



# The Proposed Revised Total Coliform Rule (RTCR)

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# Timeline

- Proposed rule
  - 8/16/10
- Final rule
  - ~10/12
- Compliance date
  - Likely 3 years later



# Proposed Revised Total Coliform Rule (RTCR)

**- History -**



# RTCR - History

- 6 year review: EPA is required to review and revise, as appropriate, each National Primary Drinking Water Regulation no less often than every 6 years
- The net effect of the rule revision must be to maintain or improve public health protection
- EPA published its intent to revise the **Current TCR**
- EPA and industry experts conducted workshops and developed issue papers
- EPA convened the Total Coliform Rule Distribution System Federal Advisory Committee, comprised of representatives from 15 organizations



# Core Elements of the **Proposed** **RTCR**



## 8 Core Elements - Proposed RTCR

On July 14, 2010, EPA proposed a rule that has the same substance and effect as the elements in the AIP.

1. Assessment monitoring
2. Treatment Technique for TC, with PN only for Treatment Technique violations
3. Keeps *E. coli* as a health indicator similar to TCR
4. More stringent reduced monitoring criteria for small groundwater systems



## 8 Core Elements – Proposed RTCR

5. Increased monitoring for high-risk small groundwater systems
6. New monitoring requirements for systems under 4,100
7. Defining “seasonal systems” with specific requirements
8. Allows systems (< 1,000) to transition at their current monitoring frequency



# Rule Construct

Current TCR	Proposed RTCR
<p>Sections 141.52 (MCLGs), 141.63 (MCLs)</p> <ul style="list-style-type: none"> <li>• TC MCLG of zero</li> <li>• TC monthly MCL based on the number of TC+ samples in a month</li> <li>• Fecal coliform/<i>E. coli</i> acute MCL based on FC/EC + samples</li> <li>• Public Notification (PN) required for MCL violations</li> </ul>	<p>Sections 141.52 (MCLGs), 141.63 (MCLs), 141.859 (TT)</p> <ul style="list-style-type: none"> <li>• TC triggers assessment and corrective action (A/CA). [No MCL/MCLG for TC]</li> <li>• <i>E. coli</i> MCLG of zero and an MCL based on TC/<i>E. coli</i> monitoring results (Fecal coliform is no longer used)</li> <li>• PN               <ul style="list-style-type: none"> <li>▪ not required for only TC (+) results</li> <li>▪ Required for a Treatment Technique violation (failure to conduct assessment or take corrective action)</li> <li>▪ required for <i>E. coli</i> MCL violations</li> </ul> </li> </ul>



# Routine Monitoring (Baseline) & Sample Siting Plan

<b>Current TCR</b>	<b>Proposed RTCR</b>
<p><i>Section 141.21(a)</i></p> <ul style="list-style-type: none"> <li>• For NCWS (GW) <math>\leq 1,000</math> – 1 sample per quarter</li> <li>• For NCWS (SW) <math>\leq 1,000</math> and all CWS <math>\leq 1,000</math> – 1 sample per month</li> <li>• For all PWS <math>&gt; 1,000</math>, sampling is monthly based on population</li> </ul>	<p><i>Sections 141.854(b), 141.855(b), 141.856(b), 141.857(b)</i></p> <ul style="list-style-type: none"> <li>• Same as current TCR, with more explicit criteria to qualify for reduced monitoring</li> <li>• Site plan may propose repeat sites other than 5 up- and down- stream</li> <li>• Dedicated sampling stations acknowledged</li> <li>• Primacy application must indicate               <ul style="list-style-type: none"> <li>▪ what baseline and reduced monitoring provisions the State will adopt</li> <li>▪ how the State will implement to meet the minimum requirements of the rule</li> <li>▪ how the State will review and revise the sample siting plan</li> </ul> </li> </ul>



# Repeat Monitoring

<b>Current TCR</b>	<b>Proposed RTCR</b>
<p>Section 141.21(b)(1)-(4)</p> <ul style="list-style-type: none"><li>• PWS serving <math>\leq 1,000</math> must take 4 repeat samples for every TC(+) routine sample</li><li>• For GW PWS, 1 sample can be a source water sample to also comply with the Ground Water Rule (GWR) triggered monitoring requirement</li></ul>	<p>Section 141.858, 141.402(a)(2)(iv)</p> <ul style="list-style-type: none"><li>• Reduce repeat monitoring for PWS <math>\leq 1,000</math> from 4 samples to 3</li><li>• Clarifies that for GW PWS serving <math>\leq 1,000</math>, the State can allow one RTCR repeat sample from a GW source to also count as the GWR triggered source water sample if the State approves the use of <i>E. coli</i> as a fecal indicator for GWR source water sampling.</li></ul>



