

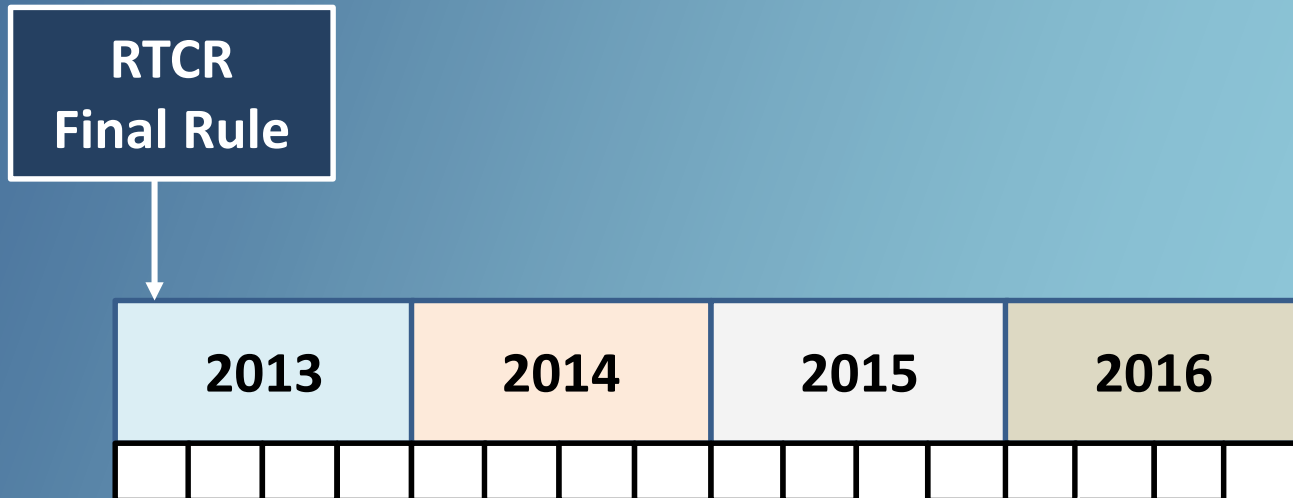
Revised Total Coliform Rule (RTCR)



TCR refresher

- Rule in place for 25 years
- The purpose is to protect water systems from pathogenic organisms
- Focus is on sampling and public notification
- Total coliform positives given too much weight
- Positive results don't require corrective action

RTCR Timeline and Applicability



Applies to all PWSs

- CWS & NCWS (transients & Non-transients)
- GW & SW systems
- Any size population served

40 CFR 141.851(b)

PWSs must comply
starting
April 1, 2016



RTCR Purpose

- Improve public health protection by reducing the pathways through which fecal contamination and pathogens can enter the distribution system
- RTCR objectives:
 - Evaluate effectiveness of treatment
 - Determine integrity of distribution system
 - Signal possible presence of microbial contamination



In Brief: What are the RTCR Requirements PWSs Need to Comply with?

NEW !!!

3. Find And Fix (Level 1 & Level 2 Assessments and corrective actions)

Seasonal System Start-up Procedures (applicable to some PWS)

2. Monitoring

4. Reporting and Recordkeeping

1. Contaminant Levels (MCLG & MCL)

5. Violations, Public Notification, and Consumer Confidence Reports



Implications of new rule

- Systems serving <4,101 people must make minor modifications to site sampling plan
 - **Submit to EPA by 3/31/16**
- Systems not sampling monthly will have to switch to monthly
- Seasonal systems have to develop start-up plan for EPA approval
- Systems will conduct level 1 assessments as needed

Maximum Contaminant Levels (MCL)

Triggering an *E. coli* MCL violation:

- **Combination of EC+ and TC+ results** between the routine and repeat results
- **EC+ routine sample with insufficient repeat samples**
- **Failure to test for EC** when any repeat sample is TC+

Notifying EPA and BWNs

- *E. coli* positive
 - Notify EPA ASAP, at least by end of day
- Multiple routine *E. coli* positives
 - Likely require precautionary boil water notice until repeat results are available
- Confirmed *E. coli* results (MCL violation)
 - Boil water notice required



Treatment Technique (TT) Triggers



**Level 1 and Level 2
Assessments**



Purpose of Assessments

- RTCR requires PWSs to investigate the system when monitoring results show the system may be vulnerable to contamination and correct any “sanitary defects” identified
- Systems must conduct a basic assessment (Level 1) or a more detailed assessment by a qualified party (Level 2) depending on the severity and frequency of contamination
 - Failure to assess and/or correct is a Treatment Technique (TT) violation



Elements of Assessments

At a minimum, assessment must include review and identification of:

1. Events that happened that could create impaired water quality
2. Changes in distribution system O&M that may affect distributed water quality, including water storage
3. Source and treatment considerations that bear on distributed water quality
4. Existing water quality monitoring data
5. Inadequacies in sample sites, sampling protocol, and sample processing

Treatment Technique:

Assessments and Corrective Actions

- Conduct a Level 1 or Level 2 assessment of the system when certain conditions occur
- Any sanitary defect found must be corrected within required timeframe
- Completed assessment form must be submitted to EPA within 30 days of learning the trigger

