

***U.S. Environmental Protection Agency***  
**Total Coliform Rule / Distribution System**  
**Advisory Committee Meeting**

May 21-22, 2008

The Churchill Hotel  
1914 Connecticut Ave., NW  
Washington, DC 20009

**Final Meeting Summary**

**Meeting Objectives/Desired Outcomes:**

- *Discuss options for revising the Total Coliform Rule, including rule construct, monitoring provisions, system categories, action levels, investigation and follow-up, and public notification, etc;*
- *Integrate proposed elements into a single draft package (possibly with variations on some elements);*
- *Discuss and reach preliminary agreement on priorities and coordination mechanisms for research and information collection concerning distribution systems; and*
- *Discuss next steps in the context of the Committee's overall time table.*

**I. Welcome, Introduction, Meeting Objectives and Agenda**

Crystal Rodgers-Jenkins, the Designated Federal Officer, opened the meeting and welcomed the members and meeting attendees to the eighth meeting of the Total Coliform Rule / Distribution System Advisory Committee (TCRDSAC).<sup>1</sup>

Gail Bingham, the facilitator from RESOLVE, briefly reviewed the objectives of the meeting, the meeting agenda, and the meeting materials. She noted that the goal of the meeting was to work towards a single option Agreement in Principle (AIP) for revising the Total Coliform Rule (TCR) and for recommendations on research and information collection needs.

**II. February Meeting Summaries**

The Advisory Committee reviewed suggested edits to the February meeting summary provided in their binders.<sup>2</sup> The Committee approved the summary.

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<sup>1</sup> Please see Attachment A for the Total Coliform Rule / Distribution System Federal Advisory Committee roster. Please see attachment B for a copy of the meeting agenda. Please see Attachment C for a list of the meeting attendees.

<sup>2</sup> Please see Attachment D for a copy of the February TCRDSAC meeting summary.

### III. Overview of Current Option Packages

Doug Owen, Malcolm Pirnie, gave a presentation to the Committee that summarized the option packages developed by groups of Advisory Committee members and alternates in preparation for the May meeting.<sup>3</sup> In his summary, Mr. Owen noted the key changes from the current TCR, what would remain unchanged, commonalities and variations among the initial options, and what has not yet been addressed.

Ms. Bingham then invited a member from each of the groups that developed option packages to provide the Committee with a brief overview of the rationale for their option.<sup>4</sup> A summary of the key points from each overview follows:

TCR Option A (current Total Coliform Rule.)

TCR Option B (developed by representatives from the Association of Metropolitan Water Agencies and American Water Works Association):

- Focus attention and resources on systems with problems
- Reward systems that are performing well
- Focus more on assessment and corrective action and less on monitoring
- Focus assessment on sanitary defects

TCR Option C (developed by representatives from Clean Water Action and the Natural Resources Defense Council):

- Emphasize finding and fixing problems
- Stress the importance of site visits and system inspections
- Take monitoring and reporting violations seriously
- Incorporate incentives for cross-connection control programs into rule
- Allow annual monitoring only in rare circumstances, if ever

TCR Option D (developed by the EPA):

- Focus on a meaningful monitoring strategy that contributes to reduction in risk
- Use monitoring results to identify systems that would benefit from closer attention
- Improve implementation of the rule; find right balance of flexibility and complexity
- Establish prevention-oriented rule

TCR Option E (developed by state representatives):

- Keep the rule simple and as close to current rule as possible; make changes only to improve public health
- Use total coliform (TC) as an indicator of system integrity by validating barriers
- Focus on prevention activities as opposed to reactive activities

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<sup>3</sup> Please see Attachment E for a copy of Mr. Owen's presentation "Overview of Current Option Packages."

<sup>4</sup> Copies of the TCR options developed by Advisory Committee members are available from the Designated Federal Officer.

