wastewater* (20th and 21st editions).	40 CFR 141.852(a)(4)		

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Systems must conduct total coliform and *E. coli* analyses in accordance with one of the analytical methods in the following table or one of the alternative methods listed in Appendix A to subpart C of part 141.	40 CFR 141.852(a)(5)		

Organism	Methodology Category	Method [1]	Citation [1]
Total Coliforms	Lactose Fermentation Methods	Standard Total Coliform Fermentation Technique	Standard Methods 9221 B.1, B.2 (20th ed.; 21st ed.) [2, 3] Standard Methods Online 9221 B.1, B.2–99 [2, 3]
Total Coliforms	Lactose Fermentation Methods	Presence-Absence (P–A) Coliform Test	Standard Methods 9221 D.1, D.2 (20th ed.; 21st ed.) [2, 7] Standard Methods Online 9221 D.1, D.2–99 [2, 7]
Total Coliforms	Membrane Filtration Methods	Standard Total Coliform Membrane Filter Procedure	Standard Methods 9222 B, C (20th ed.; 21st ed.) [2, 4] Standard Methods Online 9222 B–97 [2, 4], 9222 C–97 [2, 4]
Total Coliforms	Membrane Filtration Methods	Membrane Filtration using MI medium m-ColiBlue24® Test [2, 4] Chromocult [2, 4]	EPA Method 1604 [2]
Total Coliforms	Enzyme Substrate Methods	Colilert®	Standard Methods 9223 B (20th ed.; 21st ed.) [2, 5] Standard Methods Online 9223 B–97 [2, 5]
Total Coliforms	Enzyme Substrate Methods	Colisure®	Standard Methods 9223 B (20th ed.; 21st ed.) [2, 5, 6] Standard Methods Online 9223 B–97 [2, 5, 6]
Total Coliforms	Enzyme Substrate Methods	E*Colite® Test [2] Readycult® Test [2] modified Colitag® Test [2]	
Escherichia coli	*Escherichia coli* Procedure (following Lactose Fermentation Methods) *Escherichia coli* Partition Method	EC–MUG medium	Standard Methods 9221 F.1 (20th ed.; 21st ed.) [2]
Escherichia coli	*Escherichia coli* Partition Method	EC broth with MUG (EC–MUG)	Standard Methods 9222 G.1c(2) (20th ed.; 21st ed.) [2, 8]
Escherichia coli	*Escherichia coli* Partition Method	NA–MUG medium	Standard Methods 9222 G.1c(1) (20th ed.; 21st ed.) [2]
Escherichia coli	Membrane Filtration Methods	Membrane Filtration using MI medium m-ColiBlue24® Test [2, 4] Chromocult [2, 4]	EPA Method 1604 [2]
Escherichia coli	Enzyme Substrate Methods	Colilert®	Standard Methods 9223 B (20th ed.; 21st ed.) [2, 5] Standard Methods Online 9223 B–97 [2, 5, 6]

Organism	Methodology Category	Method [1]	Citation [1]
Escherichia coli	Enzyme Substrate Methods	Colisure®	Standard Methods 9223 B (20th ed.; 21st ed.) [2, 5, 6] Standard Methods Online 9223 B–97 [2, 5, 6]
Escherichia coli	Enzyme Substrate Methods	E*Colite® Test [2] Readycult® Test [2] modified Colitag® Test [2]	

1. The procedures must be done in accordance with the documents listed in paragraph (c) of this section. For Standard Methods, either editions, 20th (1998) or 21st (2005), may be used. For the Standard Methods Online, the year in which each method was approved by the Standard Methods Committee is designated by the last two digits following the hyphen in the method number. The methods listed are the only online versions that may be used. For vendor methods, the date of the method listed in paragraph (c) of this section is the date/version of the approved method. The methods listed are the only versions that may be used for compliance with this rule. Laboratories should be careful to use only the approved versions of the methods, as product package inserts may not be the same as the approved versions of the methods.
2. Incorporated by reference. See paragraph (c) of this section.
3. Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between lactose broth and lauryl tryptose broth using the water normally tested, and if the findings from this comparison demonstrate that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than 10 percent.
4. All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is pre-sterilized by the manufacturer (i.e., disposable funnel units) may be used.
5. Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this regulation.
6. Colisure® results may be read after an incubation time of 24 hours.
7. A multiple tube enumerative format, as described in *Standard Methods for the Examination of Water and Wastewater* 9221, is approved for this method for use in presence-absence determination under this regulation.
8. The following changes must be made to the EC broth with MUG (EC–MUG) formulation: Potassium dihydrogen phosphate, KH_2PO_4, must be 1.5g, and 4- methylumbelliferyl-Beta-D-glucuronide must be 0.05 g.

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Laboratory certification. Systems must have all compliance samples required under this subpart analyzed by a laboratory certified by the EPA or a primacy State to analyze drinking water samples. The laboratory used by the system must be certified for each method (and associated contaminant(s)) used for compliance monitoring analyses under this rule.	40 CFR 141.852(b)		

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Incorporation by reference. The standards required in this section are incorporated by reference into this section with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, EPA must publish notice of change in the Federal Register and the material must be available to the public. All approved material is available for inspection either electronically at www.regulations.gov, in hard copy at the Water Docket, or from the sources indicated below. The Docket ID is EPA–HQ–OW–2008–0878. Hard copies of these documents may be viewed at the Water Docket in the EPA Docket Center, (EPA/DC) EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, *excluding legal holidays.* The telephone number for the Public Reading Room is 1–202–566–1744, and the telephone number for the Water Docket is 1–202–566–2426. Copyrighted materials are only available for viewing in hard copy. These documents are also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 1–202–741–6030 or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.	40 CFR 141.852(c)		
American Public Health Association, 800 I Street, NW., Washington, DC 20001.	40 CFR 141.852(c)(1)		
"Standard Methods for the Examination of Water and Wastewater," 20th edition (1998):	40 CFR 141.852(c)(1)(i)		
Standard Methods 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group," B.1, B.2, "Standard Total Coliform Fermentation Technique."	40 CFR 141.852(c)(1)(i)(A)		

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Standard Methods 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group," D.1, D.2, "Presence-Absence (P–A) Coliform Test."	40 CFR 141.852(c)(1)(i)(B)		
Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," B, "Standard Total Coliform Membrane Filter Procedure."	40 CFR 141.852(c)(1)(i)(C)		
Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," C, "Delayed-Incubation Total Coliform Procedure."	40 CFR 141.852(c)(1)(i)(D)		
Standard Methods 9223, "Enzyme Substrate Coliform Test," B, "Enzyme Substrate Test," Colilert® and Colisure®.	40 CFR 141.852(c)(1)(i)(E)		
Standard Methods 9221, "Multiple Tube Fermentation Technique for Members of the Coliform Group," F.1, "*Escherichia coli* Procedure: EC–MUG medium."	40 CFR 141.852(c)(1)(i)(F)		
Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," G.1.c(2), "*Escherichia coli* Partition Method: EC broth with MUG (EC–MUG)."	40 CFR 141.852(c)(1)(i)(G)		
Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," G.1.c(1), "*Escherichia coli* Partition Method: NA–MUG medium."	40 CFR 141.852(c)(1)(i)(H)		
"Standard Methods for the Examination of Water and Wastewater," 21st edition (2005):	40 CFR 141.852(c)(1)(ii)		
Standard Methods 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group," B.1, B.2, "Standard Total Coliform Fermentation Technique."	40 CFR 141.852(c)(1)(ii)(A)		
Standard Methods 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group," D.1, D.2, "Presence-Absence (P–A) Coliform Test."	40 CFR 141.852(c)(1)(ii)(B)		
Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," B, "Standard Total Coliform Membrane Filter Procedure."	40 CFR 141.852(c)(1)(ii)(C)		

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Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," C, "Delayed-Incubation Total Coliform Procedure."	40 CFR 141.852(c)(1)(ii)(D)		
Standard Methods 9223, "Enzyme Substrate Coliform Test," B, "Enzyme Substrate Test," Colilert® and Colisure®.	40 CFR 141.852(c)(1)(ii)(E)		
Standard Methods 9221, "Multiple Tube Fermentation Technique for Members of the Coliform Group," F.1, "*Escherichia coli* Procedure: EC–MUG medium."	40 CFR 141.852(c)(1)(ii)(F)		
Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," G.1.c(2), "*Escherichia coli* Partition Method: EC broth with MUG (EC–MUG)."	40 CFR 141.852(c)(1)(ii)(G)		
Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," G.1.c(1), "*Escherichia coli* Partition Method: NA–MUG medium."	40 CFR 141.852(c)(1)(ii)(H)		
"Standard Methods Online" available at http://www.standardmethods.org:	40 CFR 141.852(c)(1)(iii)		
Standard Methods Online 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group" (1999), B.1, B.2–99, "Standard Total Coliform Fermentation Technique."	40 CFR 141.852(c)(1)(iii)(A)		
Standard Methods Online 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group" (1999), D.1, D.2–99, "Presence-Absence (P–A) Coliform Test."	40 CFR 141.852(c)(1)(iii)(B)		
Standard Methods Online 9222, "Membrane Filter Technique for Members of the Coliform Group" (1997), B–97, "Standard Total Coliform Membrane Filter Procedure."	40 CFR 141.852(c)(1)(iii)(C)		
Standard Methods Online 9222, "Membrane Filter Technique for Members of the Coliform Group" (1997), C–97, "Delayed-Incubation Total Coliform Procedure."	40 CFR 141.852(c)(1)(iii)(D)		

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Standard Methods Online 9223, "Enzyme Substrate Coliform Test" (1997), B–97, "Enzyme Substrate Test", Colilert® and Colisure®.	40 CFR 141.852(c)(1)(iii)(E)		
Charm Sciences, Inc., 659 Andover Street, Lawrence, MA 01843–1032, telephone 1–800–343–2170:	40 CFR 141.852(c)(2)		
E*Colite®—"Charm E*Colite™ Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Drinking Water," January 9, 1998.	40 CFR 141.852(c)(2)(i)		
[Reserved]	40 CFR 141.852(c)(2)(ii)		
CPI International, Inc., 5580 Skylane Blvd., Santa Rosa, CA, 95403, telephone 1–800–878–7654:	40 CFR 141.852(c)(3)		
modified Colitag®, ATP D05–0035—"Modified Colitag™ Test Method for the Simultaneous Detection of *E. coli* and other Total Coliforms in Water," August 28, 2009.	40 CFR 141.852(c)(3)(i)		
[Reserved]	40 CFR 141.852(c)(3)(ii)		
EMD Millipore (a division of Merck KGaA, Darmstadt Germany), 290 Concord Road, Billerica, MA 01821, telephone 1–800–645–5476:	40 CFR 141.852(c)(4)		
Chromocult—"Chromocult® Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and *Escherichia coli* for Finished Waters," November 2000, Version 1.0.	40 CFR 141.852(c)(4)(i)		
Readycult®—"Readycult® Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters," January 2007, Version 1.1.	40 CFR 141.852(c)(4)(ii)		
EPA's Water Resource Center (MC–4100T), 1200 Pennsylvania Avenue NW., Washington, DC 20460, telephone 1–202–566–1729:	40 CFR 141.852(c)(5)		

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EPA Method 1604, EPA 821–R–02–024—"EPA Method 1604: Total Coliforms and *Escherichia coli* in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium)," September 2002, http://www.epa.gov/nerlcwww/1604sp02.pdf.	40 CFR 141.852(c)(5)(i)		
[Reserved]	40 CFR 141.852(c)(5)(ii)		
Hach Company, P.O. Box 389, Loveland, CO 80539, telephone 1–800–604–3493:	40 CFR 141.852(c)(6)		
m-ColiBlue24®—"Membrane Filtration Method m-ColiBlue24® Broth," Revision 2, August 17, 1999.	40 CFR 141.852(c)(6)(i)		
[Reserved]	40 CFR 141.852(c)(6)(ii)		
40 CFR 141.853 General Monitoring Requirements for All Public Water Systems.			
Sample siting plans.	40 CFR 141.853(a)		
Systems must develop a written sample siting plan that identifies sampling sites and a sample collection schedule that are representative of water throughout the distribution system not later than March 31, 2016. These plans are subject to State review and revision. Systems must collect total coliform samples according to the written sample siting plan. Monitoring required by §§ 141.854 through 141.858 may take place at a customer's premise, dedicated sampling station, or other designated compliance sampling location. Routine and repeat sample sites and any sampling points necessary to meet the requirements of subpart S must be reflected in the sampling plan.	40 CFR 141.853(a)(1)		
Systems must collect samples at regular time intervals throughout the month, except that systems that use only ground water and serve 4,900 or fewer people may collect all required samples on a single day if they are taken from different sites.	40 CFR 141.853(a)(2)		
Systems must take at least the minimum number of required samples even if the system has had an *E. coli* MCL violation or has exceeded the coliform treatment technique triggers in § 141.859(a).	40 CFR 141.853(a)(3)		

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A system may conduct more compliance monitoring than is required by this subpart to investigate potential problems in the distribution system and use monitoring as a tool to assist in uncovering problems. A system may take more than the minimum number of required routine samples and must include the results in calculating whether the coliform treatment technique trigger in § 141.859(a)(1)(i) and (ii) has been exceeded only if the samples are taken in accordance with the existing sample siting plan and are representative of water throughout the distribution system.	40 CFR 141.853(a)(4)		
Systems must identify repeat monitoring locations in the sample siting plan. Unless the provisions of paragraphs (a)(5)(i) or (a)(5)(ii) of this section are met, the system must collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. If a total coliform-positive sample is at the end of the distribution system, or one service connection away from the end of the distribution system, the system must still take all required repeat samples. However, the State may allow an alternative sampling location in lieu of the requirement to collect at least one repeat sample upstream or downstream of the original sampling site. Except as provided for in paragraph (a)(5)(ii) of this section, systems required to conduct triggered source water monitoring under § 141.402(a) must take ground water source sample(s) in addition to repeat samples required under this subpart.	40 CFR 141.853(a)(5)		

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Systems may propose repeat monitoring locations to the State that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan. The system must design its SOP to focus the repeat samples at locations that best verify and determine the extent of potential contamination of the distribution system area based on specific situations. The State may modify the SOP or require alternative monitoring locations as needed.	40 CFR 141.853(a)(5)(i)		
Ground water systems serving 1,000 or fewer people may propose repeat sampling locations to the State that differentiate potential source water and distribution system contamination (e.g., by sampling at entry points to the distribution system). A ground water system with a single well required to conduct triggered source water monitoring may, with written State approval, take one of its repeat samples at the monitoring location required for triggered source water monitoring under § 141.402(a) if the system demonstrates to the State's satisfaction that the sample siting plan remains representative of water quality in the distribution system. If approved by the State, the system may use that sample result to meet the monitoring requirements in both § 141.402(a) and this section.	40 CFR 141.853(a)(5)(ii)		
If a repeat sample taken at the monitoring location required for triggered source water monitoring is *E. coli*-positive, the system has violated the *E. coli* MCL and must also comply with § 141.402(a)(3). If a system takes more than one repeat sample at the monitoring location required for triggered source water monitoring, the system may reduce the number of additional source water samples required under § 141.402(a)(3) by the number of repeat samples taken at that location that were not *E. coli*-positive.	40 CFR 141.853(a)(5)(ii)(A)		

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If a system takes more than one repeat sample at the monitoring location required for triggered source water monitoring under § 141.402(a), and more than one repeat sample is *E. coli*-positive, the system has violated the *E. coli* MCL and must also comply with § 141.403(a)(1).	40 CFR 141.853(a)(5)(ii)(B)		
If all repeat samples taken at the monitoring location required for triggered source water monitoring are *E. coli*-negative and a repeat sample taken at a monitoring location other than the one required for triggered source water monitoring is *E. coli*-positive, the system has violated the *E. coli* MCL, but is not required to comply with § 141.402(a)(3).	40 CFR 141.853(a)(5)(ii)(C)		
States may review, revise, and approve, as appropriate, repeat sampling proposed by systems under paragraphs (a)(5)(i) and (ii) of this section. The system must demonstrate that the sample siting plan remains representative of the water quality in the distribution system. The State may determine that monitoring at the entry point to the distribution system (especially for undisinfected ground water systems) is effective to differentiate between potential source water and distribution system problems.	40 CFR 141.853(a)(6)		
Special purpose samples. Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, must not be used to determine whether the coliform treatment technique trigger has been exceeded. Repeat samples taken pursuant to § 141.858 are not considered special purpose samples, and must be used to determine whether the coliform treatment technique trigger has been exceeded.	40 CFR 141.853(b)		
Invalidation of total coliform samples. A total coliform-positive sample invalidated under this paragraph (c) of this section does not count toward meeting the minimum monitoring requirements of this subpart.	40 CFR 141.853(c)		

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The State may invalidate a total coliform-positive sample only if the conditions of paragraph (c)(1)(i), (ii), or (iii) of this section are met.	40 CFR 141.853(c)(1)		
The laboratory establishes that improper sample analysis caused the total coliform-positive result.	40 CFR 141.853(c)(1)(i)		
The State, on the basis of the results of repeat samples collected as required under § 141.858(a), determines that the total coliform-positive sample resulted from a domestic or other non-distribution system plumbing problem. The State cannot invalidate a sample on the basis of repeat sample results unless all repeat sample(s) collected at the same tap as the original total coliform-positive sample are also total coliform-positive, and all repeat samples collected at a location other than the original tap are total coliform-negative (e.g., a State cannot invalidate a total coliform-positive sample on the basis of repeat samples if all the repeat samples are total coliform-negative, or if the system has only one service connection).	40 CFR 141.853(c)(1)(ii)		
The State has substantial grounds to believe that a total coliform-positive result is due to a circumstance or condition that does not reflect water quality in the distribution system. In this case, the system must still collect all repeat samples required under § 141.858(a), and use them to determine whether a coliform treatment technique trigger in § 141.859 has been exceeded. To invalidate a total coliform-positive sample under this paragraph, the decision and supporting rationale must be documented in writing, and approved and signed by the supervisor of the State official who recommended the decision. The State must make this document available to EPA and the public. The written documentation must state the specific cause of the total coliform-positive sample, and what action the system has taken, or will take, to correct this problem. The State may not invalidate a total coliform-positive sample solely on the grounds that all repeat samples are total coliform-negative.	40 CFR 141.853(c)(1)(iii)		

