

# Insight into the Revised Total Coliform Rule (RTCR)

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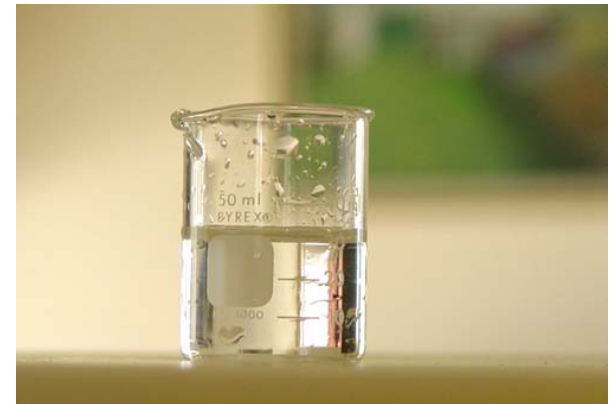
## RTCR in General [§141.851]

- TCR promulgated in 1989
- Applies to all public water systems (PWS)
  - Maximum Contaminant Level (MCL)
  - Treatment Technique Trigger (TTT)
- Beginning **April 1, 2016**, unless otherwise specified.
- Current TCR in effect through **March 31, 2016** [§ 141.21/63]
- Sample siting plan not later than **March 31, 2016**
- Beginning **CY 2017**, annual site visit; if monitoring annually



## Methods & Lab Certification [§141.852]

- Volume of 100 mL for analysis, regardless of method.
- Sample incubation maximum 30 hours.
- Absence/Presence
- Total coliforms and *E. coli* (*EC*).



## General Monitoring for All PWSs [§141.853]

### Sample Siting Plans

- All PWSs must develop a siting plan by **March 31, 2016**
- Representative of the distribution system

### Total Coliform Sample Collection

- Routine, repeats, & GWR
- Routines collected at regular intervals during the month  
*GWSs  $\leq 4,900$ , all on same day*
- Collect minimum, even with *EC* MCL or TT violation



## General Monitoring for All PWSs [cont'd]

### Alternate Repeat Monitoring Locations

- Written State approval
- Representative of distribution
- **Potential contamination pathway**
- **State may modify/alternative locations as needed**
- GWS  $\leq 1,000$  may select locations differentiating
  - **Source contamination**
  - **Distribution contamination**  
*e.g., GWS with a single well may use triggered GWR sample as a repeat*



## General Monitoring for All PWSs [cont'd]

### Seasonal Systems

- Site-specific considerations for monitoring timing  
*e.g., during highest demand or vulnerability*
- Start-up procedure
  - Sampling prior to serving public
  - Exempt, if distribution pressurized when closed
- *Monitoring < monthly, must sample during vulnerable period*



## General Monitoring for All PWSs [cont'd]

### Invalidation of Total Coliform Samples

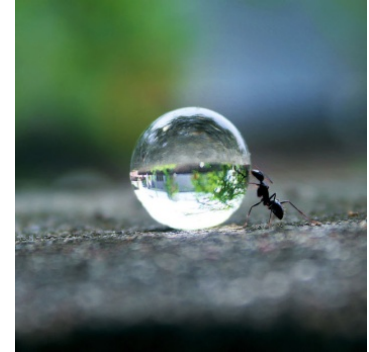
- Invalidated samples do not count toward monitoring
- May invalidate TC+ sample *only if*
  - Improper laboratory analysis, re-sample 24 hrs, & analyze until valid
  - Non-distribution plumbing problem (20T+, AO-)
  - Circumstances/conditions do not reflect general water quality
- Cannot invalidate
  - Solely because all repeats were negative
  - If system has only one valid sample tap
- Collect all required repeat samples to determine TTT
- Documented in writing & signed by supervisor



## Routine Monitoring, Noncommunity GWSs $\leq 1,000$ [§141.854]

### Transition to RTCR

- Previous monitoring, unless triggered to increase
- May reduce monitoring, quarterly to annually *if*:
  - Well-operated GWS
  - System has a clean compliance history, min. 12 mos.
  - Most recent SS: no SDs, protected source, meets construction standards
  - Site visit within the last 12 mos. indicates any SDs were corrected
- Annual Site Visit for Systems Monitoring Annually
  - **Beginning later than CY2017, includes seasonal systems**
  - Initial & **recurring** annual site visit = Level 2 assessment
  - Required Class 1 SS may be substituted



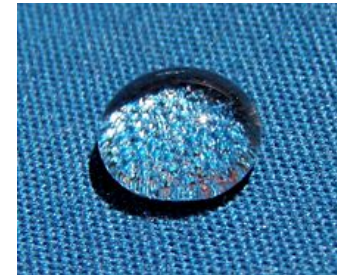


## Routine Monitoring, Noncommunity GWSs $\leq 1,000$ [cont'd]

### Increased Monitoring for Quarterly or Annual Systems

*Must begin monthly monitoring following month if:*

- *E. coli* MCL violation
- Coliform treatment technique violation
- Level 2 or 2-Level 1 assessments in rolling 12-mo.
- 2 Monitoring Violations OR (1 MV + 1-L1A) in rolling 12-mo.



