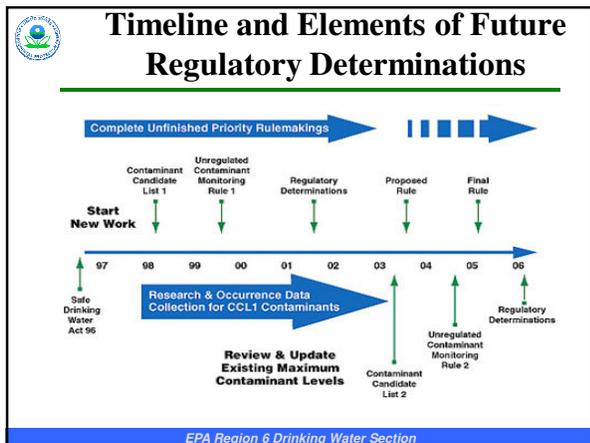


Upcoming Drinking Water Regulations

Louisiana Water Quality Technology Conference
December 2010

Blake Atkins, Chief
Drinking Water Section
EPA Region 6



Future Regulation Determinations

- CCL3 published October 2009
- Draft UCMR3 to be published January 2011
- Regulation Determination in 2012, based on UCMR2
- Final UCMR3 in 2012
- UCMR3 monitoring in 2013-2015

EPA Region 6 Drinking Water Section



National Primary Drinking Water Regs 6-year Review

- Required to review and, if appropriate, revise existing NPDWRs every six years. Any revision shall maintain or provide for greater protection of public health
- Completed 1st Review in 2003; Reviewed 69 NPDWRs and made decision to revise Total Coliform Rule (TCR)
- Completing 2nd Review on 71 NPDWRs
 - Expect to publish review results soon

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EPA Region 6 Drinking Water Section



Types of Contaminants on the Final CCL 3

- 11 Disinfection byproducts
 - i.e., NDMA, aldehydes, halogenated compounds
- Perfluorinated contaminants (PFOA & PFOS)
- 9 Hormones and an antibiotic
 - Considered occurrence in water and health reference level.
- 43 Pesticides and/or degradates
 - Detected occurrence, modeled concentrations and application considered
- 12 Pathogens
 - Identified 12 waterborne pathogens that have known or anticipated occurrence in PWS
- 3 Cyanotoxins

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EPA Region 6 Drinking Water Section



CCL 3 104 Chemicals and 12 Microbes

1,1,1,2-Tetrachloroethane	alpha-Hexachlorocyclohexane	Estrone
1,1-Dichloroethane	Aniline	Ethinyl Estradiol (17-alpha)
1,2,3-Trichloropropane	Bensulfide	Ethinyl Estradiol)
1,3-Butadiene	Benzyl chloride	Ethoprop
1,3-Dinitrobenzene	Butylated hydroxyanisole	Ethylene glycol
1,4-Dioxane	Captan	Ethylene oxide
17 alpha-Estradiol	Chlorate	Ethylene thiourea
1-Butanol	Chloromethane (Methyl chloride)	Fenamiphos
2-Methoxyethanol	Clethodim	Formaldehyde
2-Propen-1-ol	Cobalt	Germanium
3-Hydroxycarbofuran	Cumene hydroperoxide	Halon 1011 (bromochloromethane)
4,4'-Methylenedianiline	Cyanotoxins (3)	HCFC-22
Acephate	Dicrotophos	Hexane
Acetaldehyde	Dimethipin	Hydrazine
Acetamide	Dimethoate	Mestranol
Acetochlor	Disulfoton	Methamidophos
Acetochlor ethanesulfonic acid (ESA)	Diuron	Methyl bromide (Bromomethane)
Acetochlor oxanilic acid (OA)	Equilenin	Methyl tert-butyl ether
Acrolein	Equilin	Metolachlor
Alachlor ethanesulfonic acid (ESA)	Erythromycin	Metolachlor ethanesulfonic acid (ESA)
Alachlor oxanilic acid (OA)	Estradiol (17-beta estradiol)	
	Estriol	

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EPA Region 6 Drinking Water Section



CCL 3 (cont.)