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A laboratory must invalidate a total coliform sample (unless total coliforms are detected) if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined (e.g., the Multiple-Tube Fermentation Technique), produces a turbid culture in the absence of an acid reaction in the Presence-Absence (P–A) Coliform Test, or exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter (e.g., Membrane Filter Technique). If a laboratory invalidates a sample because of such interference, the system must collect another sample from the same location as the original sample within 24 hours of being notified of the interference problem, and have it analyzed for the presence of total coliforms. The system must continue to re-sample within 24 hours and have the samples analyzed until it obtains a valid result. The State may waive the 24-hour time limit on a case-by-case basis. Alternatively, the State may implement criteria for waiving the 24-hour sampling time limit to use in lieu of case-by-case extensions.	40 CFR 141.853(c)(2)		
40 CFR 141.854 Routine Monitoring Requirements for Non-Community Water Systems Serving 1,000 or Fewer People Using Only Ground Water.			
General.	40 CFR 141.854(a)		
The provisions of this section apply to non-community water systems using only ground water (except ground water under the direct influence of surface water, as defined in § 141.2) and serving 1,000 or fewer people.	40 CFR 141.854(a)(1)		
Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in § 141.858.	40 CFR 141.854(a)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Once all monitoring required by this section and § 141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in § 141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by § 141.859.	40 CFR 141.854(a)(3)		
For the purpose of determining eligibility for remaining on or qualifying for quarterly monitoring under the provisions of paragraphs (f)(4) and (g)(2), respectively, of this section for transient non-community water systems, the State may elect to not count monitoring violations under § 141.860(c)(1) of this part if the missed sample is collected no later than the end of the monitoring period following the monitoring period in which the sample was missed. The system must collect the make-up sample in a different week than the routine sample for that monitoring period and should collect the sample as soon as possible during the monitoring period. The State may not use this provision under paragraph (h) of this section. This authority does not affect the provisions of §§ 141.860(c)(1) and 141.861(a)(4) of this part.	40 CFR 141.854(a)(4)		
Monitoring frequency for total coliforms. Systems must monitor each calendar quarter that the system provides water to the public, except for seasonal systems or as provided under paragraphs (c) through (h) and (j) of this section. Seasonal systems must meet the monitoring requirements of paragraph (i) of this section.	40 CFR 141.854(b)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Transition to subpart Y.	40 CFR 141.854(c)		
Systems, including seasonal systems, must continue to monitor according to the total coliform monitoring schedules under § 141.21 that were in effect on March 31, 2016, unless any of the conditions for increased monitoring in paragraph (f) of this section are triggered on or after April 1, 2016, or unless otherwise directed by the State.	40 CFR 141.854(c)(1)		
Beginning April 1, 2016, the State must perform a special monitoring evaluation during each sanitary survey to review the status of the system, including the distribution system, to determine whether the system is on an appropriate monitoring schedule. After the State has performed the special monitoring evaluation during each sanitary survey, the State may modify the system's monitoring schedule, as necessary, or it may allow the system to stay on its existing monitoring schedule, consistent with the provisions of this section. The State may not allow systems to begin less frequent monitoring under the special monitoring evaluation unless the system has already met the applicable criteria for less frequent monitoring in this section. For seasonal systems on quarterly or annual monitoring, this evaluation must include review of the approved sample siting plan, which must designate the time period(s) for monitoring based on-site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). The seasonal system must collect compliance samples during these time periods.	40 CFR 141.854(c)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Annual site visits. Beginning no later than calendar year 2017, systems on annual monitoring, including seasonal systems, must have an initial and recurring annual site visit by the State that is equivalent to a Level 2 assessment or an annual voluntary Level 2 assessment that meets the criteria in § 141.859(b) to remain on annual monitoring. The periodic required sanitary survey may be used to meet the requirement for an annual site visit for the year in which the sanitary survey was completed.	40 CFR 141.854(d)		
Criteria for annual monitoring. Beginning April 1, 2016, the State may reduce the monitoring frequency for a well-operated ground water system from quarterly routine monitoring to no less than annual monitoring, if the system demonstrates that it meets the criteria for reduced monitoring in paragraphs (e)(1) through (e)(3) of this section, except for a system that has been on increased monitoring under the provisions of paragraph (f) of this section. A system on increased monitoring under paragraph (f) of this section must meet the provisions of paragraph (g) of this section to go to quarterly monitoring and must meet the provisions of paragraph (h) of this section to go to annual monitoring.	40 CFR 141.854(e)		
The system has a clean compliance history for a minimum of 12 months;	40 CFR 141.854(e)(1)		
The most recent sanitary survey shows that the system is free of sanitary defects or has corrected all identified sanitary defects, has a protected water source, and meets approved construction standards; and	40 CFR 141.854(e)(2)		
The State has conducted an annual site visit within the last 12 months and the system has corrected all identified sanitary defects. The system may substitute a Level 2 assessment that meets the criteria in § 141.859(b) for the State annual site visit.	40 CFR 141.854(e)(3)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Increased Monitoring Requirements for systems on quarterly or annual monitoring. A system on quarterly or annual monitoring that experiences any of the events identified in paragraphs (f)(1) through (f)(4) of this section must begin monthly monitoring the month following the event. A system on annual monitoring that experiences the event identified in paragraphs (f)(5) of this section must begin quarterly monitoring the quarter following the event. The system must continue monthly or quarterly monitoring until the requirements in paragraph (g) of this section for quarterly monitoring or paragraph (h) of this section for annual monitoring are met. A system on monthly monitoring for reasons other than those identified in paragraphs (f)(1) through (f)(4) of this section is not considered to be on increased monitoring for the purposes of paragraphs (g) and (h) of this section.	40 CFR 141.854(f)		
The system triggers a Level 2 assessment or two Level 1 assessments under the provisions of §141.859 in a rolling 12-month period.	40 CFR 141.854(f)(1)		
The system has an *E. coli* MCL violation.	40 CFR 141.854(f)(2)		
The system has a coliform treatment technique violation.	40 CFR 141.854(f)(3)		
The system has two subpart Y monitoring violations or one subpart Y monitoring violation and one Level 1 assessment under the provisions of § 141.859 in a rolling 12-month period for a system on quarterly monitoring.	40 CFR 141.854(f)(4)		
The system has one subpart Y monitoring violation for a system on annual monitoring.	40 CFR 141.854(f)(5)		
Requirements for returning to quarterly monitoring. The State may reduce the monitoring frequency for a system on monthly monitoring triggered under paragraph (f) of this section to quarterly monitoring if the system meets the criteria in paragraphs (g)(1) and (g)(2) of this section.	40 CFR 141.854(g)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Within the last 12 months, the system must have a completed sanitary survey or a site visit by the State or a voluntary Level 2 assessment by a party approved by the State, be free of sanitary defects, and have a protected water source; and	40 CFR 141.854(g)(1)		
The system must have a clean compliance history for a minimum of 12 months.	40 CFR 141.854(g)(2)		
Requirements for systems on increased monitoring to qualify for annual monitoring. The State may reduce the monitoring frequency for a system on increased monitoring under paragraph (f) of this section if the system meets the criteria in paragraph (g) of this section plus the criteria in paragraphs (h)(1) and (h)(2) of this section.	40 CFR 141.854(h)		
An annual site visit by the State and correction of all identified sanitary defects. The system may substitute a voluntary Level 2 assessment by a party approved by the State for the State annual site visit in any given year.	40 CFR 141.854(h)(1)		
The system must have in place or adopt one or more additional enhancements to the water system barriers to contamination in paragraphs (h)(2)(i) through (h)(2)(v) of this section.	40 CFR 141.854(h)(2)		
Cross connection control, as approved by the State.	40 CFR 141.854(h)(2)(i)		
An operator certified by an appropriate State certification program or regular visits by a circuit rider certified by an appropriate State certification program.	40 CFR 141.854(h)(2)(ii)		
Continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the State.	40 CFR 141.854(h)(2)(iii)		
Demonstration of maintenance of at least a 4-log removal or inactivation of viruses as provided for under § 141.403(b)(3).	40 CFR 141.854(h)(2)(iv)		
Other equivalent enhancements to water system barriers as approved by the State.	40 CFR 141.854(h)(2)(v)		
Seasonal systems.	40 CFR 141.854(i)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Beginning April 1, 2016, all seasonal systems must demonstrate completion of a State-approved start-up procedure, which may include a requirement for startup sampling prior to serving water to the public.	40 CFR 141.854(i)(1)		
A seasonal system must monitor every month that it is in operation unless it meets the criteria in paragraphs (i)(2)(i) through (iii) of this section to be eligible for monitoring less frequently than monthly beginning April 1, 2016, except as provided under paragraph (c) of this section.	40 CFR 141.854(i)(2)		
Seasonal systems monitoring less frequently than monthly must have an approved sample siting plan that designates the time period for monitoring based on site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). Seasonal systems must collect compliance samples during this time period.	40 CFR 141.854(i)(2)(i)		
To be eligible for quarterly monitoring, the system must meet the criteria in paragraph (g) of this section.	40 CFR 141.854(i)(2)(ii)		
To be eligible for annual monitoring, the system must meet the criteria under paragraph (h) of this section.	40 CFR 141.854(i)(2)(iii)		
The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating, except that systems that monitor less frequently than monthly must still monitor during the vulnerable period designated by the State.	40 CFR 141.854(i)(3)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Additional routine monitoring the month following a total coliform-positive sample. Systems collecting samples on a quarterly or annual frequency must conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger). Systems must collect at least three routine samples during the next month, except that the State may waive this requirement if the conditions of paragraph (j)(1), (2), or (3) of this section are met. Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Systems must use the results of additional routine samples in coliform treatment technique trigger calculations under § 141.859(a).	40 CFR 141.854(j)		
The State may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the State, or an agent approved by the State, performs a site visit before the end of the next month in which the system provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the State to determine whether additional monitoring and/or any corrective action is needed. The State cannot approve an employee of the system to perform this site visit, even if the employee is an agent approved by the State to perform sanitary surveys.	40 CFR 141.854(j)(1)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
The State may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the State has determined why the sample was total coliform-positive and has established that the system has corrected the problem or will correct the problem before the end of the next month in which the system serves water to the public. In this case, the State must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the State official who recommends such a decision, and make this document available to the EPA and public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the system has taken and/or will take to correct this problem.	40 CFR 141.854(j)(2)		
The State may not waive the requirement to collect three additional routine samples the next month in which the system provides water to the public solely on the grounds that all repeat samples are total coliform-negative. If the State determines that the system has corrected the contamination problem before the system takes the set of repeat samples required in § 141.858, and all repeat samples were total coliform-negative, the State may waive the requirement for additional routine monitoring the next month.	40 CFR 141.854(j)(3)		
40 CFR 141.855 Routine Monitoring Requirements for Community Water Systems serving 1,000 or Fewer People Using Only Ground Water.			
General.	40 CFR 141.855(a)		
The provisions of this section apply to community water systems using only ground water (except ground water under the direct influence of surface water, as defined in § 141.2) and serving 1,000 or fewer people.	40 CFR 141.855(a)(1)		
Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in § 141.858.	40 CFR 141.855(a)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Once all monitoring required by this section and § 141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in § 141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by § 141.859.	40 CFR 141.855(a)(3)		
Monitoring frequency for total coliforms. The monitoring frequency for total coliforms is one sample/month, except as provided for under paragraphs (c) through (f) of this section.	40 CFR 141.855(b)		
Transition to subpart Y.	40 CFR 141.855(c)		
All systems must continue to monitor according to the total coliform monitoring schedules under § 141.21 that were in effect on March 31, 2016, unless any of the conditions in paragraph (e) of this section are triggered on or after April 1, 2016, or unless otherwise directed by the State.	40 CFR 141.855(c)(1)		
Beginning April 1, 2016, the State must perform a special monitoring evaluation during each sanitary survey to review the status of the system, including the distribution system, to determine whether the system is on an appropriate monitoring schedule. After the State has performed the special monitoring evaluation during each sanitary survey, the State may modify the system's monitoring schedule, as necessary, or it may allow the system to stay on its existing monitoring schedule, consistent with the provisions of this section. The State may not allow systems to begin less frequent monitoring under the special monitoring evaluation unless the system has already met the applicable criteria for less frequent monitoring in this section.	40 CFR 141.855(c)(2)		
Criteria for reduced monitoring.	40 CFR 141.855(d)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
The State may reduce the monitoring frequency from monthly monitoring to no less than quarterly monitoring if the system is in compliance with State-certified operator provisions and demonstrates that it meets the criteria in paragraphs (d)(1)(i) through (d)(1)(iii) of this section. A system that loses its certified operator must return to monthly monitoring the month following that loss.	40 CFR 141.855(d)(1)		
The system has a clean compliance history for a minimum of 12 months.	40 CFR 141.855(d)(1)(i)		
The most recent sanitary survey shows the system is free of sanitary defects (or has an approved plan and schedule to correct them and is in compliance with the plan and the schedule), has a protected water source and meets approved construction standards.	40 CFR 141.855(d)(1)(ii)		
The system meets at least one of the following criteria:	40 CFR 141.855(d)(1)(iii)		
An annual site visit by the State that is equivalent to a Level 2 assessment or an annual Level 2 assessment by a party approved by the State and correction of all identified sanitary defects (or an approved plan and schedule to correct them and is in compliance with the plan and schedule).	40 CFR 141.855(d)(1)(iii)(A)		
Cross connection control, as approved by the State.	40 CFR 141.855(d)(1)(iii)(B)		
Continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the State.	40 CFR 141.855(d)(1)(iii)(C)		
Demonstration of maintenance of at least a 4-log removal or inactivation of viruses as provided for under § 141.403(b)(3).	40 CFR 141.855(d)(1)(iii)(D)		
Other equivalent enhancements to water system barriers as approved by the State.	40 CFR 141.855(d)(1)(iii)(E)		
[Reserved]	40 CFR 141.855(d)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Return to routine monthly monitoring requirements. Systems on quarterly monitoring that experience any of the events in paragraphs (e)(1) through (e)(4) of this section must begin monthly monitoring the month following the event. The system must continue monthly monitoring until it meets the reduced monitoring requirements in paragraph (d) of this section.	40 CFR 141.855(e)		
The system triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period.	40 CFR 141.855(e)(1)		
The system has an *E. coli* MCL violation.	40 CFR 141.855(e)(2)		
The system has a coliform treatment technique violation.	40 CFR 141.855(e)(3)		
The system has two subpart Y monitoring violations in a rolling 12-month period.	40 CFR 141.855(e)(4)		
Additional routine monitoring the month following a total coliform-positive sample. Systems collecting samples on a quarterly frequency must conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger). Systems must collect at least three routine samples during the next month, except that the State may waive this requirement if the conditions of paragraph (f)(1), (2), or (3) of this section are met. Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Systems must use the results of additional routine samples in coliform treatment technique trigger calculations.	40 CFR 141.855(f)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
The State may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the State, or an agent approved by the State, performs a site visit before the end of the next month in which the system provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the State to determine whether additional monitoring and/or any corrective action is needed. The State cannot approve an employee of the system to perform this site visit, even if the employee is an agent approved by the State to perform sanitary surveys.	40 CFR 141.855(f)(1)		
The State may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the State has determined why the sample was total coliform-positive and has established that the system has corrected the problem or will correct the problem before the end of the next month in which the system serves water to the public. In this case, the State must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the State official who recommends such a decision, and make this document available to the EPA and the public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the system has taken and/or will take to correct this problem.	40 CFR 141.855(f)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
The State may not waive the requirement to collect three additional routine samples the next month in which the system provides water to the public solely on the grounds that all repeat samples are total coliform-negative. If the State determines that the system has corrected the contamination problem before the system takes the set of repeat samples required in § 141.858, and all repeat samples were total coliform-negative, the State may waive the requirement for additional routine monitoring the next month.	40 CFR 141.855(f)(3)		
40 CFR 141.856 Routine Monitoring Requirements for Subpart H Public Water Systems Serving 1,000 or Fewer People.			
General.	40 CFR 141.856(a)		
The provisions of this section apply to subpart H public water systems of this part serving 1,000 or fewer people.	40 CFR 141.856(a)(1)		
Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in § 141.858.	40 CFR 141.856(a)(2)		
Once all monitoring required by this section and § 141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in § 141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by § 141.859.	40 CFR 141.856(a)(3)		
Seasonal systems.	40 CFR 141.856(a)(4)		
Beginning April 1, 2016, all seasonal systems must demonstrate completion of a State-approved start-up procedure, which may include a requirement for start-up sampling prior to serving water to the public.	40 CFR 141.856(a)(4)(i)		
The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating.	40 CFR 141.856(a)(4)(ii)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Routine monitoring frequency for total coliforms. Subpart H systems of this part (including consecutive systems) must monitor monthly. Systems may not reduce monitoring.	40 CFR 141.856(b)		
Unfiltered subpart H systems. A subpart H system of this part that does not practice filtration in compliance with subparts H, P, T, and W must collect at least one total coliform sample near the first service connection each day the turbidity level of the source water, measured as specified in § 141.74(b)(2), exceeds 1 NTU. When one or more turbidity measurements in any day exceed 1 NTU, the system must collect this coliform sample within 24 hours of the first exceedance, unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 hours of collection and identifies an alternative sample collection schedule. Sample results from this coliform monitoring must be included in determining whether the coliform treatment technique trigger in § 141.859 has been exceeded.	40 CFR 141.856(c)		
40 CFR 141.857 Routine Monitoring Requirements for Public Water Systems Serving More Than 1,000 People.			
General.	40 CFR 141.857(a)		
The provisions of this section apply to public water systems serving more than 1,000 persons.	40 CFR 141.857(a)(1)		
Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in § 141.858.	40 CFR 141.857(a)(2)		
Once all monitoring required by this section and § 141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in § 141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by § 141.859.	40 CFR 141.857(a)(3)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Seasonal systems.	40 CFR 141.857(a)(4)		
Beginning April 1, 2016, all seasonal systems must demonstrate completion of a State-approved start-up procedure, which may include a requirement for start-up sampling prior to serving water to the public.	40 CFR 141.857(a)(4)(i)		
The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating.	40 CFR 141.857(a)(4)(ii)		
Monitoring frequency for total coliforms. The monitoring frequency for total coliforms is based on the population served by the system, as follows:	40 CFR 141.857(b)		

Total Coliform Monitoring Frequency for Public Water Systems Serving More Than 1,000 People

Population served	Minimum number of samples per month	Population served	Minimum number of samples per month
1,001 to 2,500	2	70,001 to 83,000	80
2,501 to 3,300	3	83,001 to 96,000	90
3,301 to 4,100	4	96,001 to 130,000	100
4,101 to 4,900	5	130,001 to 220,000	120
4,901 to 5,800	6	220,001 to 320,000	150
5,801 to 6,700	7	320,001 to 450,000	180
6,701 to 7,600	8	450,001 to 600,000	210
7,601 to 8,500	9	600,001 to 780,000	240
8,501 to 12,900	10	780,001 to 970,000	270
12,901 to 17,200	15	970,001 to 1,230,000	300
17,201 to 21,500	20	1,230,001 to 1,520,000	330
21,501 to 25,000	25	1,520,001 to 1,850,000	360
25,001 to 33,000	30	1,850,001 to 2,270,000	390
33,001 to 41,000	40	2,270,001 to 3,020,000	420