# Additional Routine Monitoring

<b>Current TCR</b>	<b>Proposed RTCR</b>
<p><i>Section 141.21(b)(5)</i></p> <p>PWS taking &lt; 5 routine samples per month (PWS serving <math>\leq 4,100</math>) must take at least 5 routine samples in the month after a TC(+) sample.</p>	<p><i>Section 141.854(j), 141.855(f)</i></p> <ul style="list-style-type: none"><li>• For PWS taking samples less frequently than once per month, reduces the number of samples required the month after a TC (+) from 5 to 3</li><li>• For PWS taking at least 1 sample per month, the additional routine sample requirement is eliminated (they take their usual number of samples the following month)</li></ul>



# Level 1 Assessment

<b>Current TCR</b>	<b>Proposed RTCR</b>
None required	<p><i>Section 141.859</i></p> <p><b>Triggers:</b></p> <ul style="list-style-type: none"><li>• For a system collecting at least 40 samples per month, more than 5.0% of samples collected are TC (+)</li><li>• For a system collecting fewer than 40 samples per month, more than one sample is TC (+)</li><li>• The PWS fails to take every required repeat sample after any single routine TC (+)</li></ul> <p><b>Assessment:</b></p> <ul style="list-style-type: none"><li>• Conducted by the PWS</li><li>• A basic examination of the source water, treatment, distribution system and relevant operational practices</li></ul>



# Level 2 Assessment

Current TCR	Proposed RTCR
None required	<p><i>Section 141.859</i></p> <p><b>Triggers:</b></p> <ul style="list-style-type: none"> <li>• Violation of the <b>Proposed RTCR</b> MCL for <i>E. coli</i> <ul style="list-style-type: none"> <li>▪ The system has an <i>E. coli</i> (+) repeat sample following a TC (+) routine sample</li> <li>▪ The system has a TC (+) repeat sample following an <i>E. coli</i> (+) routine sample</li> <li>▪ The system fails to take all required repeat samples following an <i>E. coli</i> (+) routine sample</li> <li>▪ The system fails to test for <i>E. coli</i> when any repeat sample tests (+) for TC</li> </ul> </li> <li>• Two Level 1 triggers in a 12 month period</li> <li>• For NCWS (GW) serving <math>\leq 1,000</math> on annual monitoring, a Level 1 trigger in each of 2 consecutive years</li> </ul>



## Level 2 Assessment (cont'd.)

<b>Current TCR</b>	<b>Proposed RTCR</b>
None required	<p><i>Section 141.859</i></p> <p><b>Level 2 Assessment:</b></p> <ul style="list-style-type: none"><li>• Conducted by the State or a party approved by the State (could be the PWS if qualified and approved by the State)</li><li>• A more in-depth examination of the system and its monitoring and operational practices</li></ul>



## Assessment Elements – Levels 1 and 2

<b>Current TCR</b>	<b>Proposed RTCR</b>
None required	<p><i>Section 141.859</i></p> <ul style="list-style-type: none"><li>• Atypical events that may affect distributed water quality or indicate that distributed water quality was impaired</li><li>• Changes in distribution system maintenance and operation that may affect distributed water quality, including water storage</li><li>• Source and treatment considerations that bear on distributed water quality</li><li>• Existing water quality monitoring data</li><li>• Inadequacies in sample sites, sampling protocol, and sample processing</li></ul>



# Corrective Action

<b>Current TCR</b>	<b>Proposed RTCR</b>
None required	<p><i>Section 141.859</i></p> <ul style="list-style-type: none"><li>• The PWS must correct all sanitary defects found during the assessment</li><li>• Sanitary defects and corrective actions must be described in the assessment form the PWS must submit to the State within 30 days of the assessment trigger</li><li>• A timetable for any corrective actions not already completed must also be in the form; the State will determine a schedule after consulting with the PWS</li><li>• The form may also indicate that no sanitary defects were found</li><li>• The State determines if the assessment is sufficient</li></ul>