Annual system with 1 monitoring violation must begin quarterly

### Make-up Samples

*To retain quarterly status for TNCs missing a quarter:*

- End of monitoring period following missed period
- Different week than current routine, as soon as possible

## Routine Monitoring, Noncommunity GWSs $\leq 1,000$ [cont'd]

### Requirements to Return to Quarterly

*Within the last 12 months, the system must meet all of the following criteria:*

- SS or a site visit or a Level 2 assessment by approved party
- Free of SDs & protected water source
- Clean compliance history for a minimum of 12 mo.



### Requirements to Return to Annual *Quarterly requirements & additional below:*

- Annual site visit (e.g. a Level 2 Assessment) & correct all SDs
- Have or adopt 1 or more of the following as a barrier to contamination:
  - Cross-connection control plan
  - A State-certified operator/circuit rider
  - Continuous disinfection/residual
  - 4-log viral removal/inactivation
  - Other equivalent enhancements?

## Routine Monitoring, Noncommunity GWSs $\leq 1,000$ [cont'd]

### Monitoring Frequency

- Monitor according to schedules effect on March 31, 2016
- With “trigger” 1/month (below)

### Return to Routine Monthly

- *E. coli* MCL violation
- Coliform treatment technique violation
- Level 2 or 2-Level 1 assessments in a rolling 12-mo.
- **2 monitoring violations in a rolling 12 mo.**

### Criteria for Reduced Monitoring

- State-certified operator & clean compliance history, min. 12 mo.
- Most recent SS shows the system meets criteria, including enhancement



## Routine Monitoring Subpart H Systems [§141.856]

### Unfiltered SWTR Systems, Including GWUDI

- Systems may not monitor less than monthly
- Collect at least 1 sample:
  - Near the first service connection
  - Each day source water exceeds 1 NTU
  - Within 24 hours of the first exceedance
- **Must be included in determining TTT exceedance**





## Repeat Monitoring Requirements [§141.858]

### Same-month repeat monitoring

- If a routine is TC+, must collect repeats within 24 hours of being notified
- **No fewer than 3 repeat samples for each TC+**
- May extend the 24-hour limit, specifying time limit
- Cannot waive the requirement collect same-month repeats
- Collect all repeats same day, systems with a single service connection may:
  - **Collect over a three-day period**
  - **A larger volume repeat, total at least 300 mL**
- An additional set of repeats must be collected if 1 or more repeats are TC+
- Must continue to collect additional sets until ND or TTT
- **Must use all routines & repeats results, not invalidated, to determine TTT**



## Repeat Monitoring Requirements [§141.858]

Next-month monitoring following a TC+ [systems fewer than 3,301]

- With/without a L1 TTT, collect at least **3 routines** next month (at regular intervals or single day if from different sites)
- **Must use additional routine results to determine TTT**



Waive requirement for 3 next-month routines

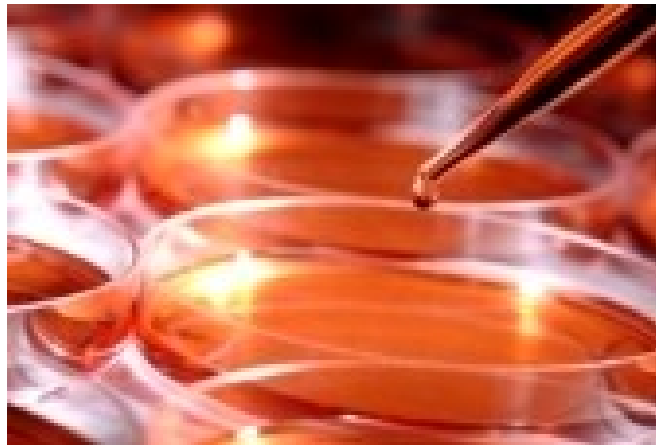
- Perform site visit before the end of the next month
- Determine if additional monitoring and/or corrective action needed:
  - Why the sample was TC+
  - Verify problem was/will be corrected before end of the next month
  - Document the decision (approved and signed by supervisor):  
On file audits & public; specific cause TC+; correction action taken
  - May not waive solely on the grounds that all repeats TC-  
*Cannot be done by an employee of the system*

## *E. coli* Testing Requirements [§141.858]

### *Escherichia coli (E. coli)*

- If any routine or repeat sample is TC+, must analyze for *E. coli*
- If *E. coli* is present, system must notify the State by EoB on day notified
- The State may forgo *E. coli* testing on a TC+, if assumes that EC+