Population served	Minimum number of samples per month	Population served	Minimum number of samples per month
41,001 to 50,000	50	3,020,001 to 3,960,000	450
50,001 to 59,000	60	3,960,001 or more	480
59,001 to 70,000	70		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Unfiltered subpart H systems. A subpart H system of this part that does not practice filtration in compliance with subparts H, P, T, and W must collect at least one total coliform sample near the first service connection each day the turbidity level of the source water, measured as specified in § 141.74(b)(2), exceeds 1 NTU. When one or more turbidity measurements in any day exceed 1 NTU, the system must collect this coliform sample within 24 hours of the first exceedance, unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 hours of collection and identifies an alternative sample collection schedule. Sample results from this coliform monitoring must be included in determining whether the coliform treatment technique trigger in § 141.859 has been exceeded.	40 CFR 141.857(c)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Reduced monitoring. Systems may not reduce monitoring, except for non-community water systems using only ground water (and not ground water under the direct influence of surface water) serving 1,000 or fewer people in some months and more than 1,000 when more than 1,000 persons are served, the systems must monitor at the frequency specified in paragraph **(b)*** of this section. In months when 1,000 or fewer people are served, the State may reduce the monitoring frequency, in writing, to a frequency allowed under § 141.854 for a similarly situated system that always serves 1,000 or fewer people, taking into account the provisions in § 141.854(e) through (g). * 40 CFR 141.857(d) incorrectly references paragraph (a). The correct federal cross reference is (b).	40 CFR 141.857(d)		
40 CFR 141.858 Repeat Monitoring and *E. coli* Requirements.			
Repeat monitoring.	40 CFR 141.858(a)		
If a sample taken under §§ 141.854 **through*** 141.857 is total coliform-positive, the system must collect a set of repeat samples within 24 hours of being notified of the positive result. The system must collect no fewer than three repeat samples for each total coliform-positive sample found. The State may extend the 24-hour limit on a case-by-case basis if the system has a logistical problem in collecting the repeat samples within 24 hours that is beyond its control. Alternatively, the State may implement criteria for the system to use in lieu of case-by-case extensions. In the case of an extension, the State must specify how much time the system has to collect the repeat samples. The State cannot waive the requirement for a system to collect repeat samples in paragraphs (a)(1) through (a)(3) of this section. * 40 CFR 141.858(a)(1) incorrectly says “though” instead of “through.”	40 CFR 141.858(a)(1)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
The system must collect all repeat samples on the same day, except that the State may allow a system with a single service connection to collect the required set of repeat samples over a three-day period or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 ml.	40 CFR 141.858(a)(2)		
The system must collect an additional set of repeat samples in the manner specified in paragraphs (a)(1) through (a)(3) of this section if one or more repeat samples in the current set of repeat samples is total coliform-positive. The system must collect the additional set of repeat samples within 24 hours of being notified of the positive result, unless the State extends the limit as provided in paragraph (a)(1) of this section. The system must continue to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger specified in § 141.859(a) has been exceeded as a result of a repeat sample being total coliform-positive and notifies the State. If a trigger identified in § 141.859 is exceeded as a result of a routine sample being total coliform-positive, systems are required to conduct only one round of repeat monitoring for each total coliform-positive routine sample.	40 CFR 141.858(a)(3)		
After a system collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.	40 CFR 141.858(a)(4)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Results of all routine and repeat samples taken under §§ 141.854 through 141.858 not invalidated by the State must be used to determine whether a coliform treatment technique trigger specified in § 141.859 has been exceeded.	40 CFR 141.858(a)(5)		
Escherichia coli (E. coli) testing.	40 CFR 141.858(b)		
If any routine or repeat sample is total coliform-positive, the system must analyze that total coliform-positive culture medium to determine if *E. coli* are present. If *E. coli* are present, the system must notify the State by the end of the day when the system is notified of the test result, unless the system is notified of the result after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day.	40 CFR 141.858(b)(1)		
The State has the discretion to allow a system, on a case-by-case basis, to forgo *E. coli* testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is *E. coli*-positive. Accordingly, the system must notify the State as specified in paragraph (b)(1) of this section and the provisions of § 141.63(c) apply.	40 CFR 141.858(b)(2)		
40 CFR 141.859 Coliform Treatment Technique Triggers and Assessment Requirements for Protection Against Potential Fecal Contamination.			
Treatment technique triggers. Systems must conduct assessments in accordance with paragraph (b) of this section after exceeding treatment technique triggers in paragraphs (a)(1) and (a)(2) of this section.	40 CFR 141.859(a)		
Level 1 treatment technique triggers.	40 CFR 141.859(a)(1)		
For systems taking 40 or more samples per month, the system exceeds 5.0% total coliform-positive samples for the month.	40 CFR 141.859(a)(1)(i)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
For systems taking fewer than 40 samples per month, the system has two or more total coliform-positive samples in the same month.	40 CFR 141.859(a)(1)(ii)		
The system fails to take every required repeat sample after any single total coliform-positive sample.	40 CFR 141.859(a)(1)(iii)		
Level 2 treatment technique triggers.	40 CFR 141.859(a)(2)		
An *E. coli* MCL violation, as specified in § 141.860(a).	40 CFR 141.859(a)(2)(i)		
A second Level 1 trigger as defined in paragraph (a)(1) of this section, within a rolling 12-month period, unless the State has determined a likely reason that the samples that caused the first Level 1 treatment technique trigger were total coliform-positive and has established that the system has corrected the problem.	40 CFR 141.859(a)(2)(ii)		
For systems with approved annual monitoring, a Level 1 trigger in two consecutive years.	40 CFR 141.859(a)(2)(iii)		
Requirements for assessments.	40 CFR 141.859(b)		
Systems must ensure that Level 1 and 2 assessments are conducted in order to identify the possible presence of sanitary defects and defects in distribution system coliform monitoring practices. Level 2 assessments must be conducted by parties approved by the State.	40 CFR 141.859(b)(1)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
When conducting assessments, systems must ensure that the assessor evaluates minimum elements that include review and identification of inadequacies in sample sites; sampling protocol; sample processing; atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., small ground water systems); and existing water quality monitoring data. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system.	40 CFR 141.859(b)(2)		
Level 1 Assessments. A system must conduct a Level 1 assessment consistent with State requirements if the system exceeds one of the treatment technique triggers in paragraph (a)(1) of this section.	40 CFR 141.859(b)(3)		
The system must complete a Level 1 assessment as soon as practical after any trigger in paragraph (a)(1) of this section. In the completed assessment form, the system must describe sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed. The assessment form may also note that no sanitary defects were identified. The system must submit the completed Level 1 assessment form to the State within 30 days after the system learns that it has exceeded a trigger.	40 CFR 141.859(b)(3)(i)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
If the State reviews the completed Level 1 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the State must consult with the system. If the State requires revisions after consultation, the system must submit a revised assessment form to the State on an agreed-upon schedule not to exceed 30 days from the date of the consultation.	40 CFR 141.859(b)(3)(ii)		
Upon completion and submission of the assessment form by the system, the State must determine if the system has identified a likely cause for the Level 1 trigger and, if so, establish that the system has corrected the problem, or has included a schedule acceptable to the State for correcting the problem.	40 CFR 141.859(b)(3)(iii)		
Level 2 Assessments. A system must ensure that a Level 2 assessment consistent with State requirements is conducted if the system exceeds one of the treatment technique triggers in paragraph (a)(2) of this section. The system must comply with any expedited actions or additional actions required by the State in the case of an *E. coli* MCL violation.	40 CFR 141.859(b)(4)		
The system must ensure that a Level 2 assessment is completed by the State or by a party approved by the State as soon as practical after any trigger in paragraph (a)(2) of this section. The system must submit a completed Level 2 assessment form to the State within 30 days after the system learns that it has exceeded a trigger. The assessment form must describe sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed. The assessment form may also note that no sanitary defects were identified.	40 CFR 141.859(b)(4)(i)		
The system may conduct Level 2 assessments if the system has staff or management with the certification or qualifications specified by the State unless otherwise directed by the State.	40 CFR 141.859(b)(4)(ii)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
If the State reviews the completed Level 2 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the State must consult with the system. If the State requires revisions after consultation, the system must submit a revised assessment form to the State on an agreed-upon schedule not to exceed 30 days.	40 CFR 141.859(b)(4)(iii)		
Upon completion and submission of the assessment form by the system, the State must determine if the system has identified a likely cause for the Level 2 trigger and determine whether the system has corrected the problem, or has included a schedule acceptable to the State for correcting the problem.	40 CFR 141.859(b)(4)(iv)		
Corrective Action. Systems must correct sanitary defects found through either Level 1 or 2 assessments conducted under paragraph (b) of this section. For corrections not completed by the time of submission of the assessment form, the system must complete the corrective action(s) in compliance with a timetable approved by the State in consultation with the system. The system must notify the State when each scheduled corrective action is completed.	40 CFR 141.859(c)		
Consultation. At any time during the assessment or corrective action phase, either the water system or the State may request a consultation with the other party to determine the appropriate actions to be taken. The system may consult with the State on all relevant information that may impact on its ability to comply with a requirement of this subpart, including the method of accomplishment, an appropriate timeframe, and other relevant information.	40 CFR 141.859(d)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
40 CFR 141.860 Violations.			
E. coli MCL Violation. A system is in violation of the MCL for *E. coli* when any of the conditions identified in paragraphs (a)(1) through (a)(4) of this section occur.	40 CFR 141.860(a)		
The system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample.	40 CFR 141.860(a)(1)		
The system has a total coliform-positive repeat sample following an *E. coli*-positive routine sample.	40 CFR 141.860(a)(2)		
The system fails to take all required repeat samples following an *E. coli*-positive routine sample.	40 CFR 141.860(a)(3)		
The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.	40 CFR 141.860(a)(4)		
Treatment technique violation.	40 CFR 141.860(b)		
A treatment technique violation occurs when a system exceeds a treatment technique trigger specified in § 141.859(a) and then fails to conduct the required assessment or corrective actions within the timeframe specified in § 141.859(b) and (c).	40 CFR 141.860(b)(1)		
A treatment technique violation occurs when a seasonal system fails to complete a State-approved start-up procedure prior to serving water to the public.	40 CFR 141.860(b)(2)		
Monitoring violations.	40 CFR 141.860(c)		
Failure to take every required routine or additional routine sample in a compliance period is a monitoring violation.	40 CFR 141.860(c)(1)		
Failure to analyze for *E. coli* following a total coliform-positive routine sample is a monitoring violation.	40 CFR 141.860(c)(2)		
Reporting violations.	40 CFR 141.860(d)		
Failure to submit a monitoring report or completed assessment form after a system properly conducts monitoring or assessment in a timely manner is a reporting violation.	40 CFR 141.860(d)(1)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
Failure to notify the State following an *E. coli*-positive sample as required by § 141.858(b)(1) in a timely manner is a reporting violation.	40 CFR 141.860(d)(2)		
Failure to submit certification of completion of State-approved start-up procedure by a seasonal system is a reporting violation.	40 CFR 141.860(d)(3)		
40 CFR 141.861 Reporting and Recordkeeping.			
Reporting.	40 CFR 141.861(a)		
E. coli.	40 CFR 141.861(a)(1)		
A system must notify the State by the end of the day when the system learns of an *E. coli* MCL violation, unless the system learns of the violation after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day, and notify the public in accordance with subpart Q of this part.	40 CFR 141.861(a)(1)(i)		
A system must notify the State by the end of the day when the system is notified of an *E. coli*-positive routine sample, unless the system is notified of the result after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day.	40 CFR 141.861(a)(1)(ii)		
A system that has violated the treatment technique for coliforms in § 141.859 must report the violation to the State no later than the end of the next business day after it learns of the violation, and notify the public in accordance with subpart Q of this part.	40 CFR 141.861(a)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	STATE CITATION (DOCUMENT TITLE, PAGE NUMBER, SECTION/PARAGRAPH)	DIFFERENT FROM FED. REQUIREMENT? (EXPLAIN ON SEPARATE SHEET)
A system required to conduct an assessment under the provisions of § 141.859 of this part must submit the assessment report within 30 days. The system must notify the State in accordance with § 141.859(c) when each scheduled corrective action is completed for corrections not completed by the time of submission of the assessment form.	40 CFR 141.861(a)(3)		
A system that has failed to comply with a coliform monitoring requirement must report the monitoring violation to the State within 10 days after the system discovers the violation, and notify the public in accordance with subpart Q of this part.	40 CFR 141.861(a)(4)		
A seasonal system must certify, prior to serving water to the public, that it has complied with the State-approved start-up procedure.	40 CFR 141.861(a)(5)		
Recordkeeping.	40 CFR 141.861(b)		
The system must maintain any assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of those assessments, or other available summary documentation of the sanitary defects and corrective actions taken under § 141.859 for State review. This record must be maintained by the system for a period not less than five years after completion of the assessment or corrective action.	40 CFR 141.861(b)(1)		
The system must maintain a record of any repeat sample taken that meets State criteria for an extension of the 24-hour period for collecting repeat samples as provided for under § 141.858(a)(1) of this part.	40 CFR 141.861(b)(2)		

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
Part 142--National Primary Drinking Water Regulations Implementation		
Subpart B – Primary Enforcement Responsibility		
40 CFR 142.14 Records Kept by States.		
The analytical results, set forth in a form that makes possible comparison with the limits specified in §§ 141.63, 141.71, and 141.72 of this chapter and with the limits specified in subpart Y of this chapter.	40 CFR 142.14(a)(1)(iii)	
Records of each of the following decisions made pursuant to the provisions of subpart Y of part 141 must be made in writing and retained by the State.	40 CFR 142.14(a)(10)	
Records of the following decisions or activities must be retained for five years.	40 CFR 142.14(a)(10)(i)	
Sections 141.858(a), 141.853(c)(2), 141.856(c), and 141.857(c) of this chapter—Any case-by-case decision to waive the 24-hour time limit for collecting repeat samples after a total coliform-positive routine sample, or to extend the 24-hour limit for collection of samples following invalidation, or for an unfiltered subpart H system of this part to collect a total coliform sample following a turbidity measurement exceeding 1 NTU.	40 CFR 142.14(a)(10)(i)(A)	
Sections 141.854(j) and 141.855(f) of this chapter—Any decision to allow a system to waive the requirement for three routine samples the month following a total coliform-positive sample. The record of the waiver decision must contain all the items listed in those sections.	40 CFR 142.14(a)(10)(i)(B)	
Section 141.853(c) of this chapter—Any decision to invalidate a total coliform-positive sample. If the decision to invalidate a total coliform-positive sample as provided in § 141.853(c)(1) of this chapter is made, the record of the decision must contain all the items listed in that section.	40 CFR 142.14(a)(10)(i)(C)	
Section 141.859 of this chapter—Completed and approved subpart Y assessments, including reports from the system that corrective action has been completed as required by § 141.861(a)(2) of this chapter.	40 CFR 142.14(a)(10)(i)(D)	
Records of each of the following decisions must be retained in such a manner so that each system's current status may be determined:	40 CFR 142.14(a)(10)(ii)	
Section 141.854(e) of this chapter—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving 1,000 or fewer people to less than once per quarter, as provided in § 141.854(e) of this chapter, including what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.	40 CFR 142.14(a)(10)(ii)(A)	

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
Section 141.855(d) of this chapter—Any decision to reduce the total coliform monitoring frequency for a community water system serving 1,000 or fewer people to less than once per month, as provided in § 141.855(d) of this chapter, including what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.	40 CFR 142.14(a)(10)(ii)(B)	
Section 141.857(d) of this chapter—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving more than 1,000 persons during any month the system serves 1,000 or fewer people, as provided in § 141.857(d) of this chapter. A copy of the reduced monitoring frequency must be provided to the system.	40 CFR 142.14(a)(10)(ii)(C)	
Section 141.858(b)(2) of this chapter—Any decision to allow a system to forgo *E. coli* testing of a total coliform-positive sample if that system assumes that the total coliform-positive sample is *E. coli*-positive.	40 CFR 142.14(a)(10)(ii)(D)	
40 CFR 142.15 Reports by States.		
Total coliforms under subpart Y. A list of systems that the State is allowing to monitor less frequently than once per month for community water systems or less frequently than once per quarter for non-community water systems as provided in §§ 141.855 and 141.854 of this chapter, including the applicable date of the reduced monitoring requirement for each system.	40 CFR 142.15(c)(3)	
40 CFR 142.16 Special Primacy Requirements.		
Requirements for States to adopt 40 CFR part 141 subpart Y – Revised Total Coliform Rule. In addition to the general primacy requirements elsewhere in this part, including the requirements that State regulations be at least as stringent as federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart Y, must contain the information specified in this paragraph (q).	40 CFR 142.16(q)	
In their application to EPA for approval to implement the federal requirements, the primacy application must indicate what baseline and reduced monitoring provisions of 40 CFR part 141, subpart Y the State will adopt and must describe how they will implement 40 CFR part 141, subpart Y in these areas so that EPA can be assured that implementation plans meet the minimum requirements of the rule.	40 CFR 142.16(q)(1)	
The State's application for primacy for subpart Y must include a written description for each provision included in paragraphs (q)(2)(i) through (ix) of this section.	40 CFR 142.16(q)(2)	

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
Sample Siting Plans—The frequency and process used to review and revise sample siting plans in accordance with 40 CFR part 141, subpart Y to determine adequacy.	40 CFR 142.16(q)(2)(i)	
Reduced Monitoring Criteria—An indication of whether the State will adopt the reduced monitoring provisions of 40 CFR part 141, subpart Y. If the State adopts the reduced monitoring provisions, it must describe the specific types or categories of water systems that will be covered by reduced monitoring and whether the State will use all or a reduced set of the criteria specified in §§ 141.854(h)(2) and 141.855(d)(1)(iii) of this chapter. For each of the reduced monitoring criterion, the State must describe how the criteria will be evaluated to determine when systems qualify.	40 CFR 142.16(q)(2)(ii)	
Assessments and Corrective Actions—The process for implementing the new assessment and corrective action phase of the rule, including the elements in paragraphs (q)(2)(iii)(A) through (D) of this section.	40 CFR 142.16(q)(2)(iii)	
Elements of Level 1 and Level 2 assessments. This must include an explanation of how the State will ensure that Level 2 assessments provide a more detailed examination of the system (including the system's monitoring and operational practices) than do Level 1 assessments through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices.	40 CFR 142.16(q)(2)(iii)(A)	
Examples of sanitary defects.	40 CFR 142.16(q)(2)(iii)(B)	
Examples of assessment forms or formats.	40 CFR 142.16(q)(2)(iii)(C)	
Methods that systems may use to consult with the State on appropriate corrective actions.	40 CFR 142.16(q)(2)(iii)(D)	
Invalidation of routine and repeat samples collected under 40 CFR part 141, subpart Y—The criteria and process for invalidating total coliform and *E. coli*-positive samples under 40 CFR part 141, subpart Y. This description must include criteria to determine if a sample was improperly processed by the laboratory, reflects a domestic or other non-distribution system plumbing problem or reflects circumstances or conditions that do not reflect water quality in the distribution system.	40 CFR 142.16(q)(2)(iv)	
Approval of individuals allowed to conduct Level 2 assessments under 40 CFR part 141, subpart Y—The criteria and process for approval of individuals allowed to conduct Level 2 assessments under 40 CFR part 141, subpart Y.	40 CFR 142.16(q)(2)(v)	
Special monitoring evaluation—The procedure for performing special monitoring evaluations during sanitary surveys for ground water systems serving 1,000 or fewer people to determine whether systems are on an appropriate monitoring schedule.	40 CFR 142.16(q)(2)(vi)	

SUMMARY OF FEDERAL REQUIREMENT	FEDERAL CITATION	EXPLANATION OF STATE POLICIES AND PROCEDURES
Seasonal systems—How the State will identify seasonal systems, how the State will determine when systems on less than monthly monitoring must monitor, and what start-up provisions seasonal system must meet under 40 CFR part 141, subpart Y.	40 CFR 142.16(q)(2)(vii)	
Additional criteria for reduced monitoring—How the State will require systems on reduced monitoring to demonstrate:	40 CFR 142.16(q)(2)(viii)	
Continuous disinfection entering the distribution system and a residual in the distribution system.	40 CFR 142.16(q)(2)(viii)(A)	
Cross connection control.	40 CFR 142.16(q)(2)(viii)(B)	
Other enhancements to water system barriers.	40 CFR 142.16(q)(2)(viii)(C)	
Criteria for extending the 24-hour period for collecting repeat samples.—Under §§ 141.858(a) and 141.853(c)(2) of this chapter, criteria for systems to use in lieu of case-by-case decisions to waive the 24-hour time limit for collecting repeat samples after a total coliform-positive routine sample, or to extend the 24-hour limit for collection of samples following invalidation. If the State elects to use only case-by-case waivers, the State does not need to develop and submit criteria.	40 CFR 142.16(q)(2)(ix)	
Subpart G – Identification of Best Technology, Treatment Techniques or Other Means Generally Available		
40 CFR 142.63 Variances and Exemptions from the Maximum Contaminant Level for Total Coliforms.		
EPA has stayed this section as it relates to the total coliform MCL of § 141.63(a) of this chapter for systems that demonstrate to the State that the violation of the total coliform MCL is due to a persistent growth of total coliforms in the distribution system rather than fecal or pathogenic contamination, a treatment lapse or deficiency, or a problem in the operation or maintenance of the distribution system. This stay is applicable until March 31, 2016, at which time the total coliform MCL is no longer applicable.	40 CFR 142.63(b)	