- Place a priority on correction of problems
- Allow flexibility to address system-specific issues
- Emphasize meaningful and timely public notification

TCR option F (developed by representatives from the National Rural Water Association):

- (Same points listed under Option B)
- Focus on MCL and public notification for *E. coli* not for TC
- Improve current rule without making it more burdensome or more costly to any party
- Encourage the system to take responsibility for its actions rather than the State dictating actions

During the discussion of the option packages, one member asked if the AIP would change as it moves through the regulatory process. In response, a member explained that EPA will propose a rule consistent with the AIP. If new issues arise or parts of the rule are not fully agreed upon, EPA will solicit comments from the public that could result in differences between the AIP and the final rule. The member also noted that in the past, the Office of Management and Budget and new administrations have respected the agreements of advisory committees.

#### **IV. Presentations of Comparative Analysis of Option**

##### A. Background on Comparative Analysis of Options

On behalf of the Technical Work Group (TWG), Mr. Owen provided the Advisory Committee with an introduction to the comparative analysis performed by the TWG for the proposed options for revisions to the TCR.<sup>5</sup> The objective of this presentation was to: provide an overview of the technical presentations for this meeting; what information was available; how the analyses were constructed and why; limitations to the data and implications for what comparison data will and will not be available; summary comparisons of the proposed options; and discussion of assessment and corrective action costs.

During the discussion that followed the presentation, one member of the Advisory Committee voiced a concern that the revised rule might be more burdensome than the current rule because of increased monitoring requirements followed by assessments and corrective action requirements following a “trigger” event. Another member pointed out that most of the costs associated with the new rule are related to TC exceedances. In response to these points, other members spoke to the value of TC monitoring in determining the integrity of the distribution system and the value of proactive action based on the results of assessments in preventing waterborne disease outbreaks. An alternate to the Committee also noted that under the revised rule, any additional burden resulting from increased monitoring and follow-up actions will be targeted to those systems with the most problems.

One member raised a concern that systems with poor track records will not comply with new requirements. Another member responded that increased attention to monitoring violations, as proposed in one option, could help address this concern.

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<sup>5</sup> Please see Attachment F for a copy of Mr. Owen’s presentation “Background on Comparative Analysis of Options.”

A member of the Committee, noting that the TWG could not prepare a national estimate of corrective action costs, asked if EPA will have to develop these costs as it moves forward with the rule. The Committee's EPA representative responded that they would and noted that, in doing so, the Agency will include a description of all the uncertainties related to these estimates in the economic analysis.

#### B. Discussion of Option Packages for Community Water Systems Serving 1,000 (with analyses)

Vanessa Speight, Malcolm Pirnie, presented the results of the TWG analyses for community water systems (CWS) serving 1,000 or fewer people, including: the number of systems that would qualify for reduced monitoring under different criteria; cost estimates; and a breakdown by nine system categories.<sup>6</sup>

In response to a question from the Committee, Dr. Speight explained that the percentage of systems qualifying for reduced monitoring under different options is based on what states allow under the current rule. Several members stated that it was their assumption that more states would allow reduced monitoring under a revised rule that included incentives for actions protective of public health. Other members responded that some states might reconsider their restrictions on reduced monitoring if the criteria for reduced monitoring are stringent enough; other states likely will not. One member of the Committee noted that EPA cannot require states to allow reduced monitoring; however, the Agency could tailor the Safe Drinking Water Information System (SDWIS) to reduce the transaction costs for states to allow reduced monitoring. Other members encouraged Committee members to talk with states about the benefits of the revised rule and seek support for the reduced monitoring provisions.

One member asked that the state representatives consult their colleagues about the number of states that would consider allowing reduced monitoring in the future.

#### C. Discussion of Option Packages for Non-Community Water Systems Serving 1,000 or fewer (with analyses)

Dr. Speight then presented the Committee with the results of the TWG analyses for non-community water systems (NCWS) serving 1,000 or fewer people, including: the number of systems that would qualify for reduced monitoring under different criteria; the number of systems with TC positives, acute violations, and Level 1 triggers; cost estimates; and a breakdown by twelve system categories.<sup>7</sup>

During the discussion, one member of the Committee expressed the view that the numbers for TC positives, and the costs associated with them, are lower for options with reduced monitoring because the analysis is based on a percentage of the number of samples taken (with fewer samples resulting in fewer TC positives) rather than the vulnerability of the systems taking the samples (vulnerable systems are more likely to have TC positives). This member argued that the

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<sup>6</sup> Please see Attachment G for a copy of Dr. Speight's presentation "Discussion of Option Packages for CWS Serving < 1,000 (with analyses)."