*The system must notify the State as if confirmed EC+*

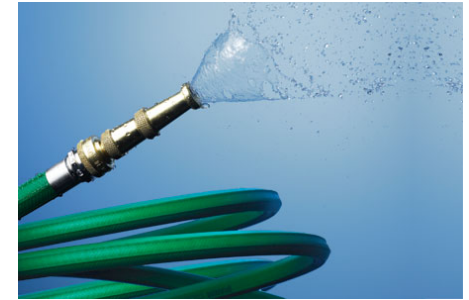




## Coliform Treatment Technique Triggers (TTT) [§ 141.859]

### Level 1 TTT

- 40 or > samples/month, exceeds 5.0% TC+ that month
- < 40 samples/month, 2 or > TC+ in the same month
- Fail to take every required [same-month] repeat after any TC+



### Level 2 TTT

- An *E. coli* MCL violation
- A second Level 1 trigger, within a rolling 12-month period, *unless*:
  - Determined what caused the first Level 1 TTT
  - Problem was corrected
- Systems monitoring annually, a Level 1 TTT in two consecutive years

# Assessment Requirements for Protection Against Potential Fecal Contamination [§ 141.859]

## Assessment Requirements

- Systems ensures Level 1 & 2 assessments conducted, as soon as practical *identify SDs & coliform monitoring defects*
- Systems ensures that the assessor evaluates minimum elements that include:
  - Review sample sites & sampling protocol
  - Atypical events affecting distributed water quality
  - Distribution maintenance changes (water storage)
  - Source & treatment considerations (small GWS)
  - Existing “water quality” monitoring data



*The system must conduct the assessment consistent with any State directives that tailor specific assessment elements to system characteristics*

# Assessment Requirements for Protection Against Potential Fecal Contamination [cont'd]

## Assessment Form Submission

- The system must describe in the completed form:
  - Sanitary defects detected
  - Corrective actions completed
  - A proposed timetable for any corrective actions not already completed
  - **Alternatively, the assessment form may also note no SDs identified**
- Completed form submitted within 30 days after system learns of TTT



# Assessment Requirements for Protection Against Potential Fecal Contamination [cont'd]

## Assessment Distinctions

- Level 1

Complete a Level 1 assessment as soon as practical after Level 1 TTT

- Level 2

- In the case of an *E. coli* MCL violation, the system must comply with any expedited actions or additional actions required by the State (County)
- System must ensure that a Level 2 assessment is completed by the State or by a party approved by the State

*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*



## Assessment Requirements for Protection Against Potential Fecal Contamination [cont'd]

### Assessment Review, Consultation, & Corrective Action

- Consult with the system if review is not sufficient
- Either may request a consultation during the assessment (method of accomplishment, appropriate time-frame, etc.)
- If State requires, system must submit a revised assessment form (agreed-upon schedule not to exceed 30 days from date consultation)
- Upon completion and submission, determine if TTT cause was identified (if so, is problem corrected or schedule for correcting problem)
- Systems must correct SDs found (Level 1 or 2) (not completed: compliance timetable & notification)



## Violations [§141.860]

### *E. coli* MCL

- EC+ repeat following TC+ routine
- TC+ repeat following EC+ routine
- System fails to collect all required repeats following EC+ routine
- System fails to “test” for *E. coli* when any repeat TC+



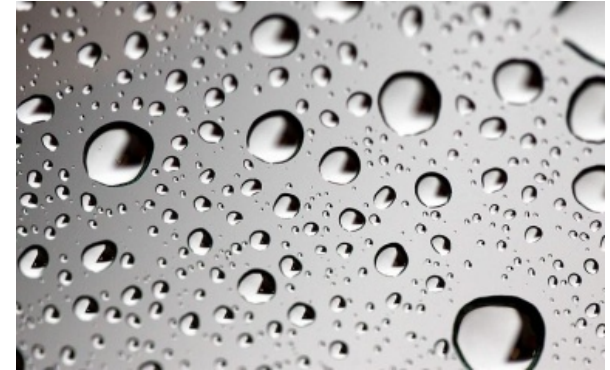
### Treatment Technique

- Exceeding TTT & failing to conduct assessment or corrective actions
- Seasonal system fails to complete start-up procedure

## Violations [cont'd]

### Monitoring

- Failure to complete routine sampling
- Failure to “analyze” for E. coli following TC+ routine



### Reporting

- Failure to submit a monitoring report
- Failure to submit a completed assessment form in a timely manner
- Failure (system) to notify the State following an EC+ by EoB

## Reporting and Recordkeeping [§141.861]

### Reporting (Tier3?)

- *E. coli*: System must notify State of EC+ or violation by EoB & notify the public
- Treatment Technique
  - Report violation to the State EoB next day
  - Submit the assessment report within 30 days
  - Notify each scheduled corrective action not/completed
- Failure of monitoring requirements - report within 10 days & notify public
- Failure of start-up procedure for seasonal system





## Reporting and Recordkeeping [cont'd]



### Recordkeeping

- System must maintain, for State review,
  - Any assessment form, regardless of who conducts assessment
  - Documentation of corrective actions completed
  - Other available summary documentation of the SDs & corrective actions
  - Retain not less than five years after
- System must maintain a record of TC+ repeats meeting criteria for extension of 24-hour period for collecting repeats



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**40 CFR 141: Subpart Y—Revised Total Coliform Rule**