Appendix B

Flowcharts

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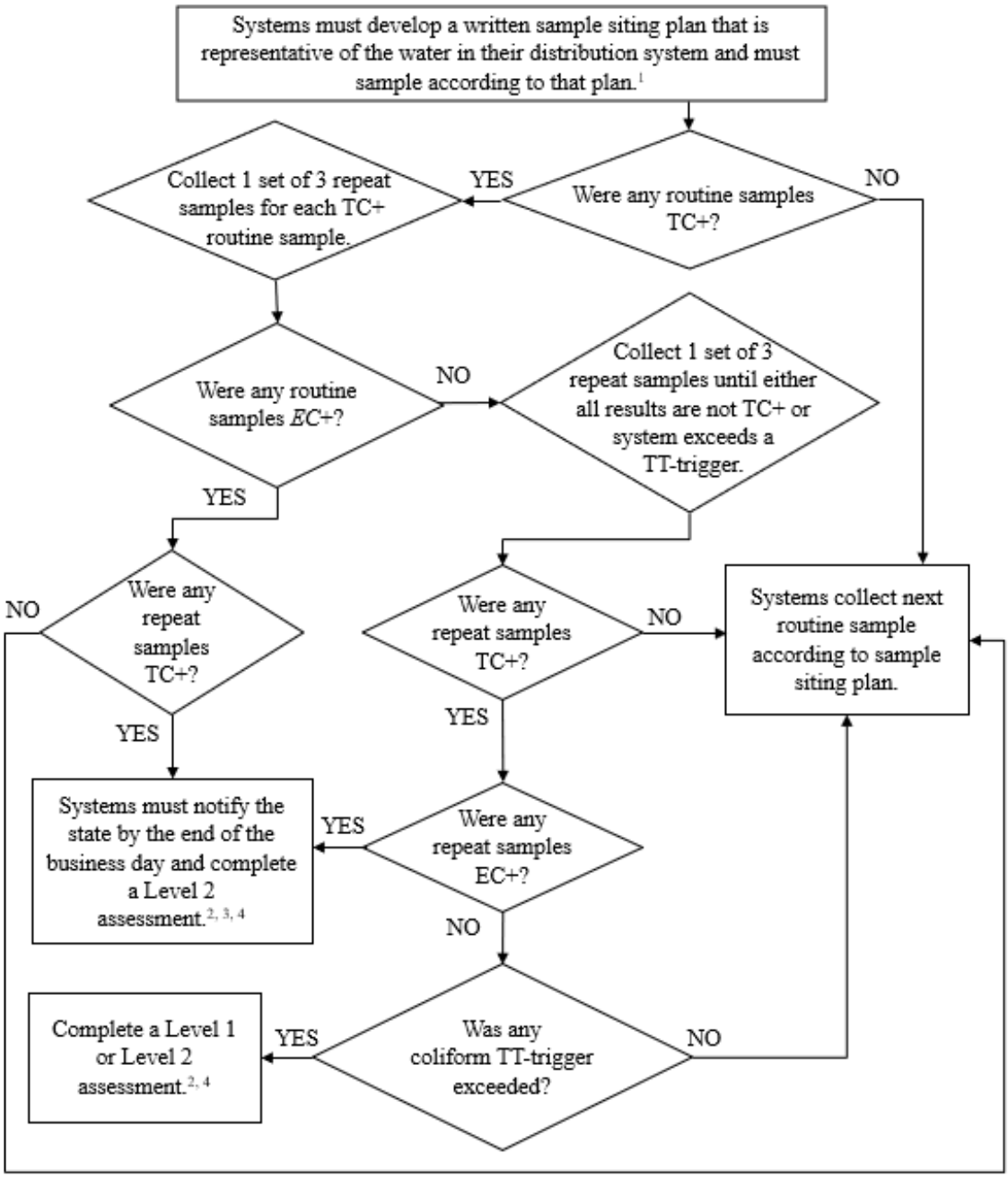
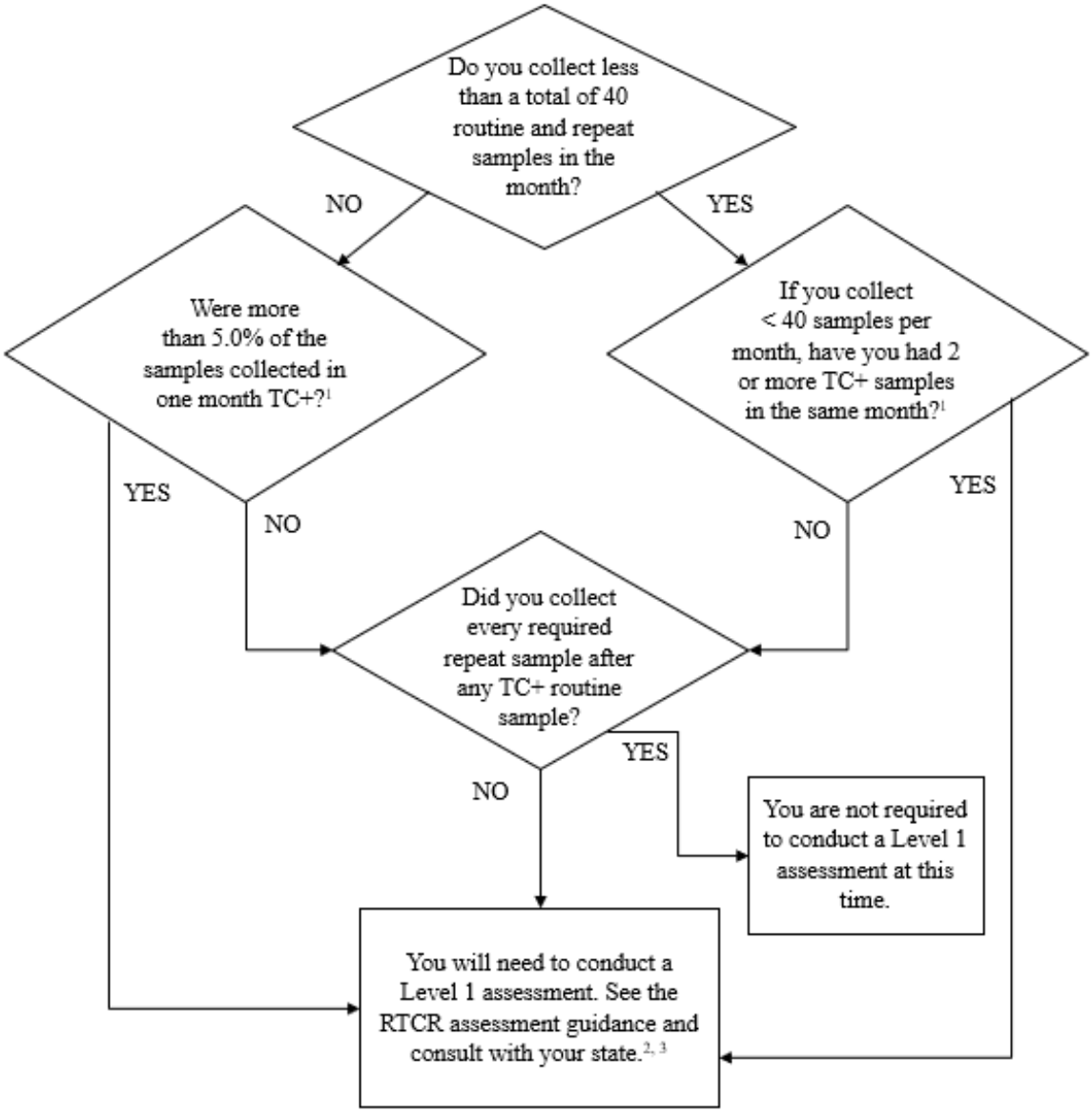
Figure B-1. RTCR Requirements



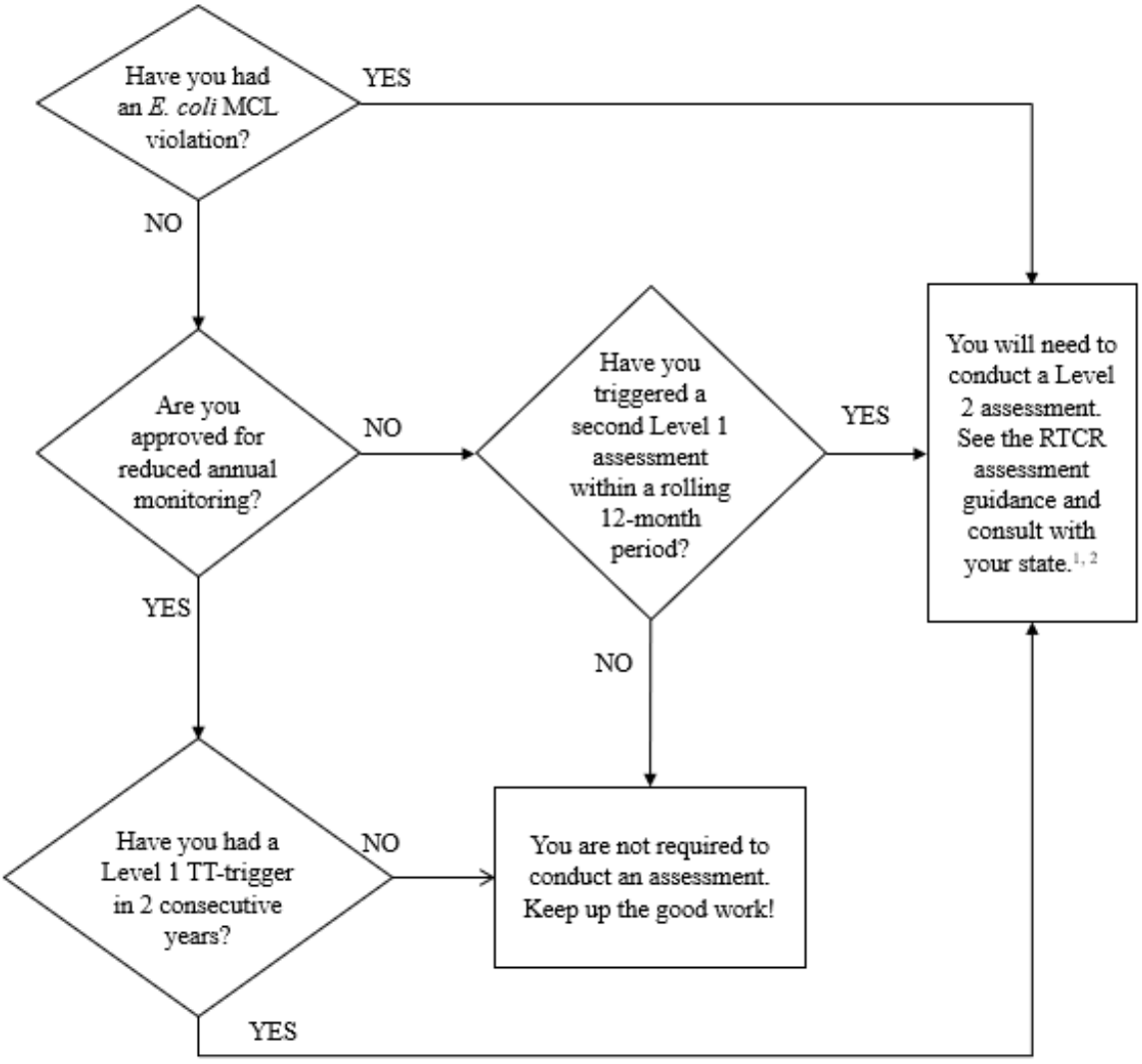
1. The RTCR allowed existing PWSs to use their plan approved under the TCR. New PWSs will need to develop a plan, however. The number of routine samples that a PWS must take per month is based on the population served by that PWS.
2. The type of assessment required is based on the trigger that is exceeded. For a list of triggers and which type of assessment they require, see the Assessments Triggers flowcharts (Figures B-2 and B-3). Note that total coliform triggers differ for PWSs taking 40 or more samples (including routine and repeat samples) per month and PWSs taking less than 40 samples per month.
3. The PWS has incurred an *E. coli* MCL violation.
4. Failure to perform assessments or corrective action is a TT violation.

Figure B-2. RTCR Requirements: Level 1 Assessment Triggers



1. Compliance is determined based on the monitoring/compliance month. Repeat samples can occur in the following month.
2. Failure to perform assessments or corrective action is a TT violation.
3. If it is the PWS's second Level 1 assessment within a rolling 12-month period, the PWS will most likely have to conduct a Level 2 assessment.

Figure B-3. RTCR Requirements: Level 2 Assessment Triggers



1. You will not need to conduct a Level 2 assessment if the state has determined a likely reason for the TC+ samples that caused the first Level 1 assessment TT-trigger and has established that the PWS has corrected the problem.
2. Failure to perform assessments or corrective action is a TT violation.

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Appendix C

Example Forms and Letters, Checklists and Tables

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Table C-1. State Primacy Revision Checklist

CFR Citation	Required Program Elements	Revision to State Program under the RTCR YES/NO	EPA Findings/ Comments
40 CFR 142.10	Primary Enforcement Definition of Public Water System [1]		
40 CFR 142.10(a)	Regulations No Less Stringent		
40 CFR 142.10(b)(1)	Maintain Inventory		
40 CFR 142.10(b)(2)	Sanitary Survey Program		
40 CFR 142.10(b)(3)	Laboratory Certification Program		
40 CFR 142.10(b)(4)	Laboratory Capability		
40 CFR 142.10(b)(5)	Plan Review Program		
40 CFR 142.10(b)(6)(i)	Authority To Apply Regulations		
40 CFR 142.10(b)(6)(ii)	Authority To Sue In Courts Of Competent Jurisdiction		
40 CFR 142.10(b)(6)(iii)	Right of Entry		
40 CFR 142.10(b)(6)(iv)	Authority To Require Records		
40 CFR 142.10(b)(6)(v)	Authority To Require PN		
40 CFR 142.10(b)(6)(vi)	Authority To Assess Civil And Criminal Penalties		
40 CFR 142.10(b)(6)(vii)	Authority to require CWSs to provide CCRs		
40 CFR 142.10(c)	Maintenance of Records		
40 CFR 142.10(d)	Variance/Exemption Conditions (if applicable) [2]		
40 CFR 142.10(e)	Emergency Plans		
40 CFR 142.10(f)	Administrative Penalty Authority [1]		
40 CFR 142.10(g)	Electronic Reporting Regulations [3]		

1. Requirement from the 1996 SDWA Amendments. Regulations published in the April 28, 1998 *Federal Register*.
2. Regulations published in the August 14, 1998 *Federal Register*.
3. Regulations published in the October 13, 2005 *Federal Register*.

Table C-2. State Primacy Revision Extension Checklist

CFR Reference	Elements	EPA Findings/ Comments
40 CFR 142.12(b)(1)	State provides a final extension request before the deadline February 13, 2015.	
40 CFR 142.12(b)(2)	State demonstrates good faith effort to meet original deadline.	
40 CFR 142.12(b)(2)	State requests an extension due to reasons beyond its control.	
40 CFR 142.12(b)(2)	State's application for extension includes a schedule with a timeframe for the submission of a final request for state program revision. [1]	
40 CFR 142.12(b)(2)	State's application for extension includes sufficient information to demonstrate at least one of the following:	
40 CFR 142.12(b)(2)(i)(A)	State lacks legislative/regulatory authority to enforce the rule; or	
40 CFR 142.12(b)(2)(i)(B)	State lacks the program capability adequate to implement the rule; or,	
40 CFR 142.12(b)(2)(i)(C)	State requests the extension to group two or more program revisions in a single legislative/regulatory action.	
40 CFR 142.12(b)(2) 40 CFR 142.12(b)(3)(vi)	State's application for extension contains steps and includes a schedule, during the extension period, agreed to by EPA and the state, to remedy the deficiencies related to the state's lack of program capability to adequately implement the rule.	
40 CFR 142.12(b)(2)(ii)	State's application for extension includes sufficient information to demonstrate state is implementing the EPA requirements pursuant to 40 CFR 142.12(b)(3) within the scope of its authority and capabilities. (Use Appendix F for Recommended Workload Activities.)	
40 CFR 142.12(b)(2)(ii) 40 CFR 142.12(b)(3)(vi)	State demonstrates implementation of the steps to remedy the deficiencies related to the state's lack of program capability to adequately implement the rule.	
40 CFR 142.12(b)(2)(ii)	State demonstrates implementation of the RTCR pursuant to 40 CFR 142.12(b)(3) within the scope of its authority and capabilities. (Appendix F is provided to outline EPA/state responsibilities.)	

1. While the state may request an extension of up to two years to submit the final request for program revision, the EPA Region has the discretion to approve the extension period based on a lesser timeframe to allow re-evaluation of state's progress in meeting the required activities to address program/statutory deficiencies which prevented the primacy agency from obtaining primacy before April 1, 2016. When the EPA Region grants an approval for a shorter extension period (i.e., less than the full two years), the EPA Region and state can re-evaluate the state's ability to obtain full primacy of the RTCR and add any additional remedies required to be taken by the state as a condition of the EPA Region granting a full two-year extension period.

Example C-1. Completion of Start-up Procedures - EXAMPLE Certification Letter

Complete and return to:
Attn: Drinking Water Division
State Drinking Water Agency MC: 6WQ-SD
1445 Green Avenue
Anycity, XX 00024-1234

Public Water Supply (PWS) Information

PWS Name: _____ PWSID: _____

Street Address: _____

City: _____

State: _____ Zip: _____

PWS Contact Person

Name: _____ Title: _____

Phone #: _____

Fax #: _____

Email: _____

To help reduce risk of coliform or E. coli bacteria in water being delivered to customers, each start-up procedure listed below was completed:

☐ Flushed all pipes until water is clear

☐ Cleaned all tanks, if any are present

☐ Disinfected entire water system

☐ Collected samples to test for bacteria and to test for disinfectant residual

☐ Inspected and repaired water system for defects

Certification

I hereby certify that each start-up procedure listed above was completed before water was delivered to my customers. I submit documentation of the start-up procedure samples results for coliform bacteria and disinfectant residual.

Signature: _____ Date: _____

Example C-2. Example Extension Agreement Letter

{Date}

{Regional Administrator}
Regional Administrator
U.S. EPA Region **{Region}**
{Street Address}
{City, State, Zip}

RE: Request/approval for an Extension Agreement

Dear **{Regional Administrator}**:

The State of **{State}** is requesting an extension to the date that final primacy revisions are due to EPA for the Revised Total Coliform Rule (RTCR) until **{insert date - no later than February 13, 2017}**, as allowed by 40 CFR 142.12, and would appreciate your approval. Staff of the **{State Department/Agency}** have conferred with your staff and have agreed to the requirements listed below for this extension. This extension is being requested because the State of **{State}**:

□ Is planning to group two or more program revisions into a single legislative or regulatory action.
□ Currently lacks the legislative or regulatory authority to enforce the new or revised requirements.
□ Currently lacks adequate program capability to implement the new or revised requirements.

{State Department/Agency} will be working with EPA to implement the RTCR within the scope of its current authority and capability, as outlined in the areas identified in 40 CFR 142.12(b)(3)(i) - (vi):

i) Informing public water systems (PWSs) of the new EPA (and upcoming state) requirements and the fact that EPA will be overseeing implementation of the requirements until EPA approves the state revision.