<sup>7</sup> Please see Attachment H for a copy of Dr. Speight's presentation "Discussion of Option Packages for NCWS Serving < 1,000 (with analyses)."

numbers of TC positives would probably be similar for the all options if the analysis were only based on vulnerable systems.

#### D. Discussion of Option Packages for Community Water Systems Serving More than 1,000 (with analyses)

Dr. Speight also presented to the Committee the TWG analyses for public water systems serving more than 1,000 people, including the number of systems with TC positives, acute violations, and Level 1 triggers; cost estimates; and a breakdown by sixteen system categories.<sup>8</sup> Dr. Speight noted that none of the proposed options allow for reduced monitoring for this system size.

#### **V. Revisions to the TCR**

Over the course of the two-day meeting, the Advisory Committee discussed several provisions of a revised TCR. In some instances, the Committee developed concepts (highlighted in bold) for inclusion in a single-text option for further consideration. In other instances, the Committee asked subgroups, made up of Committee members and alternates, to develop the concepts for the AIP based on the Committee's discussions at the meeting. The following sections summarize the Committee's discussion of specific rule provisions.

##### Assessments

The Committee reviewed the work of the Assessment and Corrective Action Subgroup, formed at the last meeting, and discussed concepts including: the number of levels of assessment; the degree of effort involved for each level; the party responsible for conducting the assessment; and the triggers for each level.

*Based on the discussion, the Committee determined that the following concepts should be included in a draft single-text option for further consideration:*

- *Levels of assessment*
  - *Level One assessment: a simple self-assessment; conducted by the public water system; based on a short, one- to two-page, checklist (sample included in AIP appendix); submitted to the primacy agency*
  - *Level Two assessment: a more detailed examination of the system; conducted by public water system if system has a certified operator (with approval of primacy agency) or by third party approved by primacy agency; based on a detailed checklist (sample included in AIP appendix); submitted to the primacy agency*
- *Triggers for assessment*
  - *Level One assessment:*
    - *More than 5.0% TC positive samples for the month (for systems taking 40 or more samples per month); or*
    - *Two or more TC positive samples in the same month (for systems taking less than 40 samples per month)*

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<sup>8</sup> Please see Attachment I for a copy of Dr. Speight's presentation "Discussion of Option Packages for Systems Serving > 1,000 (with analyses)."

- **Level Two assessment:**
  - **Two consecutive months with a Level One trigger**
  - **One acute violation of the *E. coli* MCL**

The Committee asked the Assessment and Corrective Action Subgroup to develop proposed language for the AIP based on the above concepts. In drafting language, members asked the subgroup to: make it clear that the public water system is normally responsible for conducting Level Two assessments if approved by the primacy agency; and define what is meant by “certified operator.”

During the discussion, some members of the Committee suggested that if a large system is triggered for an assessment and the exceedances are clustered in one part of the system, the assessment should be targeted to the relevant facility or part of the distribution system and not the entire system.

The Committee asked the Assessment and Corrective Action Subgroup to consider other triggers for a Level Two assessment, such as two Level One triggers in a rolling or fixed 12-month period. While the Committee acknowledged that two triggers in two consecutive months gives a clear indication of a serious problem, members also noted the importance of a Level Two trigger that would catch problems that might occur intermittently. One member cautioned that seasonality is important and that some systems might experience a Level Two trigger with summer biofilm regrowth – not contamination – problems. The Committee also asked the subgroup to consider whether a system that corrects the cause of the Level One trigger, and has clean samples the following month, should trigger a Level One rather than a Level Two assessment if there are subsequent exceedances.

Members of the Committee expressed support for a Level One assessment taking from one half to a few person days to complete, depending on the type of system. Based on this estimate, some members noted that the cost of doing a Level One assessment would be minimal for systems with full time staff available to do the assessment and more significant for the smallest systems with no paid staff. One member pointed out that large systems would rarely trigger an assessment, so the national cost would be small; however, for those large systems that do trigger an assessment, the cost would be significant.