## Reduced Monitoring - NCWS $\leq 1,000$ (GW)

<b>Current TCR</b>	<b>Proposed RTCR</b>
<p><i>Section 141.21(a)(3)(i)</i></p> <p>NCWS <math>\leq 1,000</math> (GW) can reduce to 1 sample per year if system is free of sanitary defects</p>	<p><i>Sections 141.854(e), 141.855(d)</i></p> <ul style="list-style-type: none"> <li>• NCWS <math>\leq 1,000</math> (GW) - same as in current TCR, but more criteria to qualify and remain on reduced</li> <li>• Criteria include:               <ul style="list-style-type: none"> <li>▪ an annual site visit;</li> <li>▪ a clean compliance history* for at least the last 12 months;</li> <li>▪ free of sanitary defects;</li> <li>▪ have a protected source and meet construction standards</li> </ul> </li> <li>• Other criteria are encouraged for NCWS: cross connection control; certified operator; meet disinfection criteria; other equivalent enhancements</li> </ul> <p>* "Clean compliance history" means no MCL, monitoring, or TT violations, or TT trigger exceedances under RTCR</p>



## Reduced Monitoring - CWS $\leq$ 1,000 (GW)

<b>Current TCR</b>	<b>Proposed RTCR</b>
<p><i>Section 141.21(a)(3)(i)</i></p> <p>CWS <math>\leq</math>1,000 (GW) can reduce to 1 sample per quarter if they have</p> <ul style="list-style-type: none"> <li>• no history of TC contamination</li> <li>• no sanitary defects</li> <li>• a protected GW source</li> </ul>	<p><i>Sections 141.854(e), 141.855(d)</i></p> <ul style="list-style-type: none"> <li>• CWS <math>\leq</math> 1,000 (GW) - same as in current TCR, but more criteria to qualify and remain on reduced</li> <li>• Criteria include:               <ul style="list-style-type: none"> <li>▪ a clean compliance history;</li> <li>▪ free of sanitary defects;</li> <li>▪ have a protected source and meet construction standards; and</li> <li>▪ certified operator</li> </ul> </li> <li>• Other criteria (one or more required for CWS; cross connection control; meet disinfection criteria; other equivalent enhancements)</li> </ul>



## Reduced Monitoring – Other Provisions

Current TCR	Proposed RTCR
<p>Systems serving &gt;1,000 people and Subpart H* systems (no matter the size) are not eligible for reduced monitoring</p> <p>*A Subpart H system is a PWS using surface water or ground water under the direct influence of surface water as a source</p>	<ul style="list-style-type: none"> <li>• Same as <b>Current TCR</b> for systems serving &gt;1,000 people and all Subpart H* systems</li> <li>• <u>Primacy application</u> must indicate               <ul style="list-style-type: none"> <li>▪ whether the State will adopt reduced monitoring provisions</li> <li>▪ whether the State will use all or a reduced set of optional criteria</li> <li>▪ how the criteria will be evaluated</li> </ul> </li> </ul>



# Increased Monitoring (NCWS) and Return to Baseline Monitoring (CWS)

<b>Current TCR</b>	<b>Proposed RTCR</b>
No criteria for remaining on or losing reduced monitoring	<p><i>Sections 141.854(f), 141.855(e)</i></p> <ul style="list-style-type: none"> <li>• NCWS (GW) serving <math>\leq 1,000</math> increase from quarterly or annual to monthly monitoring if they meet the criteria below</li> <li>• CWS (GW) serving <math>\leq 1,000</math> increase from quarterly back to monthly monitoring if they meet the criteria below</li> <li>• Criteria:               <ul style="list-style-type: none"> <li>▪ triggered Level 2 assessment or a 2<sup>nd</sup> Level 1 assessment in 12 months</li> <li>▪ <i>E.coli</i> MCL violation</li> <li>▪ TT violation</li> <li>▪ Two Subpart Y (RTCR) monitoring violations within 12 months if on quarterly monitoring, or Subpart Y (RTCR) monitoring violation if on annual</li> </ul> </li> </ul>