State	EPA	
_____	_____	Provide copies of regulation and guidance to other state agencies, PWSs technical assistance providers, associations, or other interested parties.
_____	_____	Educate and coordinate with state staff, PWSs, the public and other water associations about the requirements of this regulation.
_____	_____	Notify affected systems of their requirements under the RTCR.
_____	_____	Other:

ii) Collecting, storing and managing laboratory results, public notices and other compliance and operation data required by EPA regulations.

State	EPA	
_____	_____	Devise a tracking system for PWS reporting pursuant to the RTCR.
_____	_____	Keep PWSs informed of reporting requirements during development and implementation.

_____	_____	Report RTCR violation and enforcement information to Safe Drinking Water Information System (SDWIS) as required.
_____	_____	Other:

iii) Assisting EPA in the development of the technical aspects of the enforcement actions and conducting informal follow-up on violations (telephones calls, letters, etc.).

State	EPA	
_____	_____	Issue notices of violations (NOVs) for treatment technique, maximum contaminant level (MCL), and monitoring/reporting violations of the RTCR.
_____	_____	Provide immediate technical assistance to PWSs with treatment technique, MCL and/or monitoring/reporting violations to try and bring them into compliance.
_____	_____	Refer all violations to EPA for enforcement if they have not been resolved within 60 days of the incident that triggered the violation. Provide information as requested to conduct and complete any enforcement action referred to EPA.
_____	_____	Other:

iv) Providing technical assistance to PWSs.

State	EPA	
_____	_____	Conduct training within the state for PWSs on RTCR rule requirements.
_____	_____	Provide technical assistance through written and/or verbal correspondence with PWSs.
_____	_____	Provide on-site technical assistance to PWSs as requested and needed to ensure compliance with the regulation.
_____	_____	Coordinate with other technical assistance providers and organizations to provide accurate information and aid in a timely manner.
_____	_____	Other:

v) Providing EPA with all information prescribed by the State Reporting Requirements in 40 CFR 142.15.

State	EPA	
_____	_____	Report any violations incurred by PWSs for this regulation each quarter.
_____	_____	Report any enforcement actions taken against PWSs for this regulation this quarter.
_____	_____	Report a list of systems that the state is allowing to monitor less frequently than once per month for CWSs or less

frequently than once per quarter for NCWSs including the applicable date of the reduced monitoring requirement for each system.

_____ _____ Other:

vi) For states whose request for an extension is based on a current lack of program capability to implement the new or revised requirements, taking the following steps to remedy the capability deficiency.

State EPA

_____ _____ Acquire additional resources to implement these regulations (list of specific steps being taken attached a {**List A}**).

_____ _____ Provide quarterly updates describing the status of acquiring additional resources.

_____ _____ Other:

In addition, please see attached Revised Total Coliform Rule Workload/Work Share Responsibilities Checklist for a full list of all RTCR implementation activities.

I affirm that the **{State Department/Agency}** will implement provisions of the RTCR as outlined in this letter and in the associated enclosures.

_____

{Agency Director or Secretary} {**Date}**

_____

{Name of State Agency}

I have consulted with my staff and approve your extension for the aforementioned regulation. I affirm that EPA Region **{Region}** will implement provisions of the RTCR as outlined in this letter and in the associated enclosures.

_____

Regional Administrator {**Date}**
EPA Region **{Region}**

This Extension Agreement will take effect upon the date of the last signature and will remain in effect until **{Insert date for which the extension agreement is approved}**.

Enclosure(s): **{Include Revised Total Coliform Rule Workload/Work Share Responsibilities Checklist}**

Example C-3. Example Attorney General's Statement

Model Language

I hereby certify, pursuant to my authority as (1) and in accordance with the Safe Drinking Water Act, as amended, and (2), that in my opinion the laws of the [State/Commonwealth of (3)] [or tribal ordinances of (4)] to carry out the program set forth in the "Program Description" submitted by the (5) have been duly adopted and are enforceable. The specific authorities provided are contained in statutes or regulations that are lawfully adopted at the time this Statement is approved and signed and will be fully effective by the time the program is approved.

I. For States with No Audit Privilege and/or Immunity Laws

Furthermore, I certify that [State/Commonwealth of (3)] has not enacted any environmental audit privilege and/or immunity laws.

II. For States with Audit Privilege and/or Immunity Laws that do Not Apply to the State Agency Administering the Safe Drinking Water Act

Furthermore, I certify that the environmental [audit privilege and/or immunity laws] of the [State/Commonwealth of (3)] do not affect the ability of (3) to meet enforcement and information gathering requirements under the Safe Drinking Water Act because the [audit privilege and/or immunity laws] do not apply to the program set forth in the "Program Description." The Safe Drinking Water Act program set forth in the "Program Description" is administered by (5); the [audit privilege and/or immunity laws] do not affect programs implemented by (5), thus the program set forth in the "Program Description" is unaffected by the provisions of [State/Commonwealth of (3)] [audit privilege and/or immunity laws].

III. For States with Audit Privilege and/or Immunity Laws that Worked with EPA to Satisfy Requirements for Federally Authorized, Delegated or Approved Environmental Programs

Furthermore, I certify that the environmental [audit privilege and/or immunity laws] of the [State/Commonwealth of (3)] do not affect the ability of (3) to meet enforcement and information gathering requirements under the Safe Drinking Water Act because [State/Commonwealth of (3)] has enacted statutory revisions and/or issued a clarifying Attorney General's Statement to satisfy requirements for federally authorized, delegated or approved environmental programs.

Seal of Office

_____
Signature

_____
Name and Title

_____
Date

(1) State Attorney General or attorney for the primacy agency if it has independent legal counsel.
(2) 40 CFR 142.11(a)(6)(i) for initial primacy applications or 40 CFR 142.12(c)(1)(iii) for primacy program revision applications.
(3) Name of state or commonwealth.
(4) Name of tribe.
(5) Name of primacy agency.

Example C-4. Example RTCR Notification Letter

State Letterhead

John Smith, Supt.
Town Water System, PWSID XXXXXXX
Town, ST 12345
RE: Revised Total Coliform Rule

Dear Mr. Smith:

This letter is to notify you that your public water system (PWS) will be affected by the Revised Total Coliform Rule (RTCR). The RTCR applies to all PWSs and its requirements will take effect April 1, 2016.

Our records show that your PWS is a community water system (CWS) that uses ground water as its source. Our records also show that your PWS serves 1,750 people. Please let us know if this information is not accurate and we will update our records.

Based on these characteristics, the RTCR will affect your system in the following ways (some of these requirements are the same as they were under the Total Coliform Rule (TCR)):

- You must have available for review an up-to-date coliform sample siting plan by April 1, 2016.
- You must collect two routine total coliform samples a month, according to that sample siting plan.
- If one of your routine monthly coliform samples tests positive for total coliform bacteria (i.e., TC+ sample), then at least three repeat samples must be collected within 24 hours of being notified of that TC+ result. If both of your routine monthly samples test positive for total coliform bacteria, then at least three repeat samples need to be collected for each positive routine sample (i.e., at least six repeat samples would be collected).
- If any routine or repeat total coliform sample is TC+, the laboratory must also analyze that sample for *E. coli*.
- The total coliform maximum contaminant level (MCL) requirements have been replaced by treatment technique (TT) requirements. This is one of the most significant revisions to the TCR. Starting April 1, 2016, there will no longer be a total coliform MCL. Instead, there are thresholds that trigger additional actions by the water system if they are exceeded. The thresholds are referred to as "TT-triggers" and are explained in the handouts accompanying this letter. For example, for systems taking < 40 samples/month a system must conduct a Level 1 assessment if it incurs two or more TC+ (routine and/or repeats samples) in one month [40 CFR 141.859(a)(1)(ii)].
- If your PWS exceeds one of the TT-triggers, you must complete either a Level 1 or Level 2 assessment, depending on which trigger was exceeded. You will also need to complete corrective action(s) to address any sanitary defects that are identified during the assessment(s).

A Quick Reference Guide and Fact Sheets on the RTCR are enclosed. The Quick Reference Guide provides more information on this regulation, and the Fact Sheets explain the monitoring and corrective actions in more detail. In addition to these materials, please refer to additional guidance and the state

regulations addressing the RTCR requirements on the state website at www.xxxxx.xx.gov. We will be notifying you of upcoming training opportunities within the next month.

Please contact Ann Smith at this office at (555) 555-1234 if you have any questions about this letter or the RTCR and its effect on your PWS. We appreciate your attention to this request.

Sincerely,

Enclosures: RTCR Quick Reference Guide, RTCR Fact Sheets, [list other enclosures]

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Appendix D

Glossary

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How to Use this Glossary

This Glossary provides an alphabetical list of definitions or explanations for terms typically used by states, tribes and U.S. Environmental Protection Agency (EPA) (i.e., entities that have primary enforcement responsibility under the Safe Drinking Water Act (SDWA)) when implementing and enforcing the Revised Total Coliform Rule (RTCR) (effective April 1, 2016) and Total Coliform Rule (TCR) (in effect until March 31, 2016). The definitions presented in this glossary set a common basis by which to better understand the implementation of the RTCR. These definitions do not replace definitions that have been codified or described in other agency documents. In addition, see Table D-1 below for an explanation of RTCR monitoring frequency by system type.

The following "*Source Code Key"* provides both the source of the definition or explanation, and where possible, hyperlinks to the appropriate regulatory or guidance section for additional information and context. Note that each definition or explanation is drawn either from a formal source (e.g., directly from a regulation) or an informal source (e.g., derived from guidance, other resource document, or subject matter experts).

SOURCE CODE KEY:

Code	Title	Web Link
1	40 CFR Part 141, 142 or 143	https://www.ecfr.gov/cgi-bin/text-idx?SID=3bd9b7c8ef6668fdf4622311cf026681&mc=true&tpl=/ecfrbrowse/Title40/40cfrv25_02.tpl#0
2	EPA's Drinking Water Glossary and Drinking Water Technical and Legal Term Glossary	http://iaspub.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?search=&searchByTopic=10040
3	Basic Information about Pathogens and Indicators in Drinking Water	
4	Complying with the Ground Water Rule - Small Entity Compliance Guide (EPA 815-R-07-018)	https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=60000K72.txt
5	Comprehensive Surface Water Treatment Rules Quick Reference Guide: Systems Using Conventional or Direct Filtration (EPA 816-F-04-003)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=500025GQ.txt
6	Consumer Confidence Report Rule: Quick Reference Guide (EPA 816-F-09-009)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100529A.txt
7	Cross-Connection Control Manual (EPA 816-R-03-002)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000262T.txt
8	Ground Water Rule (GWR) Monitoring Requirements Wholesale Systems Conducting Triggered Source Water Monitoring (EPA 816-F-10-059)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1007MOV.txt
9	Ground Water Rule Consecutive System Guidance (EPA 815-R-07-020)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=60000IQC.txt
10	Ground Water Rule Implementation Guidance (EPA 816-R-09-004)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1003XXA.txt
11	Ground Water Rule: A Quick Reference Guide (EPA 816-F-08-029)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100156H.txt
12	Guidance for Preparing Standard Operating Procedures QA/G-6 (EPA 600/B-07/001)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1008GTX.txt

Code	Title	Web Link
13	EPA's Invalidation of Total Coliform Positive Samples, Total Coliform Rule Issue Paper – April 2007	
14	Public Notification Rule Website	https://www.epa.gov/dwreginfo/public-notification-rule
15	Revised Public Notification Handbook (2nd Revision) (EPA 816-R-09-013)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1006ROA.txt
16	RTCR Quick Reference Guide (EPA 815-B-13-001)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100K9MP.txt
17	RTCR Webinar: April 10, 2013	http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/regulation_revisions.cfm
18	Surface Water Treatment Rule (40 CFR 141, Subpart H) Website	https://www.epa.gov/dwreginfo/surface-water-treatment-rules
19	Surface Water Treatment Rules: What Do They Mean to You? (EPA 816-R-11-009)	https://www.epa.gov/dwreginfo/interim-enhanced-surface-water-treatment-rule-documents
20	Variances and Exemptions: A Quick Reference Guide (EPA 816-F-04-005)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=901U0I00.txt
21	Merriam-Webster Dictionary	http://www.merriam-webster.com/
22	Total Coliform Rule: A Quick Reference Guide (EPA 816-F-01-035)	http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=3000663W.txt
23	Revised Total Coliform Rule, including Preamble (78 FR 10269 and 79 FR 10665)	https://www.federalregister.gov/articles/2013/02/13/2012-31205/national-primary-drinking-water-regulations-revisions-to-the-total-coliform-rule and https://www.federalregister.gov/articles/2014/02/26/2014-04173/national-primary-drinking-water-regulations-minor-corrections-to-the-revisions-to-the-total-coliform
24	Drinking Water Distribution Systems Website	
Code	Other	
*	This definition was derived from multiple sources or defined by subject matter experts to generally describe the term as applied to the drinking water program.	

Acronyms used in the Glossary

CCR	Consumer Confidence Report
CFR	Code of Federal Regulations
CWS	Community Water System
EC+	*E. coli*-positive
EPA	Environmental Protection Agency
FR	*Federal Register*
GWR	Ground Water Rule
GWUDI	Ground Water Under the Direct Influence
MCL	Maximum Contaminant Level
Mg/L	Milligrams per Liter
MCLG	Maximum Contaminant Level Goal
MRDL	Maximum Residual Disinfectant Level
NCWS	Non-Community Water System
NPDWR	National Primary Drinking Water Regulation
NSDWR	National Secondary Drinking Water Regulation
NTNCWS	Non-Transient, Non-Community Water System
NTU	Nephelometric Turbidity Unit
O&M	Operation and Maintenance
ORC	Operator in Responsible Charge
PN	Public Notification
ppm	Parts Per Million
PSI/PSIG	Pounds Force per Square Inch/Pounds Force per Square Inch Gauge
PWS	Public Water System
PWSS	Public Water System Supervision
RTCR	Revised Total Coliform Rule
SDWA	Safe Drinking Water Act
SOP	Standard Operating Procedure
SWTR	Surface Water Treatment Rule
TC	Total Coliform
TC+	Total Coliform-positive
TCR	Total Coliform Rule
TNCWS	Transient Non-Community Water System
TT	Treatment Technique
TWS	Transient Water System
UV	Ultraviolet

Source Code Key	TERM	DEFINITION OR EXPLANATION
Numeric		
	4-log removal or inactivation of viruses	99.99 percent removal and/or inactivation of viruses. Sometimes referred to as "4 nines."
A		
1, 16	Additional routine samples	Samples collected the month following a total coliform positive routine or repeat sample. [See TCR: 40 CFR 141.21(b)(5); and RTCR: 40 CFR 141.854(j) and 40 CFR 141.855(f)].
1, 11	Additional source water monitoring – under the GWR	Under the GWR, sample collection requirements performed in response to a fecal indicator-positive triggered source water sample. (See Sections 2.4.9, 2.5.7, 2.7.3 and 2.8.7 of RTCR State Implementation Guidance for further information regarding dual purpose samples and repeat monitoring requirements of the RTCR.)
3	Annual monitoring	Testing that water suppliers must perform to detect and measure contaminants, each and every year. Unless otherwise specified by the state, "year" means calendar year.
3	Annual site visit	A mandatory once a year evaluation of a NCWS on annual monitoring under the RTCR. The evaluation is equivalent to a Level 2 assessment and conducted by the state or a third party approved by the state.
21	Annually	Occurring or happening every year or once a year.
21	As soon as practical	The earliest capability to put into practice or be accomplished; feasible.
3	Assessment	An evaluation of the water system to identify sanitary defects and determine (if possible) why total coliform bacteria have been found in the water system. (See also "Level 1 assessment" and "Level 2 assessment").
3	Assessment forms (Level 1 and Level 2)	A document with blank spaces for insertion of Level 1 or Level 2 assessment information.
3	Assessor (Level 1 and Level 2)	The person who conducts a Level 1 or Level 2 assessment.
21	Atypical events	An unusual or irregular occurrence; could not have been expected to occur.
B		
2	Backflow	A reverse flow condition, created by a difference in water pressures, which causes water or another substance to flow back into the distribution pipes of a potable water supply from any source or sources other than an intended source and which contaminates the distribution system.
C		
3	Calendar month	The period from the beginning of the first day to the end of the last day of the month. For example, January 1 through January 31 is a calendar month.
21	Certification	The documentation provided by the water supplier to authoritatively attest that the system has met requirements.
21	Certify	The RTCR uses this term to mean 1) attest authoritatively as being true or as meeting a standard, or 2) recognize as having met special qualifications (as of a governmental agency or professional board) within a field.

Source Code Key	TERM	DEFINITION OR EXPLANATION
1	Code of Federal Regulations	Drinking Water Regulations are found at 40 CFR: Parts 141-143 authorized and further defined by the SDWA. Part 141—NPDWRs. Part 142—NPDWR Implementation (state requirements). Part 143—NSDWRs.
1	Clean compliance history	"…a record of no [maximum contaminant level] MCL violations under § 141.63; no monitoring violations under § 141.21 or subpart Y; and no coliform treatment technique trigger exceedances or treatment technique violations under subpart Y" [40 CFR 141.2]. In addition to other criteria/conditions specified in subpart Y, systems must have a clean compliance history for the previous 12 months to be eligible for reduced monitoring.
1	Community water system	"A public water system which serves at least 15 service connections used by year round residents or regularly serves at least 25 year-round residents" [40 CFR 141.2].
1, 9	Consecutive system	"A public water system that receives some or all of its finished water from one or more wholesale systems. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems" [40 CFR 141.2].
6	Consumer Confidence Report	An annual water quality report delivered to community water system customers summarizing information regarding source water, detected contaminants, compliance and educational information.
*	Continuous disinfection	The addition of a disinfectant (typically at the entry point) to the water system in an uninterrupted manner to neutralize or destroy the growth of harmful microorganisms. Common types of continuous disinfection are chlorine, chloramine, ultraviolet light and ozone.
3	Corrective action	Measures taken to address or fix any sanitary defect(s).
D		
2	Dead end	The end of a water main which is not connected to other parts of the distribution system by means of a connecting loop of pipe and in which water becomes stagnant. (See also "looping".)
3	Default monitoring frequency	When transitioning from the TCR to the RTCR, the public water system's (PWS's) monitoring frequency defaults to the monitoring frequency under the TCR unless the state has determined that another monitoring frequency is appropriate. (See Table D-1 below.)
24	Distribution system	PWSs depend on distribution systems to provide an uninterrupted supply of pressurized safe drinking water to all consumers. For CWSs, the system consists of an interconnected series of pipes, storage facilities and components that convey drinking water and meet fire protection needs for cities, homes, schools, hospitals, businesses, industries and other facilities. The distribution system mains carry water from the treatment plant (or from the source in the absence of treatment) to the consumer. For NCWSs, the system consists primarily of premise plumbing used to convey drinking, domestic and process water needs.