The Committee asked the Assessment and Corrective Action Subgroup to consider whether monitoring and reporting violations, such as failure to take routine samples for a certain period or failure to take repeat samples, should trigger a Level One or Level Two assessment or some other consequence. (Monitoring violations will also be considered as a possible criterion for losing reduced monitoring privileges.) During the discussion, one member pointed out that under the current rule, failure to take repeat samples after an *E. coli* positive is an acute MCL violation. Another member noted that if the Committee decides that a monitoring violation should result in an assessment, the sample checklists<sup>9</sup> will need to be adjusted.

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<sup>9</sup> Copies of the sample checklists are available from the Designated Federal Officer.

### Corrective Action

The Advisory Committee then discussed provisions for the corrective action requirement in the Agreement in Principle.

***Based on the discussion, the Committee determined that the following concepts should be included in a draft single-text option for further consideration:***

- ***Systems must correct or have a schedule to correct sanitary defects identified in Level One or Level Two assessments.***
- ***Sanitary defects are defined as defects that could provide pathways for contamination into the distribution system or indicate a weakness or failure in a barrier that is already in place.***

The Committee asked the Assessment and Corrective Action Subgroup to develop proposed language for the AIP based on the above concepts. In doing so, members asked the subgroup to: draft language that is as clear and specific as possible to avoid different interpretations and inconsistency in how the rule is implemented; and consider operation and maintenance issues in the description of sanitary defects.

### Follow-Up Monitoring

Over the course of the two-day meeting, the Advisory Committee discussed several aspects of follow-up monitoring, drawing on two scenarios from the option packages that would result in follow-up monitoring:

1. A single TC positive sample with at least four repeat negative TC samples
2. Two TC positives

In response to questions from the Committee, members of the TWG provided the following information from the Six-Year Review data and the model analysis results:

- Twenty percent of follow-up samples are TC positive in CWS; 30-40 percent are TC positive in NCWS
- For all systems serving 1,000 or fewer people (disinfecting and non-disinfecting), a higher percentage of systems would be triggered for assessment under scenario two (919 systems triggered 191 assessments) than under scenario one (1364 systems triggered 148 assessments)

In discussing scenario one (one TC positive with four negative repeats), some members of the Committee expressed the view that, while there might be a rationale for requiring systems on quarterly monitoring to take follow-up samples the next month, there is no need for systems on monthly monitoring to do so. One member noted that requiring follow-up monitoring would increase the number of monitoring and reporting violations and the burden for the states.

In their discussion of scenario two (two TC positives), which triggers an assessment in all the option packages, the Committee expressed support for the concept of validating the results of the assessment or corrective action. Some members noted that results could be validated not only through follow-up monitoring, but also through samples taken as part of the assessment or corrective action, or simply with routine samples taken the following month (for systems on monthly monitoring or triggered back to monthly after two TC positives). Other members also

felt there should be a relationship between this component of the rule and the circumstance under which systems on quarterly monitoring are required to return to monthly monitoring. Some also felt follow-up monitoring remains important for systems on less than monthly monitoring when a single sample is TC positive.

During the meeting, two groups of Committee members met to discuss follow-up monitoring and offered proposals for the Committee's consideration.

In the first proposal:

- Any CWS or NCWS on quarterly monitoring, with two TC positives that trigger an assessment, returns to monthly monitoring for some period of time. The six repeat samples (after the two TC positives), and the monthly routine samples (for some period of time) serve to validate the results of the assessment or corrective action without the need for additional follow-up samples
- Any CWS or NCWS on monthly monitoring, with two TC positives that trigger an assessment, continues on monthly monitoring with no additional follow-up samples

During the discussion of this proposal, one member asked the Committee to consider whether assessments should include sampling, or corrective action should include follow-up sampling at the location of the original TC positive.

In the second proposal:<sup>10</sup>

- CWS serving more than 1,000 people have no follow-up monitoring requirement
- CWS serving less than 1,000 people have no or varying follow-up monitoring requirements, depending on whether a system:
  - Had one TC positive (with no repeat positives) or two TC positives
  - Is on monthly or reduced monitoring
  - Disinfects to at least 4-log or to less than 4-log

Under some circumstances, one follow-up sample is required at the source; in others, three samples, one at the source and two in the distribution system, are required.