104 Chemicals and 12 Microbes

Metolachlor oxanilic acid (OA) Molinate Molybdenum Nitrobenzene Nitroglycerin N-Methyl-2-pyrrolidone N-Nitrosodiethylamine (NDEA) N-nitrosodimethylamine (NDMA) N-Nitroso-di-n-propylamine (NDPA) N-Nitrosodiphenylamine N-nitrosopyrrolidine (NPYR) Norethindrone (19-Norethisterone) n-Propylbenzene o-Toluidine Oxirane, methyl- Oxydemeton-methyl Oxyfluorfen Perchlorate Perfluorooctane sulfonic acid	Perfluorooctanoic acid (PFOA) Permethrin Profenofos Quinoline RDX sec-Butylbenzene Strontium Tebuconazole Tebufenozide Tellurium Terbufos Terbufos sulfone Thiodicarb Thiophanate-methyl Toluene diisocyanate Tribufos Triethylamine Triphenyltin hydroxide (TPTH) Urethane Vanadium Vinclozolin Ziram	Adenovirus Caliciviruses <i>Campylobacter jejuni</i> Enterovirus <i>Escherichia coli</i> (0157) <i>Helicobacter pylori</i> Hepatitis A virus <i>Legionella pneumophila</i> <i>Mycobacterium avium</i> <i>Naegleria fowleri</i> <i>Salmonella enterica</i> <i>Shigella sonnei</i>
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EPA Region 6 Drinking Water Section



Current TCR

- Published in 1989, effective in 1990
- Only microbial drinking water regulation that applies to all PWSs, including 86,000 TNCWSs
 - One of the few rules that apply to transient PWSs
 - Rule fosters interactions between systems and the State
- Rule objectives:
 - Determine the integrity of the distribution system
 - Evaluate the effectiveness of treatment
 - Signal possible presence of fecal contamination
- Regular monitoring used to determine success in meeting water quality goals
- No requirement for assessment or corrective action

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EPA Region 6 Drinking Water Section



Current TCR (cont.)

- Sampling varies based on system type/population
 - Sampling at representative sites throughout the DS
- Repeat/additional routine samples required
 - All routine/repeat samples count toward compliance
- Reduced monitoring only for **GW** systems ≤1,000:
 - Criteria to qualify for reduced monitoring: No sanitary defects (all); no history of TC contamination with protected source (CWS)
 - No explicit criteria to remain on reduced monitoring
- Non-acute (monthly) violation
 - 40+ samples (more than 5.0% are TC(+)); <40 samples (more than one sample TC(+)); PN required within 30 days
- Acute Violation
 - *E. coli* (+) repeat; TC (+) repeat following an *E. coli* (+) routine, PN required within 24 hours

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EPA Region 6 Drinking Water Section



The Advisory Committee Process

- Committee charge: recommend revisions to the **current TCR** and consider distribution system issues.
- Met 13 times - July 2007 through September 2008
- A Technical Work Group provided technical support and data analyses to inform perspectives on the various rule recommendations that were considered
- Compiled, analyzed, and discussed:
 - TC and *E. coli* occurrence data, system inventories, violation data, state and system responses to violations, and cost information
- Deliberated on initial proposals and ideas from advisory committee members

EPA Region 6 Drinking Water Section 10



8 Core Elements - Proposed RTCR

EPA committed to propose a rule that has the same substance and effect as the elements in the AIP.

- Requires systems to investigate and correct any sanitary defects found whenever monitoring results show a system may be vulnerable to contamination.
 - Two levels of assessment depending on the severity and frequency of contamination.
 - Sanitary defect: "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"

EPA Region 6 Drinking Water Section 11



8 Core Elements - Proposed RTCR

- Establishes a Treatment Technique in place of MCL / MCLG for TC, with PN only for Treatment Technique violations (failure to conduct a required assessment or fix an identified sanitary defect)
- Keeps *E. coli* as a health indicator with an MCLG of zero and MCL similar to current TCR
- Provides criteria that well-operated ground water small systems must meet to qualify and stay on reduced monitoring
- Requires increased monitoring for high-risk small ground water systems with unacceptable compliance history