Source Code Key	TERM	DEFINITION OR EXPLANATION
22	Distribution system sample	The water collected from the distribution system and analyzed for total coliform bacteria according to a written sample siting plan. Total coliform samples must be collected at sites within the distribution system to monitor the water quality in the distribution system, and to determine the effectiveness of treatment and the integrity of the distribution system.
8	Dual purpose sample (TCR/RTCR, GWR)	The water collected and analyzed for total coliform bacteria that serves more than one function under different requirements. Samples taken at the ground water source serve both as a triggered source water sample under the GWR and as one of the repeat samples under the RTCR. This provision of the RTCR applies only to ground water systems serving 1,000 or fewer people and with a single well. The system must obtain prior written state approval for the sample to serve as a source water sample.
E		
3	*E. coli*	Escherichia coli (*E. coli*) are bacteria whose presence indicates that water may be contaminated by human or animal wastes. Microbes in these wastes can cause short term effects, such as diarrhea, cramps, nausea, headaches or other symptoms. They may pose a special health risk for infants, young children, some of the elderly and people with severely compromised immune systems.
16	*E. coli* MCL (formerly acute total coliform MCL)	A PWS has an *E. coli* MCL violation in the following situations: An *EC*+ repeat sample following a TC+ routine sample. A TC+ repeat sample following an *EC*+ routine sample. Failure to collect all the required repeat samples following an *EC*+ routine sample. Failure to test for *E. coli* when any repeat sample tests positive for total coliform. An *E. coli* MCL violation requires Tier 1 PN; notification of consumers within 24 hours.
1	Eight required elements of a sanitary survey	The general categories of a sanitary survey as required under the SDWA. The sanitary survey must include an evaluation of the eight applicable components listed below: Source. Treatment. Distribution system. Finished water storage. Pumps, pump facilities and controls. Monitoring, reporting and data verification. System management and operation. Operator compliance with state requirements. [Ground water systems: 40 CFR 141.401(c) and 40 CFR 142.16(o)(2)(i); and Subpart H systems: 40 CFR 142.16(b)(3)(i)].
1, 17	Enhancement(s)	A water system improvement listed in the RTCR that must be put in place by a non-community water system (NCWS) to return to reduced monitoring or for a CWS to qualify for reduced monitoring beginning April 1, 2016. [NCWSs: 40 CFR 141.854(h)(2); and CWSs: 40 CFR 141.855(d)(1)(iii)].

Source Code Key	TERM	DEFINITION OR EXPLANATION
3	Equivalent enhancements	Comparable water system improvements not listed in the RTCR that can be put in place by a NCWS or CWS to return to reduced monitoring. The state (at its discretion) may identify equivalent enhancements not specified in the RTCR. (See 40 CFR 142.16(q)(2)(viii)(C) for the special primacy requirement.)
20	Exemption	A condition that the PWS is unable to comply with the NPDWR due to compelling factors (which may include economic factors) or to implement measures to develop an alternative source of water supply to achieve compliance. Variances and exemptions are not available under the RTCR. (SDWA section 1416(a); 40 CFR 142.50; and 40 CFR 141.4(a) and the associated note.)
1	Extension (of 24 hours)	Additional time allowed by the state to collect the required repeat samples, as provided for under 40 CFR 141.858(a)(1). The state (at its discretion) may extend the 24-hour limit on a case-by-case basis if the system has a logistical problem that is beyond its control, in collecting the repeat samples within 24 hours or may implement criteria for systems to use in lieu of case-by-case extensions.
F		
3	Fecal indicator (GWR)	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Coliphage are viruses that infect the bacterium *E. coli*. Enterococci are bacterial indicators of fecal contamination. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches or other symptoms. They may pose a special health risk for infants, young children, some of the elderly and people with severely compromised immune systems.
G		
1, 11	Ground Water Rule	The GWR establishes an approach to identify ground water sources susceptible to fecal contamination and requires action(s) to correct significant deficiencies and source water fecal contamination. This rule applies to all PWSs that use ground water, including consecutive systems, except that it does not apply to PWSs that combine all of their ground water with surface water or with GWUDI of surface water prior to treatment. (See 40 CFR 141, Subpart S.)
H		
1, 15	Health effects language	Standard wording that explains the potential impacts to human health of a contaminant. The health effects language is often associated with MCL and MRDL violations, action level exceedances, TT violations and violations of a condition of a variance or exemption. (See 40 CFR 141, Subpart Q.)

Source Code Key	TERM	DEFINITION OR EXPLANATION
I		
17	Increased monitoring	More frequent sampling requirements for a NCWS using only ground water and serving 1,000 or fewer people. For example, monitoring frequency increases from quarterly or annually to monthly monitoring the month following any of these events: Triggered Level 2 assessment or a second Level 1 assessment in a rolling 12 months; *E. coli* MCL violation; Coliform TT violation; or, Two RTCR monitoring violations, or one RTCR monitoring violation and one Level 1 assessment, in a rolling 12 months, for a system on quarterly monitoring. (See also Table D-1 below.)
13	Invalidation (of a sample)	A determination by the state or laboratory to void a sample. Such determinations are only allowed under specific conditions listed at 40 CFR 141.853(c). The system must collect another sample to replace an invalidated sample. (See Section 2.9 of the RTCR State Implementation Guidance for further details.)
J		
K		
L		
1	Level 1 assessment	"…an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. It is conducted by the system operator or owner" [40 CFR 141.2].
1	Level 2 assessment	"… an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. A Level 2 assessment provides a more detailed examination of the system (including the system's monitoring and operational practices) than does a Level 1 assessment through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices. It is conducted by an individual approved by the state, which may include the system operator" [40 CFR 141.2].
*	Looping (of water mains)	The practice of interconnecting water mains to eliminate dead ends where water does not circulate and prevent stagnant water as well as reduce residence time. The intent is that water can flow back and forth in the 'loop' depending on water usage at different points in the looped water mains.
*	Loss of distribution system integrity	A distribution system that is no longer closed to the outside (external) environment and potential contamination. Causes include a water main break, cracked pipe, seal leaks, or loose or broken fittings/joints.
*	Low pressure condition	A situation where the pressure within the water main(s) and/or premise plumbing drops below the operating pressure specified or required by the state.

Source Code Key	TERM	DEFINITION OR EXPLANATION
M		
1	Maximum contaminant level	"…the maximum permissible level of a contaminant in water which is delivered to any user of a public water system" [40 CFR 141.2]. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. EPA sets MCLs at levels that are economically and technologically feasible on a national level, but some states set MCLs which are more stringent than EPA's. Compliance calculations for the MCL for a particular contaminant may be based on a single sample, an average of samples taken over time and/or space or another calculation procedure.
1	Maximum contaminant level goal	"…the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. Maximum contaminant level goals are non-enforceable health goals" [40 CFR 141.2]. MCLs are set as close to the MCLG as feasible, but these goals are not always economically or technologically feasible.
1	MCL violation	A violation that is assessed on a PWS when the water contains more than the permissible amount of a contaminant, based on the required compliance calculation process.
1	Milligrams per Liter (mg/L)	The amount of a substance in milligrams that is found in a one-liter volume of water in water sample, or in the case of an MCL, the amount of a substance in milligrams that is allowable in a one-liter volume of water. The mg/L amounts are also commonly referred to as ppm.
1	Maximum residual disinfectant level	"… a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects" [40 CFR 141.2].
*	Microbial contaminants	Organisms such as coliform bacteria (including *E. coli*), viruses and other pathogens (e.g., *Cryptosporidium, Giardia and Legionella*) that can contaminate drinking water.
*	Mixing devices	A mechanism that is used to mix water in a water storage facility to ensure that the water does not stagnate.
1	Monitoring schedule	A schedule that outlines the minimum number of samples, sampling locations and sampling frequency (or the required sample collection date or period) for samples that must be collected by a public water supplier, based on the type of water system, source water(s) used, population served and other factors.
1	Monitoring violation under the RTCR	A violation that occurs when a PWS does not collect every required routine or additional routine sample in a compliance period; or when a sample is not analyzed for *E. coli* after it has been determined that the sample contains coliform bacteria [40 CFR 141.860(c)].
1	Monthly coliform MCL violation (also referred to as non-acute coliform MCL violation)	A violation under the TCR for exceeding the amount of permissible coliform bacteria in the water during a one month period [40 CFR 141.63(a)]. This MCL violation was eliminated and replaced in the RTCR by a requirement to conduct an assessment and if necessary to take corrective actions.
3	Monthly monitoring	Monitoring that is conducted each calendar month.
3	Months (calendar)	A month on the calendar (January, February, March, etc.), beginning with the first day and ending on the last day. Calendar months have 28 to 31 days.
3	Months (consecutive)	Consecutive months are calendar months that follow one after another without interruption (e.g., January, February and March would be 3 consecutive months).

Source Code Key	TERM	DEFINITION OR EXPLANATION
3	Months (rolling 12 months)	A period of 12 consecutive calendar months determined on a rolling basis with a new 12-month period beginning on the first day of a calendar month.
N		
1	National Primary Drinking Water Regulation	NPDWR is the term used to describe federal drinking water regulations, such as the RTCR. (See 40 CFR Part 141.)
*	Negative samples or results	The absence of. For instance, a water sample result which does not contain coliform bacteria or *E. coli* bacteria. A sample which is tested for coliform and found to not contain coliform bacteria is referred to as a 'negative result', a 'negative coliform result' or a 'coliform-negative' result. A sample which is tested for *E. coli* and found not to contain *E. coli* bacteria can also be referred to as a 'negative result', a 'negative *E. coli* result' or an '*E. coli*-negative result'.
1	Nephelometric Turbidity Units	Units used to measure the turbidity (cloudiness) of the water.
1	Non-community water system	"A public water system that is not a community water system. A non-community water system is either a "transient non-community water system (TNCWS)" or a "non-transient non-community water system (NTNCWS)" [40 CFR 141.2].
3	Non-residential	A service connection or population that is not residential (i.e., there are not people living there). For example, a school is a 'non-residential' PWS when there are no residents served water by that PWS.
1	Non-transient non-community water system	"A public water system that is not a community water system and that regularly serves at least 25 of the same persons over six months per year" [40 CFR 141.2]. Some examples are schools, factories, office buildings and hospitals which have their own water systems.
22	Notification	The action of informing the state or PWS. Notification (to PWS): The date and time when a PWS receives sample results from the laboratory, or the date and time when the PWS receives verbal or written communication from the state or laboratory of a required action. EPA recommends that states work with PWSs and laboratories to facilitate timely communication through the most expeditious method (e.g., phone, fax or email). Notification (to state): The date and time when the state receives verbal or written communication (whichever is required) from a PWS.
*	Nutrients	Specific elements, such as carbon, nitrogen or phosphorus, that may support the growth of certain types of bacteria in the distribution system.
O		
*	On-line monitoring	Monitoring of a parameter, such as disinfectant dosages or pH using a device that measures the values of the parameter(s) in the water as it flows through the pipes.
*	Operational activities	Activities performed by PWS personnel in the daily operation of a PWS, such as hydrant flushing and testing, infrastructure installation or repair, etc.

Source Code Key	TERM	DEFINITION OR EXPLANATION
*	Operational data	Data, such as water pressure or water flow, that are used to monitor the operation of a PWS.
*	Operations plan	A plan used by a PWS to integrate all aspects of operation and maintenance functions to meet the goals of flow, pressure, water quality, etc.
*	Operator, operator in charge or operator in responsible charge	A person who is recognized as the person in charge of operating a PWS. A PWS may have one or more operators, with one of the operators being designated as the 'operator in charge' or 'operator in responsible charge.' (Also, see 'Qualified Operator' and 'Qualified Party.')
*	Operation and Maintenance	One of the primary functions of a PWS: to operate and maintain the system such that a safe (as demonstrated by meeting federal and state requirements) and adequate supply of water is always available to the public.
*	Overflow piping	A pipe designed to drain water from a storage tank or vessel onto the ground or into a designated area if a tank overfills.
P		
*	Pathogen	A disease-causing micro-organism such as bacteria, viruses and parasitic protozoa which can cause a variety of illnesses, including acute gastrointestinal illness with diarrhea, abdominal discomfort, nausea, vomiting and other symptoms
1	Positive samples or results (TCR/RTCR)	The presence of. A water sample result which contains coliform bacteria or *E. coli* bacteria. A sample which is tested for coliform and found to contain coliform bacteria is referred to as a 'positive result', a 'positive coliform result' or a 'coliform-positive' result. A sample which is tested for *E. coli* and found to contain *E. coli* bacteria can also be referred to as a 'positive result', a 'positive *E. coli* result' or an '*EC*+ result'.
3	Pound-force per square inch or Pound-force per square inch gauge	A measure of the amount of force per square inch that is exerted on a surface, such as the inside of a water pipe.
*	Premise plumbing	Plumbing within a structure such as a school or a residence. Premise plumbing also includes the water service line from the PWS main to the plumbing within the structure. It is generally downstream of the water meter for CWS customers and part of the distribution facilities in NCWSs.
*	Pressure loss	A reduction in the amount of water pressure inside a pipe.
1	Primacy or primary enforcement responsibility	40 CFR Part 142 establishes requirements for primacy agencies to obtain and/or retain primary enforcement responsibility (primacy) for the PWSS program as authorized by SDWA Section 1413. The 1996 SDWA Amendments updated the process for states to obtain and/or retain primacy. On April 28, 1998, EPA promulgated the Primacy Rule to reflect these statutory changes [63 FR 23361].
1	Primacy agency	A state, territory or tribal program that has the responsibility and authority to administer EPA's drinking water regulations within its borders. The state, territory or tribe must have rules at least as stringent as EPA's. In the absence of state, territory or tribal primacy, EPA acts as the primacy agency.
3	Professional judgment (also best professional judgment)	The judgment of a person with relevant experience and knowledge in a subject matter as it pertains to making decisions on required or recommended actions to be taken to achieve the desired outcome.

Source Code Key	TERM	DEFINITION OR EXPLANATION
3	Protected water source	A source deemed by the state to be protected from contamination. Protection may be provided by natural conditions (e.g., confined aquifer) or other physical barriers (e.g., covered reservoir). A protected water source is required for a system to qualify for reduced monitoring.
1	Public notification	Mandatory communication required by a PWS to be distributed to affected consumers when the system has violated MCLs or other regulatory requirements. The notice advises consumers what precautions, if any, they should take to protect their health. There are different timing requirements for distribution of these notices; see Tier 1, Tier 2 and Tier 3 [40 CFR 141, Subpart Q].
1	Public water system	"A system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes: any collection, treatment, storage and distribution facilities under control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any "special irrigation district." A public water system is either a "community water system" or a "non-community water system" [40 CFR 141.2].
Q		
*	Qualified operator	A person, whom the state has determined, based on established evaluation criteria for the specific type of PWS, to be qualified to operate a PWS. There are different levels of qualifications required, depending on the complexity of the PWS. A qualified operator is required for Subpart H systems and for systems using a disinfectant.
*	Qualified party	A person, whom the primacy agency has determined, based on established evaluation criteria, to be qualified to perform a required task, such as a sanitary survey or Level 2 assessment or an analytical measurement.
1	Quarterly	In each and every calendar quarter (January through March, April through June, July through September and October through December).
*	Quarterly monitoring	Monitoring that is conducted each and every calendar quarter (January through March, April through June, July through September and October through December). To be representative, quarterly monitoring should be conducted in the same month of the quarter on a continuing basis (e.g., the first month of each quarter would be January, April, July and October), unless directed otherwise by the state.
R		
*	Recommended Standards for Water Works	A guidance document that is used by many states to establish criteria or requirements for PWSs, also commonly known as "the 10 States Standards."
1	Reduced monitoring (TCR/RTCR)	A reduction in the frequency and/or number of samples to be collected. CWSs and NCWSs serving 1,000 or fewer people and using only ground water are eligible to reduce their routine coliform monitoring frequencies to less than the required routine frequency if they meet specific criteria and if permitted by the primacy agency. PWSs serving more than 1,000 people or PWSs using a Subpart H source (including consecutive systems) are not eligible for reduced monitoring. (See Table D-1 below.)

Source Code Key	TERM	DEFINITION OR EXPLANATION
1	Repeat monitoring under the RTCR	Monitoring required following a routine or repeat coliform sample that is total coliform-positive. The system must collect no fewer than three repeat samples for each total coliform-positive sample within 24 hours of notification of the positive sample. The state may extend the 24-hour limit on a case-by-case basis or through criteria used in lieu of case-by-case approvals and must specify the amount of time being granted for an extension. The state may not waive the requirement for a PWS to collect repeat samples [40 CFR 141.858(a)(1)].
1	Reporting	Mandatory communication from the system to the state or from the state to EPA. General system requirements are found at 40 CFR 141.31; RTCR–specific requirements are found at 40 CFR 141.861(a). State reporting requirements are found at 40 CFR 142.15. Federal language does not mandate the format of reporting or require a means of transmission of data from the water system or laboratory to the state.
1	Reporting violation under the RTCR	A violation that is assessed against a PWS for failing to submit a report to the primacy agency within the required timeframe. There are three specified reporting violations in the RTCR [40 CFR 141.860(d)]: 1) Failure to submit a monitoring report or completed assessment form after the PWS has properly conducted monitoring or an assessment; 2) Failure to notify the state following an *EC+* sample in a timely manner; and 3) Failure to submit a certification of completion of state-approved start-up procedure by a seasonal PWS. A Tier 3 PN is required for these situations.
*	Residence time or retention time	The amount of time water resides within the distribution system or water storage facility until delivery to a customer, and can be characterized as an average (average residence or retention time) or a maximum (maximum residence or retention time).
3	Residential	A service connection or population that is occupied on a year-round basis by the same person(s). For example, family residences, apartment buildings or long-term care facilities are ‘residential’ types of PWS. (See also Non-residential.)
1	Residual disinfectant concentration	The concentration of disinfectant measured in mg/l in a representative sample of water. The “C” in CT calculations [40 CFR 141.2].
*	Residual in the distribution system	Concentration of a disinfectant measured at representative locations throughout the distribution system.
1	Routine monitoring	The monitoring frequency (also known as default monitoring) with which PWSs must collect routine coliform samples. See Table D-1 below.
3	Revised Total Coliform Rule	RTCR, promulgated February 13, 2013. PWS compliance with this rule began no later than April 1, 2016.
1	RTCR transition	The time when PWSs begin monitoring under the RTCR and no longer under the TCR. Systems, including seasonal systems, must continue to monitor according to the total coliform monitoring schedules under 40 CFR 141.21 that were in effect on March 31, 2016, unless any of the conditions for increased monitoring are triggered on or after April 1, 2016, or unless otherwise directed by the state.

Source Code Key	TERM	DEFINITION OR EXPLANATION
S		
1	Sample siting plan	A written document that identifies sampling locations or sites for routine and repeat sampling, including a sample collection schedule, representative of water throughout the distribution system. These plans are subject to state review and revision. [40 CFR 141.853(a)]
1	Sanitary defect under the RTCR	"…a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place" (40 CFR 141.2).
2	Sanitary survey	"…an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water" [40 CFR 141.2].
1	Seasonal system (seasonal NCWS)	"… a non-community water system that is not operated as a public water system on a year-round basis and starts up and shuts down at the beginning and end of each operating season" [40 CFR 141.2].
10	Significant deficiencies (GWR)	A significant deficiency includes, but is not limited to, a defect in design, operation or maintenance, or a failure or malfunction of the sources, treatment, storage or distribution system that the state determines to be causing, or has the potential for causing, the introduction of contamination into the water delivered to consumers.
*	Site-specific considerations	Factors that apply to a particular place or point of occurrence such as location of a well or configuration of a sample tap.
1	Special monitoring evaluation	For ground water systems serving 1,000 or fewer people, a state evaluation conducted during a sanitary survey to review the status of a water system, including the distribution system, to determine whether the water system is on an appropriate coliform monitoring schedule. After the evaluation, the state may modify the system's monitoring schedule or it may allow the system to stay on its existing monitoring schedule [40 CFR 141.854(c)(2) and §141.855(c)(2)].
1	Special notice	Specified circumstances for providing information or announcements to the public. There are no special notices under the RTCR.
*	Special primacy requirements	Provisions pertaining to specific regulations where implementation of the rule involves state-specific or state discretionary activities beyond general primacy provisions. Special primacy requirements provide states flexibility to address issues and incorporate existing state processes, requirements and programs. States must include these RTCR-distinct provisions in an application for approval or revision of their program [40 CFR 142.16(q)].
1	Special purpose sample	A sample is collected for a particular reason, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement or repair. These samples must not be used to determine whether a TT-trigger has been exceeded. Repeat samples are not special purpose samples [40 CFR 141.853(b)].
12	Standard operating procedures	A set of written instructions that document a routine or repetitive activity followed by an organization.