# Transition to the New Rule

<b>Current TCR</b>	<b>Proposed RTCR</b>
N/A	<p>Sections 141.854(c), 141.854(d), 141.855(c)</p> <ul style="list-style-type: none"><li>• Systems continue on their current TCR monitoring schedule</li><li>• For GW systems serving <math>\leq 1,000</math><ul style="list-style-type: none"><li>▪ NCWS must have an annual site visit or voluntary Level 2 assessment to remain on annual monitoring</li><li>▪ NCWS and CWS on reduced monitoring remain on that schedule unless/until they have an event that triggers a return to routine monitoring or as otherwise directed by the State</li><li>▪ Monitoring schedules will be evaluated by the State during each sanitary survey to determine if the monitoring frequency is appropriate</li></ul></li></ul>



# Seasonal Systems

<b>Current TCR</b>	<b>Proposed RTCR</b>
<p>Seasonal PWS has the same requirements as other systems of the same size and type</p>	<p><i>Section 141.851, 141.854(i), 141.856(a)(4), 141.857(a)(4)</i></p> <ul style="list-style-type: none"> <li>• Seasonal PWS is defined as a non-community system that operates 3 or fewer calendar quarters per year</li> <li>• Seasonal PWS must demonstrate completion of a State-approved start up procedure</li> <li>• Seasonal PWS sample site plan must designate the time period for monitoring based on high demand or vulnerability (if the PWS is monitoring less than monthly)</li> <li>• Primacy application must describe 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 systems must meet</li> </ul>



# Violations, Public Notification (PN), and Consumer Confidence Reports (CCR)

Current TCR	Proposed RTCR
<p><i>Section 141.63, Subpart O, Subpart Q</i></p> <ul style="list-style-type: none"> <li>• Violation of EC/FC MCL – acute violation, Tier 1 PN</li> <li>• PWS must notify State re: single EC/FC (+) result.</li> <li>• Violation of monthly TC MCL – Tier 2 PN</li> <li>• M&amp;R violation – Tier 3 PN</li> </ul>	<ul style="list-style-type: none"> <li>◦ <i>Violations - Section 141.860(a)</i></li> <li>◦ <i>PN – Sections 141.202, 203, 204, and Appendices A and B</i></li> <li>◦ <i>CCR – Section 141.153 and Appendix A</i></li> <li>• Violation of EC MCL – Tier 1 PN               <ul style="list-style-type: none"> <li>▪ Failure to take repeat samples following an EC (+) routine sample is also an MCL violation</li> </ul> </li> <li>• PWS must notify State re: single EC (+) result</li> <li>• Monthly TC MCL violation is dropped – triggers Assessment and Corrective Action (A/CA) instead</li> <li>• A TT violation occurs when a PWS fails to conduct required A or CA – Tier 2 PN</li> <li>• PN/CCR Language - TC health effects language changed to reflect failure to conduct A or CA</li> <li>• M&amp;R violations will be tracked separately – Tier 3 PN</li> </ul>



# Analytical Methods

<b>Current TCR</b>	<b>Proposed RTCR</b>
<p><i>Section 141.21(f)</i></p> <ul style="list-style-type: none"><li>• PWS must conduct TC analysis in accordance with the methods listed</li></ul>	<p><i>Section 141.852</i></p> <ul style="list-style-type: none"><li>• Changes to methods included in the proposed RTCR (but not discussed in the AIP) are consistent with the lab cert manual<ul style="list-style-type: none"><li>▪ change in holding time definition</li><li>▪ requiring de-chlorination agent</li><li>▪ requiring autoclaving of MF equipment</li></ul></li><li>• Revised and clarified the methods table</li></ul> <p><i>Note: As recommended in the Advisory Committee AIP, the EPA Technical Services Center is planning evaluations of current methods and the Alternative Testing Procedure for approving new methods. For more information on the evaluations, please contact Jennifer Best at <a href="mailto:best.jennifer@epa.gov">best.jennifer@epa.gov</a>.</i></p>