Treatment Technique

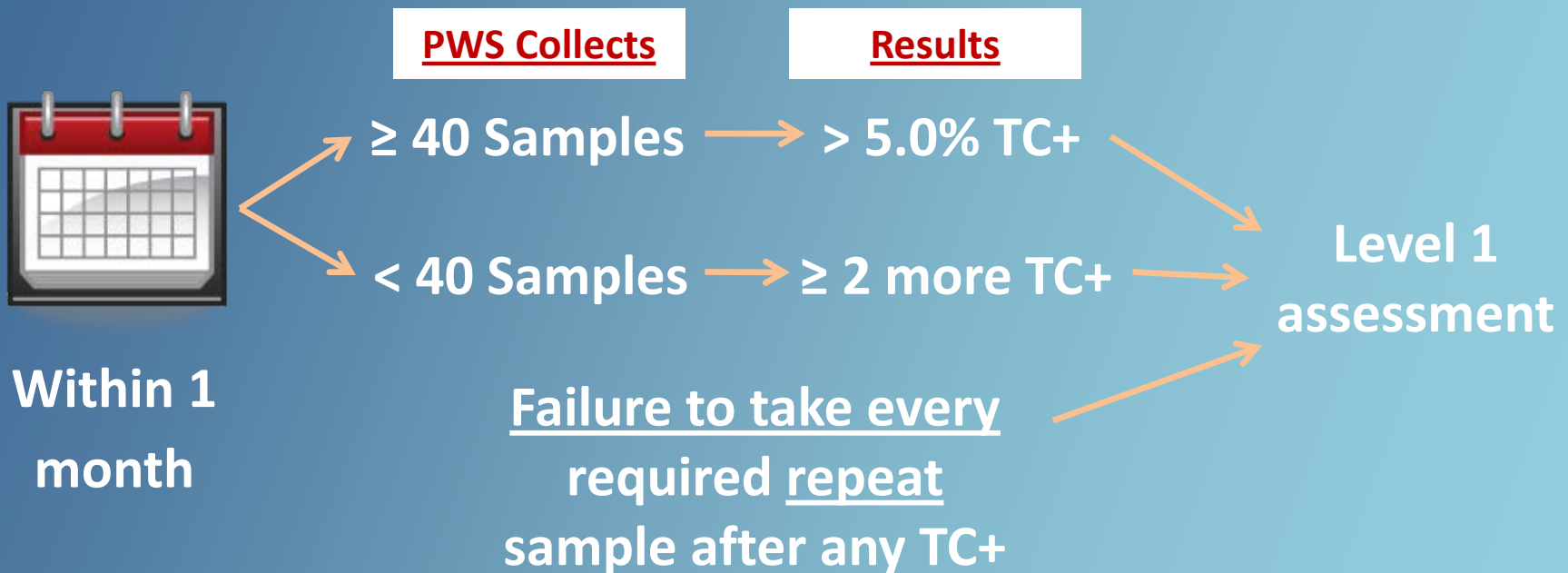
Level 1 Assessments & Corrective Action

Level 1 Assessment

- Conducted by the PWS or EPA approved entity
- A basic examination of the source water, treatment, distribution system and relevant operational practices
- PWS must fix all sanitary defects found

Treatment Technique Trigger: Level 1 Assessment

Must consider all compliance samples (total number of routine & repeat samples) to determine Level 1 assessment trigger



Treatment Technique

Level 2 Assessments & Corrective Action

Level 2 Assessment

- Generally conducted by EPA or EPA approved entity
- A more in-depth examination of the source water, treatment, distribution system and relevant operational practices
- PWS must fix all sanitary defects found

Treatment Technique

Level 2 Assessments & Corrective Action



PWS has:

- Second Level 1 trigger within a rolling 12-month period
 - If 1st level 1 identifies problem(s) which are then fixed prior to 2nd level 1, only level 1 required 2nd time
- *E. coli* MCL violation

Key Points to Remember

- Be prepared for a possible assessment in the future
 - Be familiar with the forms and required submittals. Check with EPA.
 - Develop/continue good recordkeeping of results and activity
 - (line breaks, customer complaints, unusual test results, etc.)

Key Points to Remember

- **Within 30 days of learning about the trigger:**
 - **Conduct an assessment**
 - **Correct any sanitary defects found (if not possible within 30 days, on approved schedule)**
 - **Submit completed assessment form**

Treatment Technique

Seasonal System Start-up Procedures

For PWS that start-up and shutdown during the operating season, these PWS are required to:

- Complete EPA-approved seasonal system start-up procedures prior to serving water to the public
- Submit certification form about completion of start-up procedures BEFORE water is served to the public
- Start up procedures will vary by system and be based on level of shutdown (e.g. did system maintain pressure)



Examples of Start-up Procedures

- Disinfection and Flushing
- Sampling for total coliform/*E. coli*
- Minimum disinfectant residual in distribution system
- Site visit by EPA or EPA-approved third party
- Verification that any current or historical sanitary defects from previous operational period have been corrected