Source Code Key	TERM	DEFINITION OR EXPLANATION
1	Start-up procedure	State-defined process, such as disinfection, flushing and coliform sampling, conducted by a seasonal system prior to serving water to the public. These measures address the public health risks associated with stagnant water and the depressurization and/or dewatering of the distribution system.
1	Start-up sample	A water sample taken for coliform bacteria analysis following the completion of start-up procedures and prior to serving water to the public.
1	State(s)	"… the agency of the state or Tribal government which has jurisdiction over public water systems. During any period when a state or Tribal government does not have primary enforcement responsibility pursuant to section 1413 of the Act, the term "state" means the Regional Administrator, U.S. Environmental Protection Agency" [40 CFR 141.2]. (See also primacy agency.)
21	State-approved	The official agreement to, or acceptance as satisfactory, by the primacy agency. (See also primacy agency.)
5, 19	Subpart H systems	"… public water systems using surface water or ground water under the direct influence of surface water as a source that are subject to the requirements of subpart H of this part" [40 CFR 141.2]. Subpart H is more commonly referred to as the Surface Water Treatment Rule (SWTR).
1	Subpart Y	The Subpart of 40 CFR Part 141 which contains the majority of the RTCR requirements.
T		
*	Total coliform-negative	A coliform sample that tests negative (absence) for the presence of coliform bacteria.
*	Total coliform-positive/*E. coli*-negative	A coliform sample that tests positive (presence) for total coliform bacteria and negative (absence) for *E. coli* bacteria.
*	TC+/*E. coli*-positive	A coliform sample that tests positive (presence) for total coliform bacteria and also tests positive (presence) for *E. coli* bacteria. It may also be referred to as "*EC+*."
*	Third party	An individual who is not an employee of the state and has been approved/certified by the state to conduct a Level 2 assessment. The individual may be an employee of the PWS under certain circumstances.
14	Tier	Category or Tier of PN. Depending on what Tier a violation or situation falls into, water systems have different amount of times to distribute the notice and different ways to deliver the notice. (See 40 CFR 141, Subpart Q.)
14	Tier 1 PN	Notice required when a situation occurs where there is the potential for human health to be immediately impacted. Water suppliers have 24 hours to notify the public.
14	Tier 2 PN	Notice required when a water system provides water with levels of a contaminant that exceed EPA or state standards or that hasn't been treated properly, but doesn't pose an immediate risk to human health. The water system must notify its customers as soon as possible, but within 30 days of the violation.
14	Tier 3 PN	Notice required when a water system violates a drinking water requirement (e.g., monitoring violation) that does not have a direct impact on human health. The water supplier has up to a year to provide notice to the public of this violation or situation to its customers.

Source Code Key	TERM	DEFINITION OR EXPLANATION
*	Timely (manner)	Occurring at a suitable time – not happening too late.
1	Total coliform bacteria (Also referred to as coliform or total coliform)	A group of closely related bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present.
1	Total Coliform Rule	Regulations promulgated in 1989 establishing monitoring requirements for total coliform bacteria. The TCR has been replaced by the RTCR, promulgated on February 13, 2013. (See 40 CFR 141.21 and 40 CFR 141, Subpart Y.)
1	Transient non-community water system	"… a non-community water system that does not regularly serve at least 25 of the same persons over six months per year" [40 CFR 141.2]. For example, a rest stop or state park. (See also NTNCWS.)
2	Treatment technique	A required process intended to reduce the level of a contaminant in drinking water. This process is used when an MCL is not technologically or economically feasible.
1	TT-trigger	Criteria established to define when an assessment is required. The RTCR specifies two levels of TT-triggers, Level 1 and Level 2 and their corresponding levels of response [40 CFR 141.859(a)].
1	TT violation under the RTCR	Failure to comply with a TT-trigger such as completing the required assessment after triggering an assessment, failure to correct all identified sanitary defects from an assessment or failure of a seasonal water system to complete a state-approved start-up procedure prior to serving water to the public [40 CFR 141.860(b)].
10	Triggered source water monitoring (GWR)	Monitoring of ground water sources after a system is notified of total coliform-positive samples collected under the RTCR. Triggered monitoring consists of collection of ground water source samples and analysis of those samples for a fecal indicator. (See 40 CFR 141, Subpart S.)
U		
4	Ultraviolet disinfection	A disinfection process exposing the water supply to ultraviolet light (irradiation) to provide pathogen inactivation.
V		
2	Variance	Formal process to qualify a PWS to not meet a certain drinking water standard. Variances are not allowed under the RTCR.
2	Violation	A failure to meet any drinking water requirement.
W		
1	Waiver	An intentional relinquishment by the state for a water system to perform a particular monitoring requirement.
2	Waterborne disease outbreak	The significant occurrence of acute illness associated with drinking from a PWS that is deficient in treatment, as determined by appropriate local or state agencies.
1	Wholesale system	"A public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems" [40 CFR 141.2].

Source Code Key	TERM	DEFINITION OR EXPLANATION
X		
Y		
Z		

Table D-1. RTCR Monitoring Frequency

SYSTEM TYPE	ROUTINE	REDUCED	INCREASED
All PWS > 1,000	Same as TCR	N/A	N/A
Any PWS using Surface Water, GWUDI of Surface Water, or Blended Surface Water/GWUDI ≤ 1,000	1/Month	N/A	N/A
GW CWS ≤ 1,000	1/Month	1/Quarter	N/A
GW NCWS ≤ 1,000	1/Quarter	1/Year	1/Month
Seasonal NCWS ≤ 1,000	1/Month	1/Quarter OR 1/Year During Vulnerable Period	N/A

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Appendix E

Field Scenarios

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RTCR Field Scenarios

Appendix E includes a subset of field scenarios for varying PWS types. Each scenario details an event (e.g., repeat sample not taken), and provides the applicable violations, corrective actions and assessments that the PWS must perform under the RTCR. The scenarios are numbered according to the complete list of scenarios being developed by EPA.

Water System Description	Situation Description	Violation Description and Required PN Tier	RTCR Corrective Action and/or Assessment Description	System Response	Reporting Requirements
Scenario 4: Large Municipal Surface Water System					
Situation 4A: No violation					
• Municipal Community Water System • Uses surface water • Serves a population of 120,000 (a minimum of 100 routine samples required) Collects 120 routine samples for **thorough** distribution system coverage (all samples are compliance samples) • Samples taken throughout the month, since PWS takes > 5 per month (and is a 40 CFR 141, Subpart H system) [40 CFR 141.853(a)(2)] • PWS has no prior Level 1 TT exceedances	• Two routine samples come back positive • Sample from the lower zone is TC+/*E. coli*-negative and the sample from the upper zone is TC+/*EC*+ • Six repeat samples, three for each routine TC+ sample, were collected within 24 hours, according to the sample siting plan • All repeat samples were TC-negative	• No *E. coli* MCL violation • No PN required	• No assessment required • Level 1 assessment is not triggered because: – All required repeat samples were collected – Less than 5% of the total routine and repeat samples were TC+		To state • Analytical results • Must notify state of *EC*+ sample [40 CFR 141.858(b)(1)] CCR • The number of *EC*+ as required by [40 CFR 141.153(d)(4)(x)] • May inform customers with *E. coli* statement [40 CFR 141.153(h)(7)(iv)]

Water System Description	Situation Description	Violation Description and Required PN Tier	RTCR Corrective Action and/or Assessment Description	System Response	Reporting Requirements
Situation 4B: EC+ resulting in E. coli MCL violation and Level 2 assessment					
• Municipal Community Water System • Uses surface water • Serves a population of 120,000 (a minimum of 100 routine samples required) • Collects 120 routine samples for thorough distribution system coverage (all samples are compliance samples) • Samples taken throughout the month, since PWS takes > 5 per month (and is a 40 CFR 141, Subpart H system) [40 CFR 141.853(a)(2)] • PWS has no prior Level 1 TT exceedances	• Two routine samples, taken on the same day, come back positive • Sample from the lower zone is TC+/*E. coli*-negative and the sample from the upper zone is TC+/*EC*+ • Six repeat samples, three for each routine TC+ sample, were collected within 24 hours, according to the sample siting plan • One repeat sample from lower zone is TC+/*EC*+ • State recommends taking additional "Not for Compliance" samples in the adjacent pressure zones to aid in determining if *EC*+ event extends into other pressure zones	• *E. coli* MCL violation [40 CFR 141.63(c)(1) and 40 CFR 141.860(a)(1)] • Tier 1 PN required	• Level 2 assessment required [40 CFR 141.859(a)(2)(i)]	• Level 2 assessment and all corrective actions are completed within 30 days of the assessment trigger • PWS issues Tier 1 PN as required by the state	To state • Must notify state of *E. coli* MCL violation [40 CFR 141.861(a)(1)(i)] • Must notify state of *EC*+ sample [40 CFR 141.861(a)(1)(ii)] • Analytical results • Completed Level 2 assessment report • PN and certification of PN compliance [1] CCR • Definition of Level 2 assessment [40 CFR 141.153(c)(4)(ii)] • The number of *EC*+ as required by 40 CFR 141.153(d)(4)(x) • Elements required by 40 CFR 141.153(h)(7)(ii) – Health effects language for EC – Number of assessments required and completed – Number of corrective actions required and completed – Explanation of reasons for assessments and corrective actions • Reason for the *E. coli* MCL violation [40 CFR 141.153(h)(7)(iii)]
1. See Section 6.1.3 for guidance on determining hydraulically or physically isolated areas and public notice requirements.					

Water System Description	Situation Description	Violation Description and Required PN Tier	RTCR Corrective Action and/or Assessment Description	System Response	Reporting Requirements
Situation 4C: Multiple TC+ samples resulting in Level 1 assessment					
• Municipal Community Water System • Uses surface water • Serves a population of 120,000 (a minimum of 100 routine samples required) • Collects 120 routine samples for thorough distribution system coverage (all samples are compliance samples) • Samples taken throughout the month, since PWS takes > 5 per month (and is a Subpart H system) [40 CFR 141.853(a)(2)] • PWS has no prior Level 1 TT exceedances	• Two routine samples, taken on the same day, come back positive • Sample from the lower zone is TC+/*E. coli*-negative and the sample from the upper zone is TC+/*EC*+. • Six repeat samples, three for each routine TC+ sample, were collected within 24 hours, according to the sample siting plan • All 3 repeat samples from the lower zone came back TC+/*E. coli*-negative • All samples from the upper zone came back TC-negative	• No *E. coli* MCL violation • No PN required	• Level 1 assessment required [40 CFR 141.859(a)(1)(i)] • More than 5.0% TC+ samples (8/(120+6+3+3)), TT-triggered [40 CFR 141.859(a)(1)(i)] • State allows PWS extra time for completion of a corrective action that takes longer than 30 days to be completed • Corrective action must be completed by the end of the calendar year	• PWS performs Level 1 assessment and submits assessment form on time	To state • Must notify state of *EC*+ sample [40 CFR 141.861(a)(1)(ii)] • Analytical results • Completed Level 1 assessment report CCR • Definition of Level 1 assessment [40 CFR 141.153(c)(4)(i)] • The number of *EC*+ sample results as required by 40 CFR 141.153(d)(4)(x) • Elements required by 40 CFR 141.153(h)(7)(i) – Health effects language for TC – Number of assessments required and completed – Number of corrective actions required and completed – Explanation of reasons for assessments and corrective actions • May include statement that explains that although the PWS has detected *E. coli*, it is not in violation of the *E. coli* MCL [40 CFR 141.153(h)(7)(iv]

Water System Description	Situation Description	Violation Description and Required PN Tier	RTCR Corrective Action and/or Assessment Description	System Response	Reporting Requirements
Scenario 5: TC+ Routine Sample with One TC+/EC+ Repeat Sample					
Situation: TC+ routine and both TC+/*E. coli*-negative and TC+/EC+ repeat samples					
• Riverview RV Park (NTNCWS) • Uses one ground water well • Serves the same 29 people nine months out of the year; and does not have more than the same five people served the entire 12 months out of the year • One routine sample per month required • Monthly monitoring required based on history • Dual purpose *E. coli* sampling approved at the well for GWR source water triggered sampling and RTCR repeat sampling	• Routine sample was TC+/*E. coli*-negative • Three repeat samples were collected, two distribution repeats were TC+/*E. coli*-negative, and the one repeat collected from the well was TC+/*EC*+ • The well sample is a state-approved dual purpose sample for the RTCR and the GWR	• Since the dual purpose sample is *EC*+, under the RTCR: • *E. coli* MCL violation [40 CFR 141.63(c)(1) and 40 CFR 141.860(a)(1)] • Tier 1 PN required GWR: • Comply with 40 CFR 141.402(a)(3) – take corrective action if directed by the state OR collect five additional source water samples	• Level 2 assessment required [40 CFR 141.859(a)(2)(i)] • Assessor completed Level 2 assessment within 30 days of trigger and identified two sanitary defects: unscreened well vent and a well hatch gasket was in poor condition • Assessor informed PWS of corrective action required during on-site visit	• Level 2 assessment completed by state-approved assessor • Submitted completed assessment report within 30 days of the trigger • Unscreened well vent was both a RTCR sanitary defect and a GWR significant deficiency—was corrected within 30 days of the trigger • Hatch gasket in poor condition was a RTCR sanitary defect - was corrected within 30 days of the trigger	To state • Must notify state of *E. coli* MCL violation [40 CFR 141.861(a)(1)(i)] • Analytical results • Completed Level 2 assessment report • PN and certification of PN compliance [2] CCR • Not required (unless required by the state) because the system is not a CWS
2. See Section 6.1.3 for guidance on determining hydraulically or physically isolated areas and public notice requirements.					

Water System Description	Situation Description	Violation Description and Required PN Tier	RTCR Corrective Action and/or Assessment Description	System Response	Reporting Requirements
Scenario 6: Seasonal System that Fails to Perform Start-up Procedures and Has Ongoing Coliform Problems					
Situation 6B: Seasonal system with ongoing coliform problems and did not collect routine sample in June					
• Campground water system (seasonal TNCWS) • PWS serves 34 people on a transient basis • Uses one ground water well • TNCWS in operation from June to October, closed from November to May and depressurized for the winter • One ground water well and 10,000 gallons of storage • Has an approved sample siting plan • State-approved start-up procedures require a pre-opening sample • One routine sample per month required when in operation [3] • One of three repeat samples can be collected from the well (dual purpose sample for RTCR and GWR), per state approval [40 CFR 141.853(a)(5)(ii)] • TNCWS has a history of coliform problems–monitoring not reduced to quarterly • *E. coli* sampling required at the source	• Did not collect the required monthly routine sample in June • Notified by the state in mid-July of monitoring violation for June • TNCWS did not perform state-approved start-up procedures or submit certification before serving water to its customers	• Monitoring violation (PWS failed to take all required samples) • Tier 3 PN required • TT violation (PWS failed to complete start-up procedures and failed to submit certification before water was served to its customers) • Tier 2 PN required	• To determine future eligibility for reduced monitoring, the state has discretion to allow TNCWSs serving 1,000 or fewer to collect a make-up sample before the end of the next monitoring period – There is still a monitoring violation even if the state allows a system to conduct make-up sampling for reduced monitoring eligibility [40 CFR 141.854(a)(4)] • Must perform start-up procedures and submit certification to the state as soon as possible	• Tier 3 PN was posted in the campground for the monitoring violation • Tier 2 PN posted in the campground for the TT violation	To state • Analytical results • PN and certification of PN compliance CCR • Not required (unless required by the state) because the system is not a CWS
3. A seasonal system must monitor monthly unless it meets the clean compliance history and other criteria for reduced monitoring 40 CFR 141.854(i)(2).					

Water System Description	Situation Description	Violation Description and Required PN Tier	RTCR Corrective Action and/or Assessment Description	System Response	Reporting Requirements
Situation 6C: Seasonal system with ongoing coliform problems and did not collect repeat sample in July					
• Campground water system (seasonal TNCWS) • PWS serves 34 people on a transient basis • Uses one ground water well • TNCWS in operation from June to October, closed from November to May and depressurized for the winter • One ground water well and 10,000 gallons of storage • Has an approved sample siting plan • State-approved start-up procedures require a pre-opening sample • One routine sample per month required when in operation [4] • One of three repeat samples can be collected from the well (dual purpose sample for RTCR and GWR), per state approval [40 CFR 141.853(a)(5)(ii)] • TNCWS has a history of coliform problems–monitoring not reduced to quarterly • *E. coli* sampling required at the source • TNCWS has no prior Level 1 TT exceedances	• Routine sample collected in July was TC+/*E. coli*-negative • Sample siting plan requires three repeat samples: two from the distribution system and one dual purpose sample from the well for RTCR and GWR • No repeat samples were collected	• Monitoring violation for GWR • Tier 3 PN required for GWR (some states may be more stringent)	• Level 1 assessment required for failing to collect all repeat samples [40 CFR 141.859(a)(1)(iii)]	• Level 1 assessment report submitted within 30 days with no identified sanitary defects • State contacted the owner/operator to discuss the assessment • As part of the state's evaluation of the assessment, the state requires the PWS to collect source water *E. coli* samples within 2 weeks before the assessment can be determined adequate	To state • Analytical results • Completed Level 1 assessment report • PN and certification of PN compliance CCR • Not required (unless required by the state) because the system is not a CWS
4. A seasonal system must monitor monthly unless it meets the clean compliance history and other criteria for reduced monitoring 40 CFR 141.854(i)(2)					

Appendix F

Recommended Workload Activities

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The Revised Total Coliform Rule (RTCR) Workload/Work Share Responsibilities Checklist contains a description of the RTCR workload activities that a state primacy agency and EPA can use to specify roles and responsibilities in the event that a state requests a primacy extension for the RTCR. This information can also be helpful to state primacy agencies not requesting extensions as they consider the various activities needed for implementing the RTCR. Special considerations and information are also provided for the state primacy agency to be able to determine/evaluate workload when implementing certain requirements of the RTCR.

PRIMACY AGENCY WORKLOAD ACTIVITIES

The Workload/Work Share Checklist is divided into the following categories of activities:

1. State primacy revision planning activities.
2. Monitoring requirements.
3. Sample siting plans.
4. Seasonal systems.
5. Notifications and procedures.
6. Assessments and corrective actions.
7. Technical assistance and training plans.
8. Data management and recordkeeping.

1. State Primacy Revision Planning Activities

Pursuant to 40 CFR 142.12, complete and final requests for approval of program revisions to adopt new or revised EPA regulations must be submitted to the EPA Administrator no later than two years after promulgation of new or revised federal regulations (or by February 13, 2015, for the RTCR). A state may be granted an extension of up to two years to submit its application package. To facilitate the primacy revision process, the following activities have been identified:

- ☐ Provide EPA with notification of the state's general process for codification/regulations at least as stringent as the RTCR.
- ☐ Provide EPA with the anticipated date of state codification/regulations at least as stringent as the RTCR.
- ☐ Provide anticipated date of draft RTCR primacy application crosswalk or extension request.
- ☐ Develop schedule for submittal of final primacy application crosswalk.
- ☐ Develop plan and timeline to address any deficiencies in the crosswalk.
- ☐ Provide EPA with the anticipated date of submission of complete program revision application.
- ☐ Provide EPA with the General Overview/Description of primacy agency resource planning procedures and viability for implementation of RTCR.
- ☐ Provide EPA with the General Overview/Description of primacy agency laboratory workload planning/assessment of capability for the RTCR implementation.
- ☐ Provide EPA with the General Overview/Description of primacy agency database management workload planning/assessment of capability for the RTCR implementation.
- ☐ Follow Figure 7-1 (State Rule Implementation and Revision Timetable for the RTCR - At-A-Glance Timeline) and Table 7-2 (State Primacy Revision Extension Checklist) in the RTCR State Implementation Guidance.