During the discussion of the second proposal, some members expressed the view that the proposal was too complex with too many variables to track. Others noted that this approach provided for a reduction in follow-up monitoring from current TCR requirements and helped target follow-up monitoring to situations with the greatest benefit. Some members also stated that if follow-up samples are required, they should be at the point of entry to the distribution (or in the distribution system), not at the source.

The Committee agreed to form a monitoring subgroup to consider this and other monitoring provisions for the AIP, building on the Committee's discussion, and to develop proposed language for the AIP.

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<sup>10</sup> A copy of the chart depicting this group's follow-up monitoring proposal is available from the Designated Federal Officer.

### Reduced Monitoring Provisions for Community Water Systems Serving More than 1,000

Over the course of the meeting, the Advisory Committee discussed reduced monitoring provisions for systems of varying sizes.

At the request of one member, the Committee discussed whether CWS serving more than 1,000 people with a cross-connection control program or ground water CWS that disinfect could qualify for quarterly monitoring. This member suggested that these, and possibly other, criteria would provide incentives to systems to take actions that would provide better protection of public health. Some members expressed support for this concept; others noted concerns including, the large number of systems that already meet the criteria might be the only ones taking the option of reduced monitoring, the cost of the incentives might be higher than the savings from reduced monitoring, the potential for unintended consequences (e.g., disinfection by-products), and the inconsistency in the application of cross-connection control programs. A member of the TWG pointed out that in New England, where disinfection is mandated, systems are choosing to disinfect to less than 4-log in order not to trigger the GWR. Some members suggested reducing the number of samples per month for qualified systems rather than the frequency of monitoring.

### Baseline and Reduced Monitoring Provisions for Non-Community Ground Water Systems Serving 1,000 or fewer People

The Advisory Committee then discussed considerations for baseline and reduced monitoring provisions for NCWS serving 1,000 or fewer people. One member reminded the Committee that the majority of these systems are businesses that provide water as an ancillary service. This member suggested incorporating the concept of a having a certified person, internal or external to the business, regularly inspect the water system in order for it to qualify for reduced monitoring.

One member made the following proposal for baseline and reduced monitoring for GW NCWS:

- Baseline monitoring: quarterly
- Reduced monitoring: annual
- A trigger event or *E. coli* positive increases monitoring to monthly for some period of time

In the discussion of this proposal members made the following points:

- The time period for staying on monthly monitoring should differ depending on whether the system triggered a Level One or Level Two assessment; the states' history with the system should also be considered
- For systems on annual monitoring, consider two steps – first to quarterly monitoring, then to monthly – after a triggered event
- The baseline monitoring for seasonal systems should be monthly

One member of the Committee voiced concern about allowing systems to reduce to annual monitoring. Another member explained that some states believe annual monitoring can be a good approach, particularly when it is integrated with public health regulations and the state doing the monitoring along with an annual site visit. This allows states to focus their limited resources on prevention activities and site inspections rather than just on enforcement of

monitoring and reporting violations. This member stressed, however, that it is important to set stringent criteria for a system to qualify for annual monitoring.

During the meeting, a group of Committee members met and developed for the Committee's consideration, the following criteria for reduction to annual monitoring for GW NCWS:

- Protected ground water source (needs to be defined), and
- Clean compliance history (no water quality or monitoring and reporting violations, or trigger actions related to TCR) for 12 months or two monitoring cycles (whichever is longer), and
- Sanitary survey free of uncorrected sanitary defects, and
- Annual site visit by agent of state (to be defined in state primacy package)

The Committee agreed to ask the Monitoring Subgroup to continue the discussion of these issues, building on the Committee's discussion, and to develop proposed language for the AIP.

#### Baseline and Reduced Monitoring Provisions for Community Water Systems Serving 1,000 or Fewer People

During the meeting, a group of Committee members developed and presented to the Committee the following proposal for baseline and reduced monitoring for CWS serving 1,000 or fewer people:

- Baseline monitoring: monthly
- Reduced monitoring: quarterly
- Criteria for reduced monitoring:
  - Protected ground water source (need to be defined), and
  - Clean compliance history (no water quality or monitoring and reporting violations, or trigger actions related to TCR) for 12 months or two monitoring cycles (whichever is longer), and
  - Sanitary survey free of uncorrected sanitary defects, and one from a list of additional criteria such as:
    - Annual site visit by agent of state (to be defined in state primacy package)
    - Cross-Connection Control program
    - Certified operator
    - Disinfection residual

The Committee agreed to ask the Monitoring Subgroup to continue the discussion of these issues and to develop proposed language for the AIP.