EPA Region 6 Drinking Water Section 12



8 Core Elements – Proposed RTCR

6. Monitoring requirements:
 - Keeps routine monitoring requirements for PWSs > 4,100
 - Reduces required number of additional routine samples for systems 1,001-4,100
 - For systems serving ≤ 1,000 persons
 - Reduces number of repeat/additional routine samples
 - No additional routine for PWSs monitoring once/month
 - Provides flexibility in sites for repeat samples, allows the use of dedicated sampling stations
7. Defines “seasonal systems”, requires start-up procedures and sampling during high vulnerability
8. Systems transition at their current monitoring frequency
 - State re-evaluates frequency during each sanitary survey cycle for GW systems serving ≤ 1,000 people

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EPA Region 6 Drinking Water Section



How Does It Play Out

- MCL for *E. Coli* Positives only
 - 1 Routine Positive + 1 Repeat Positive, or 1 Routine Positive + not all Repeats
- Positive TC results or lack of repeat monitoring (w/o *E. Coli*) triggers an assessment
 - Two levels of assessment based on severity and frequency.
- Assessment findings must be addressed.

EPA Region 6 Drinking Water Section



Rule Construct

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

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EPA Region 6 Drinking Water Section



Level 1 Assessment

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

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EPA Region 6 Drinking Water Section



Level 2 Assessment

Current TCR	Proposed RTCR
None required	<p><small>Section 141.859</small></p> <p>Triggers:</p> <ul style="list-style-type: none"> • Violation of the MCL for <i>E. coli</i> <ol style="list-style-type: none"> 1. <i>E. coli</i> (+) repeat sample following a TC (+) routine sample. 2. TC (+) repeat sample following an <i>E. coli</i> (+) routine sample. 3. Failure to take all required repeat samples following an <i>E. coli</i> (+) routine sample. 4. Failure to test for <i>E. coli</i> when any repeat sample tests TC(+) • Two Level 1 triggers in a 12 month period • For NCWS (GW) serving ≤1,000 on annual monitoring, a Level 1 trigger in each of 2 consecutive years <p>Level 2 Assessment:</p> <ul style="list-style-type: none"> • Conducted by the State/approved third party (could be the PWS if qualified and approved by the State)

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EPA Region 6 Drinking Water Section



Assessment Elements – Levels 1 and 2

Current TCR	Proposed RTCR
None required	<p><small>Section 141.859</small></p> <ul style="list-style-type: none"> • 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 • Existing water quality monitoring data • Inadequacies in sample sites, sampling protocol, and sample processing

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EPA Region 6 Drinking Water Section



Corrective Action

Current TCR	Proposed RTCR
None required	<p><small>Section 141.859</small></p> <ul style="list-style-type: none"> •The PWS must correct all sanitary defects found during the assessment •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 •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 •The form may also indicate that no sanitary defects were found •The State determines if the assessment is sufficient

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Seasonal Systems

Current TCR	Proposed RTCR
Seasonal PWS has the same requirements as other systems of the same size and type	<p><small>Section 141.851, 141.854(i), 141.856(a)(4), 141.857(a)(4)</small></p> <ul style="list-style-type: none"> •Seasonal PWS is defined as a non-community system that operates 3 or fewer calendar quarters per year •Seasonal PWS must demonstrate completion of a State-approved start up procedure •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) •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

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EPA Region 6 Drinking Water Section



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

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

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EPA Region 6 Drinking Water Section



Burden Decreases & Efficiencies

- Less tracking of PN and responding to inquiries about it
- GWR will lead to correction of deficiencies, and therefore fewer TC(+) and violations
- GWR requirements can be used to meet the RTCR requirements
- The sanitary survey can be used to review RTCR monitoring requirements and substitute as a Level 2 assessment
- The RTCR will result in better system performance over time, leading to fewer TC(+) and violations
- Some assessment and corrective action are being done already; the burden increase from the RTCR will not be as great as it might seem

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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

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Assessment and Corrective Action Guidance

- 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

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