Reporting

PWSs are required to report the following within a required timeframe:

- Monitoring results: **10th day of next month**
- EC+ routine sample: **end of day**
- EC MCL violation: **end of day**
- Treatment technique violation: **end of next business day**
- Completed assessment form: **30 days from trigger**
- Completed corrective action: **30 days or EPA determined**
- Certification of completion of EPA-approved start-up procedures for seasonal systems: **prior to serving water**

Recordkeeping

PWSs are required to keep records of the following within a required timeframe:

- **Monitoring results**
- **Assessment forms and documentation of corrective actions completed**
- **Repeat samples taken that meets State criteria for extension of 24-hour period for collection**
- **Copies of PN issued**
- **Certifications**
- **Sample siting plans**

Violations, PN, and CCR

Violation	Tier of Public Notification
<i>E. coli</i> MCL Violation	Tier 1
Treatment Technique Violation	Tier 2
Monitoring Violation	Tier 3
Reporting Violation	Tier 3

- **CWSs are also required to issue CCRs. Some compliance / non-compliance activities under the RTCR must be included in the CCR.**

Tier 1 PN: *E. Coli* MCL Violations

E. Coli MCL Violation Description	
Routine sample	Repeat sample
(1) TC+	EC+
(2) EC+	TC+
(3) EC+ routine	Fails to take <u>all</u> required repeat samples
(4) TC+	TC+ (but not analyzed for <i>E. coli</i>)

Tier 2 PN: Treatment Technique Violations

- Failure to conduct a Level 1 or Level 2 assessment within 30 days of learning of the trigger
- Failure to correct all sanitary defects from a Level 1 or Level 2 assessment within 30 days of learning of the trigger or approved timeframe by the state
- Failure of a seasonal system to complete state-approved start-up procedure prior to serving water to public

Tier 3 PN: Monitoring Violations

Monitoring Violation

- Failure to collect all required routine or additional routine samples in a compliance period
- Failure to test for *E. coli* after a TC+ routine sample

Tier 3 PN: Reporting Violations

Reporting Violation

- Failure to submit monitoring report or completed assessment form after properly conducting monitoring or assessment
- Failure to notify EPA of an EC+ sample in a timely manner
- Failure of a seasonal system to submit certification of completion of State-approved start-up procedure

Let's compare – TCR vs. RTCR
“Exploring The Basics”

Additional Routine Monitoring

TCR	RTCRCR
<p>PWS taking < 5 routine samples per month (PWS serving $\leq 4,100$):</p> <ul style="list-style-type: none">• Must take at least 5 routine samples in the month after a TC+ sample.	<p><u>No longer a requirement</u> for systems that monitor at least monthly.</p> <p>PWSs taking samples less frequently than once per month (i.e., quarterly or annually):</p> <ul style="list-style-type: none">• Must <u>take at least 3 routine samples in a month after a TC+ sample.</u>

Repeat Monitoring – # of Samples

TCR	RTCRCR
PWS serving $\leq 1,000$: 4 repeat samples for every TC+ routine sample.	<ul style="list-style-type: none">All PWSs <u>must take 3 repeat samples</u> for every TC+ routine sample regardless of whether PWS has already triggered an assessment.Must <u>take additional repeats</u> for TC+ repeat samples <u>until trigger an assessment</u> and system notifies the state.
PWS serving $> 1,000$: 3 repeat samples for every TC+ routine sample.	
<ul style="list-style-type: none">Must <u>take additional repeats</u> for TC+ repeat samples <u>until trigger an MCL violation</u> and the system notifies the state.	

40 CFR 141.21(b) & 141.858(a)

Minimum number of samples required each month, based on population

Systems over 4,900 must spread sampling throughout month (or if system takes samples at same site)

Population Served	Minimum monthly samples
25 – 1,000	1
1,001 – 2,500	2
2,501 – 3,300	3
3,301 – 4,100	4
4,101 – 4,900	5
4,901 – 5,800	6
5,801 – 6,700	7
6,701 – 7,600	8
7,601 – 8,500	9
8,501 – 12,900	10
12,901 – 17,200	15
17,201 – 21,500	20
21,501 – 25,000	25
25,001 – 33,000	30
33,001 – 41,000	40

Conclusion

looks like you've got
elevated levels of
fecal coliform bac-
teria in your well

well, depends
how much you
like feces

is that
bad?





Questions Regarding the RTCR?

- TCR Website:
 - <http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/index.cfm>
- RTCR Website:
 - http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/regulation_revisions.cfm
- The Feb. 2013 Final RTCR can be found at this website, along with the RTCR Quick Reference Guide (QRG).



RTCR Implementation Products

- **RTCR Quick Reference Guide (QRG)**
 - <http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/upload/epa815b13001.pdf>
- **RTCR Implementation Guide--Interim Final**
 - <http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/upload/epa816r14004.pdf>
- **RTCR Assessments and Corrective Actions Guidance Manual: Interim Final**
 - <http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/upload/epa815r14006.pdf>
- **RTCR Small Systems Guide Serving $1000 \leq$ persons**
 - Under development