☐ Establish a process to coordinate and communicate with EPA about RTCR implementation activities (as described in more detail below) to provide accurate information and aid in a timely manner.

Additional Action Items if State Requests an Extension for Primacy

☐ State must notify its public water systems (PWSs) of EPA's implementation of the RTCR. Include contact information at the state (i.e., those who can answer questions about primacy program deficiencies, lack of regulatory/statutory authority, or timeframes for the state's implementation of the RTCR); and at EPA (i.e., those who can provide information on RTCR implementation).

☐ As part of this notification, the state should provide the respective state and EPA roles and responsibilities to its PWSs related to RTCR. In order to establish roles and responsibilities, the state and EPA should have meetings to discuss the RTCR workload activities mentioned above.

☐ In the state's notification to the PWSs, it should provide a description of how the state will assist EPA and PWSs for successful implementation of the RTCR.

☐ In correspondence to EPA, the state should describe which state meetings EPA should attend to provide support and/or testimony of the need for the state to obtain RTCR primacy in order to maintain full primacy for its Public Water System Supervision (PWSS) program.

2. Monitoring Requirements and Primacy Agency Activities

Identifying Systems on Reduced Monitoring: Less than Monthly Monitoring

☐ Update sample siting plans for systems on quarterly/annual monitoring.

- ☐ Identify vulnerable or critical month(s) for seasonal system monitoring and have an approved sample siting plan before reducing monitoring for a seasonal system.
- ☐ Identify special purpose sampling locations (especially if total coliform monitoring is part of start-up procedures or is part of a response to assessment/corrective action for failure to conduct repeat monitoring).
- ☐ Make a determination on whether the state will use the waiver provision for the three additional routine samples required the month after a routine total coliform-positive (TC+) (i.e., additional routine monitoring) and Ground Water Rule (GWR) triggered source water sampling.
- ☐ Decide on routine and repeat monitoring sites (restricting or allowing a PWS to choose its own repeat sites).
- ☐ Verify that any dual purpose sampling is approved and indicated in the sample siting plan.
- ☐ Use information from the special monitoring evaluations to update the sample siting plan. (Note: all ground water systems serving 1,000 or fewer people, regardless of RTCR monitoring frequency, must have a special monitoring evaluation to remain on reduced monitoring.)

☐ Describe reduced monitoring criteria. The state must develop reduced monitoring criteria if it does not require all PWSs to monitor monthly. PWSs monitoring quarterly or annually can be triggered into monthly monitoring and therefore, the state must specify that it will not allow these PWSs to return to less than monthly monitoring in the primacy crosswalk, or

develop the reduced monitoring criteria for returning these systems to less than monthly monitoring. The primacy agency must describe how the criteria will be evaluated to determine when systems qualify for reduce monitoring (mandatory criteria listed below).

- ☐ Determine if the system uses surface water, ground water under the influence (GWUDI) of surface water, or a surface water/GWUDI blended source(s).
- ☐ Determine if the system is serving 1,000 or fewer people.
- ☐ Determine if the system has a clean compliance history (i.e., 12 rolling months minimum for systems on quarterly monitoring and two consecutive years for systems monitoring annually).
- ☐ Determine if the system has a protected source.
- ☐ Determine if the system meets approved construction standards.
- ☐ Assess whether the system has had an annual site visit/Level 2 assessment/sanitary survey.
- ☐ Determine if all sanitary defects have been corrected.
- ☐ If on annual monitoring, specify if the state will require one or more <u>additional</u> criteria and how the <u>mandatory</u> criteria will be evaluated.

    1. Cross-connection control.
    2. Certified operator by state certification program.
    3. Regular site visits by circuit rider certified by an appropriate state certification program (state would need to define "regular").
    4. Continuous disinfection and maintenance of disinfectant residual throughout distribution system.
    5. Demonstration of 4.0-log virus removal or inactivation.
    6. Other equivalent enhancements to water system barriers (state would need to define "equivalent enhancements").

☐ Establish a process for determining whether a community water system (CWS) initially meets the operator certification requirements, and a process to track whether the system continues to meet those requirements in order to remain on reduced monitoring.

☐ Clarify that a PWS must begin monthly monitoring in the next month once it fails to meet the operator certification requirements.

☐ Determine how the state should be notified when there are any changes in operator and/or operator certification.

☐ Clarify that monthly monitoring is required in any month that the system serves more than 1,000 people.

☐ Determine whether the primacy agency will allow transient non-community water systems (TNCWSs) with monitoring violations to conduct make-up monitoring to qualify for reduced monitoring. Also, describe the timeframe for sampling (i.e., before the end of the quarter or year) and the number of samples a system will need to make-up before sampling again.

☐ Conduct annual site visits, Level 2 assessments or sanitary surveys.

When all systems are not required to monitor monthly, the state primacy agency may wish to consider how best to utilize/leverage its resources for providing assistance to its PWSs. For example, the state may wish to focus on:

- *Providing technical assistance to ensure that all seasonal systems complete start-up procedures;*
- *Identifying/addressing sanitary defects; and,*
- *Following up with systems to ensure that corrective actions are completed and PNs are issued on time.*

These activities may help more systems than if the state is constantly needing to adjust monitoring schedules based on triggers for increased monitoring (from annual to quarterly to monthly), and continually ensuring that systems meet the other requirements of reduced monitoring (i.e., site visits, clean compliance history, no monitoring violations, disinfection, operator certification). In addition, the primacy agency's compliance tracking database will need to be able to accommodate the changes in routine monitoring for PWSs on quarterly and annual monitoring (i.e., the RTCR requires that in the month after a TC+ sample, the PWS must collect three additional routine samples).

State Requirements for Waiving the Three Routine Samples after a TC+ Result for Any PWS on Quarterly or Annual Monitoring

☐ Determine the criteria for waiving the samples and whether the waiver provision will be utilized.

☐ Conduct a site visit before the end of the next month the system serves water to the public, in addition to determining the waiver criteria for this requirement.

When determining whether to implement the waiver of the three additional routine samples after a TC+, the state primacy agency may wish to evaluate the challenges listed under seasonal systems and reduced monitoring. In addition, there is a short timeframe for conducting a site visit. Will the state primacy agency be able to learn about the TC+ quickly enough to ensure that the site visit is conducted within the required timeframe?

Special Monitoring Evaluation

☐ Describe special monitoring evaluation procedures. Special monitoring evaluations must be conducted during <u>each</u> sanitary survey at all ground water systems serving 1,000 or fewer people.

☐ Determine the activities that will take place during each special monitoring evaluation, including reevaluating the appropriateness of the PWS monitoring frequency and number of samples per monitoring period, determining vulnerable or critical timeframes for monitoring and determining whether critical sites are being monitored.

Sample Result Invalidation

☐ Develop and submit criteria to determine if a sample was improperly processed by the laboratory, reflects a domestic or other non-distribution system plumbing problem, or reflects circumstances or conditions that do not reflect water quality in the distribution system.

☐ Develop procedures for notifying the PWS and laboratory that a replacement routine and repeat sample must still be collected for each invalidated sample.

☐ Develop and submit criteria for how much time a system has to collect repeat samples when a sample is invalidated.

☐ Develop internal recordkeeping requirements for decisions to invalidate samples, including the rationale behind the decision.

Criteria for Extending the 24-hour Period for Collecting Repeat Samples

☐ Develop and submit criteria for how much time a system has to collect repeat samples when there is a logistical problem beyond the PWS's control for collecting the repeat samples within 24 hours.

☐ Develop and submit criteria for how much time a system has to collect repeat samples when a sample is invalidated by the laboratory.

3. Sample Siting Plans

The primacy agency will need to ensure that all PWSs have a sample siting plan and that the plan identifies RTCR compliance sampling locations. The PWS must specify locations in its sample siting plan specific enough that if someone unfamiliar with the facility reviews the sampling plan, he/she will know where to sample.

☐ Establish state requirements for approval of sample siting plans.

☐ Determine if the state will require ad hoc additional sampling at any time and whether this requirement must be included in the PWS's sample siting plan.

☐ Determine if the state will require special purpose samples as part of conducting a Level 1 or Level 2 assessment.

☐ Determine if the state will require special purpose samples to determine the extent or persistence of coliform bacteria after corrective actions have been completed.

☐ When the primacy agency approves sample siting plans, it must ensure that routine, repeat and dual purpose GWR-RTCR samples are specified.

☐ Specify the procedure that a PWS will use if allowed to select its own repeat monitoring locations. The PWS must specify the repeat sites when the repeat site is TC+.

☐ Determine deadlines for reviewing and approving sample siting plans.

4. Seasonal Systems

Identifying Seasonal Systems and Determining Monitoring Frequency

The RTCR has specific requirements for seasonal non-community water systems (NCWSs). As such, there are several activities to be performed by the primacy agency.

☐ Identify NCWSs that are seasonal systems.

☐ If the state does not require all seasonal systems to monitor monthly, identify seasonal systems that are ineligible for reduced monitoring including:

- ☐ All seasonal systems of any size population with surface water, GWUDI, surface water/GWUDI blended source(s).
- ☐ Any seasonal system with an *E. coli* maximum contaminant level (MCL) violation within previous 12 months.
- ☐ Any seasonal system on a quarterly monitoring frequency with two RTCR monitoring violations in the previous 12 months.

- ☐ Any seasonal system with an annual monitoring frequency with one RTCR monitoring violation.

☐ Develop additional criteria, if necessary, for seasonal systems to stay on reduced monitoring.

☐ Determine if seasonal systems using only ground water and serving 1,000 or fewer people will be allowed to monitor less frequently than monthly.

☐ Develop procedures and a tracking mechanism to track the monitoring requirements for seasonal systems with populations that fluctuate above and below the 1,000-person threshold. Seasonal systems must monitor in any month that it serves more than 1,000 people.

☐ Establish procedures, including a timeframe, for when seasonal systems must take repeat or additional routine samples.

☐ Establish procedures, including timeframes, for when seasonal systems must conduct a Level 1 or Level 2 assessment for failure to take repeat or additional routine samples.

Operator certification requirements for seasonal systems will vary. TNCWSs typically are not required to have a certified operator, and many NTNCWSs only need an operator with a lower level license. Operator turnover tends to be higher at seasonal systems (if there even is an operator), so the state should consider how much training and retraining will be needed to help seasonal systems comply with the RTCR's monitoring and reporting requirements. This is especially true if the RTCR monitoring frequency and number of samples fluctuate during the seasonal system's operating period.

Seasonal systems are also required to complete start-up procedures prior to serving water to the public, and the state may have to spend time training and ensuring that start-up procedures are completed correctly and on time. As the state considers its implementation activities and oversight, it may want to evaluate the pros and cons associated with monthly monitoring. The state may be better served providing technical assistance to ensure correct completion of start-up procedures and addressing sanitary defects at seasonal systems than adjusting monitoring schedules based on triggers for increased monitoring (from annual to quarterly or quarterly to monthly).

Start-up Procedures

☐ Create a description of required start-up procedures (e.g., disinfection, flushing, total coliform sampling, a third-party site visit, disinfectant residual target level and self-inspection).

☐ Determine the criteria for exempting systems from completing start-up procedures, if allowed. Systems that are not pressurized year-round must conduct start-up procedures.

☐ Identify any seasonal systems that will be exempt from start-up procedures.

☐ Identify/update start-up dates for each seasonal system.

☐ Establish or update certified operator provisions for seasonal systems, if needed.

☐ Establish procedures for seasonal systems to notify the primacy agency on the start-up and shut-down dates if this changes from year to year.

☐ Establish notification procedures on the deadlines for certification of completion of start-up procedures.

☐ Determine applicability of start-up procedures for CWS that may experience an emergency shutdown.

☐ Establish procedures for following up on any unresolved or uncompleted repeat or additional monitoring, Level 1 or Level 2 assessments and any sanitary defects that were identified but had not yet been resolved by the time the seasonal system closed the previous operational period.

> *There may be significant challenges with operator turnover and with training operators of seasonal systems about the RTCR. Recognizing this, the state may want to consider whether exempting certain seasonal systems from start-up procedures could affect compliance. For seasonal systems that the state will allow to be on reduced monitoring, a site visit equivalent to a Level 2 assessment or a sanitary survey conducted annually is a prerequisite for reduced monitoring. The primacy agency may wish to consider a site visit as part of the seasonal system start-up for efficiency purposes.*

5. Notifications and Procedures

Procedures for Notifications between Primacy Agency, PWS, Laboratories, and Third-Party Technical Assistance

☐ Develop notification procedures for the following areas:

- ☐ Timelines for completing activities, including deadlines for seasonal system start-up procedures.
- ☐ Routine sampling frequency and any changes in the monitoring frequency required of a PWS.
- ☐ When and how to contact the primacy agency.
- ☐ Information from the PWS/laboratory when there is an *E. coli* (*EC*+) and/or TC+ sample, including the information on interim corrective action measures to be taken by a PWS before the primacy agency conducts its Level 2 assessment or reviews the PWS's Level 1 or Level 2 assessment.
- ☐ Treatment technique violations and *E. coli* MCL violations.
- ☐ Completion of corrective actions.
- ☐ Submission of assessment forms.
- ☐ Submission of certification of start-up procedures at seasonal systems.
- ☐ Tier 1, Tier 2 and Tier 3 public notification (PN) and certification of meeting PN requirements.

☐ Develop communication procedures for communications with the PWS, laboratory and/or third-party technical assistance providers (if applicable) regarding Level 1 and Level 2 assessments, site visits and repeat samples.

☐ Develop written materials to educate/notify a PWS about:

- ☐ RTCR requirements.
- ☐ PN requirements related to the RTCR.
- ☐ RTCR violations.
- ☐ Treatment technique exceedances.
- ☐ Enforcement actions, including Notices of Violation (NOVs) and Administrative Orders (AOs).

- ☐ Site visits.
- ☐ Follow-up activities to prevent or resolve violations.
- ☐ RTCR training opportunities.

☐ Develop written materials to educate/notify a laboratory about:

- ☐ Missing sample results.
- ☐ RTCR training opportunities.
- ☐ *EC*+ and TC+ results.
- ☐ Invalidation of samples.
- ☐ Follow-up actions to *EC*+ and TC+ results.
- ☐ Data reporting and formatting.
- ☐ QA issues.

PN and Consumer Confidence Report (CCR) Procedures from the PWS to its Customers

☐ Provide PWSs with new health effects language for PN under the RTCR.

☐ Provide PWSs with primacy agency contacts for when the PWS needs technical assistance with a Tier 1, Tier 2 or Tier 3 PN requirement.

☐ Develop procedures for coordinating between EPA and the state when a PWS issues a Tier 1 PN, and EPA is the primacy agent.

☐ Provide PWSs with new specific assessment related definitions and health effects language for CCRs under the RTCR.

☐ Communicate with PWSs on what information needs to be included in the 2017 CCR (which covers calendar year 2016), the 2018 CCR (which cover calendar year 2017), and all subsequent CCRs.

6. Assessments and Corrective Actions

Level 1 Assessments

☐ Develop the assessment form; form should prioritize/emphasize the identification of certain sanitary defects and re-prioritize less common sanitary defects. The primacy agency may consider having part of the assessment form filled out by the PWS and part of the assessment form filled out by the state (especially those elements concerning such issues as sampling procedures or laboratory error).

☐ Determine the conditions for the PWS to conduct ad hoc additional sampling that can be included in the assessment form as part of the assessment process and/or as part of the verification of effectiveness of corrective actions.

☐ Determine assessor qualifications and criteria for both Level 1 and Level 2 assessments.

☐ Develop procedures for determining the timeline for actions once an assessment trigger occurs. (Example: If a PWS must take one routine sample, then the clock starts when the repeat is required and subsequently the repeat is not conducted. Or if the PWS must take

more than one routine sample, then the clock starts with the most recent TC+ routine sample to calculate the 5.0 percent threshold.)

A Level 2 assessment is considered to be triggered due to more severe indicators of the possible presence of sanitary defects. The state should consider whether there are legal implications when third-party assessors conduct Level 2 assessments if there is noncompliance with a Level 2 assessment and required corrective actions.

Sanitary Defects and Corrective Actions

A sanitary defect is "a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place" [40 CFR 141.2].

The primacy agency needs to:

- ☐ Define the types of sanitary defects to be identified during an assessment.
- ☐ Describe the types of corrective actions to address sanitary defects.
- ☐ Establish timelines for corrective actions to be completed.

7. Technical Assistance and Training

Technical assistance and training are essential activities for ensuring PWS compliance, or for assisting PWSs when they violate the RTCR requirements. The primacy agency should:

- ☐ Determine who will provide training to PWSs (i.e., state staff, third-party technical assistance providers, EPA) and what the training should include (e.g., identifying sanitary defects, performing corrective actions, developing sample siting plans, conducting sampling, RTCR public notification procedures).
- ☐ Identify RTCR training curricula that are eligible for operator continuing education credits. Operator training should address identification of sanitary defects and implementing corrective actions.
- ☐ Provide training and technical assistance when systems ask about system-specific requirements for the RTCR.
- ☐ Provide on-site technical assistance or specify third parties that can provide on-site assistance.

8. Data Management and Recordkeeping

Effective data management is essential to rule implementation. There are a number of activities that the primacy agency will need to perform to manage the RTCR, including reporting to EPA.

- ☐ Determine how the primacy agency will track all RTCR requirements for PWSs.
- ☐ Determine who will have access to the data system and for which functions.
- ☐ Determine how laboratories/PWSs will report the sample results, at what frequency and in what format.
- ☐ Determine where and how sample result data will be stored.
- ☐ Determine how the database will differentiate between compliance samples and special purpose samples.

- ☐ Develop a procedure for resolving discrepancies between the PWS and its contracted laboratory.
- ☐ Determine how often compliance determinations need to be conducted. Frequency for compliance determinations should reflect the timelines for assessments and corrective actions following the trigger event.
- ☐ Determine how violations, assessment triggers and corrective actions will be documented in the database.
- ☐ Determine the procedure and frequency for compliance tracking to be conducted in order for the primacy agency to conduct Level 2 assessments within 30 days of the trigger event.
- ☐ If sanitary surveys or site visits equivalent to a Level 2 assessment will be used to help meet the Level 2 assessment criteria, determine how this data will be managed to make it transparent and clear that the Level 2 trigger exceedance is being addressed.
- ☐ Determine how operator certification requirements/compliance status will be tracked in order to allow a CWS to remain on quarterly monitoring.
- ☐ Collect, store and manage public notices and other compliance and operation data required.
- ☐ Report any violations incurred by PWSs to SDWIS/FED each quarter.
- ☐ Report any enforcement actions taken against the PWSs each quarter.
- ☐ Report a list of systems that the state is allowing to monitor less frequently than once per month for CWSs or less frequently than once per quarter for NCWSs as provided in 40 CFR 141.855 and §141.854, including the applicable date of the reduced monitoring requirement for each system.
- ☐ Keep records as specified in 40 CFR 142.14 and 40 CFR 142.15 (see Section 7.3.4 of the RTCR State Implementation Guidance for information on RTCR reporting and record keeping requirements).

Appendix G

Where to Download the Revised Total Coliform Rule (RTCR) [40 CFR Part 141 and 142]

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For a *Federal Register* downloadable copy of the Revised Total Coliform Rule (RTCR) [40 CFR Part 141 and 142], refer to US EPA website at: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule. This website contains up-to-date RTCR *Federal Register* notices for the original RTCR that was published on February 13, 2013 and minor corrections to the rule that were published on February 26, 2014, as well as supporting documents.