# Variations, Exemptions and Best Available Treatment

<b>Current TCR</b>	<b>Proposed RTCR</b>
<p><i>Section 141.4</i></p> <ul style="list-style-type: none"> <li>Variations or exemptions may not be granted for TC or <i>E. coli</i> MCLs except for persistent growth of TC (biofilm)</li> </ul> <p><i>Section 141.63(e)(3)</i></p> <ul style="list-style-type: none"> <li>BAT includes proper maintenance of the distribution system</li> </ul>	<p><i>Section 141.4</i></p> <ul style="list-style-type: none"> <li>Variations or exemptions no longer needed since TC MCL is no longer effective</li> </ul> <p><i>Section 141.63(e)</i></p> <ul style="list-style-type: none"> <li>Cross connection control added to the BAT Distribution system maintenance activities</li> <li>Updated filtration (SW) and disinfection (SW and GW) BAT to include Subparts P (IESWTR), T (LT1), W (LT2) and S (GWR)</li> </ul>



# Planned Guidance – New and Revised

- Draft Assessment and Corrective Action Guidance Manual (available for public comment – August 2010)
- Revised Total Coliform Rule: A Handbook for Small Noncommunity Water Systems serving 1,000 persons or fewer
- A Small Systems Guide to the Revised Total Coliform Rule (for CWS serving 3,300 or fewer persons)
- Revised Total Coliform Rule: A Handbook for Small Noncommunity Water Systems serving less than 3,300 persons
- Revised Total Coliform Rule: A Quick Reference Guide
- EPA's Interactive Sampling Guide



# Assessment and Corrective Action Guidance

- Draft for comment is posted at  
<http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/regulation.cfm>
- Contains a description of the proposed RTCR and guidance on:
  - Conducting assessments
  - Qualifications of assessors
  - Common causes of coliform contamination and common corrective actions
- Also contains sample assessment forms and examples of completed assessments



# Questions?

# Lead and Copper Rule Long-Term Revisions

# History

- ▣ Lead and Copper Rule
  - 6/7/91
- ▣ LCR Minor Revisions
  - 1/12/00
- ▣ LCR Minor Corrections
  - 6/29/04
- ▣ LCR Short-term Revisions
  - 10/10/07
- ▣ LCR Long-term Revisions
  - ???

# Timeline

- ▣ Option selection
  - Early May
- ▣ Final Agency Review
  - 8/31/11
- ▣ Proposal
  - 4/12
- ▣ Final
  - Late '13/early '14

# The Main Issues

- ▣ Sample site selection criteria
- ▣ PE for copper
- ▣ Water quality parameters
- ▣ Lead in schools and childcare facilities
- ▣ Lead service line replacement
- ▣ Tap sampling procedure
- ▣ General rule language changes

# Sample site selection criteria

- ▣ Current site selection is lead focused
  - May miss high copper sites
  - New copper installations usually produces highest copper results
- ▣ Should site selection be updated to reflect current conditions?

# PE for copper

- ▣ No current PE requirements for copper
  - Should there be?
- ▣ Copper health effects
  - Acute and chronic effects
    - ▣ Acute effects generally only at levels several times higher than AL
    - ▣ Chronic concerns generally only affect small subpopulation (Wilson's disease and other with liver problems)
- ▣ Should PE be system-wide or just new construction?

# Water quality parameters

- ▣ Possibly the most complex and least understood part of the rule
- ▣ Many different options discussed
- ▣ Hope to...
  - Reduce complexity
  - Increase state flexibility
  - Synchronize Pb/CU and WQP monitoring
  - Increase allowable excursion time frame

# Lead in schools and childcare facilities

- ▣ Infants and children most susceptible sub-population
- ▣ Should the LCR be the vehicle to reduce lead levels in these facilities?
- ▣ LCR designed to assess corrosivity of water and a system's ability to address it

# Lead service line replacement

- ▣ Very controversial
- ▣ Many options being considered
- ▣ Not much evidence that partial LSL replacement is effective
  - Could make levels worse in some instances
- ▣ Systems have no control over homeowner's portion of LSL

# Tap sampling procedure

- ▣ Inconsistencies nation-wide on tap sampling instructions
  - Concerns that samplers are doing things other customers not doing
    - ▣ Flushing line the night before
    - ▣ Removing or cleaning aerator
  - May allow certain practices if it's also recommended in CCR so all customers can follow

# General rule language changes

- ▣ Deleting obsolete dates
- ▣ Changes in reported 90<sup>th</sup>% values for states
- ▣ Removing secondary MCL for pH
- ▣ Allowances for NTNCWSs with 100% POU's
- ▣ Update tiering info with regards to water softeners when insufficient # of tier 1 and 2 sites

QUESTIONS?