#### Rule Construct - Treatment Technique

The Advisory Committee also discussed the proposed treatment technique rule construct for TC. One Committee member presented the following overview of how a treatment technique for TC could work:<sup>11</sup>

- If a system exceeds a Level One or Level Two trigger, it is required to do an assessment and, if applicable, correct the problem

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<sup>11</sup> A copy of the proposed treatment technique construct is available from the Designated Federal Officer.

- If the system conducts an assessment and corrects the problem (if found), it is in compliance with the treatment technique
- If the system fails to do an assessment or finds a problem and fails to correct it, the system is in violation of the treatment technique
- A treatment technique violation results in public notification (either 30-day or one-year).

In the discussion that followed, one member of the Committee questioned whether a treatment technique construct, with federal regulatory involvement, was appropriate for TC. The rationale was that, since TC is more appropriate as an indicator of system integrity than as a direct public health problem, failure to do assessment or corrective action should be a monitoring and reporting violation, addressed between the system and state. Under a treatment technique, federal authorities might become involved in system operations, making judgments about whether systems properly fulfilled the assessment and corrective action requirements. In response, other members pointed to language the Committee proposed for the draft AIP - that Level One and Level Two assessments and corrective actions would be system driven and limited to sanitary defects. One member also noted that the AIP could include a provision for an appeal process. Some members also pointed out that the change to a treatment technique construct for TC would remove the burden to systems of the non-acute violation and place the emphasis instead on systems taking proactive actions to address problems.

The Committee agreed to continue this discussion when all the components of the AIP are more fully developed.

#### Violations and Public Notification

The members of the Advisory Committee discussed possible provisions for violations, and the type of public notification associated with them, to include in a single-text Agreement in Principle.

*The Committee determined that the following concepts should be included in a draft single-text option for further consideration:*

- **Public notification:**
  - **Tier One (24 hours): acute MCL violation (both routine and repeat TC samples are TC positive and either one is E. coli positive); and failure to take required repeat samples following an acute violation**
  - **Tier Two (30 days): Treatment Technique violations (failure to conduct an assessment or take corrective action)**
  - **Tier Three (within one year): Monitoring and reporting violations (failure to complete some or all of monitoring requirements or submit results in timely manner)**

During the discussion, members discussed the need to look at the public notification language for each tier to be sure it aligns with the new rule construct and allows for system and site specific variations.

### Sampling Plans

The Advisory Committee also discussed the following concepts related to sampling site plans for possible inclusion in the AIP:

- Allow, but do not require, the use of dedicated sampling stations; ensure they are representative of distribution system
- Allow, but do not require or prohibit, point-of-entry sampling
- Allow primacy agencies more flexibility in developing and modifying sampling plans

During the discussion, a member of the TWG encouraged the Committee to allow for future adaptations to the rule based on new information and research on optimizing monitoring of the distribution system.

An alternate to the Committee referred members to language on sampling site plans in the Stage 2 Disinfectants and Disinfection Byproducts Rule in Sec. 141.622 Subpart V. (Note: The Stage 2 Rule can be accessed online at <http://www.epa.gov/fedrgstr/EPA-WATER/2006/January/Day-04/w03.pdf> )

Members and alternates on the Committee who represent primacy agencies agreed to draft language on sampling site plans for the Committee's consideration.

### Administrative Appeals

During the meeting, a member of the Committee proposed that there be a one-step process to appeal a primacy agency's decision about 1) what corrective action should be taken after Level 2 assessment; or whether the corrective action taken after a Level 1 assessment was sufficient. One member suggested that the appeals process could be written into the state primacy language; another suggested including the appeals process in the rule language on assessments. One member reminded the Committee that in order for appeals language to apply to EPA (where it has primacy), the language would have to appear somewhere other than in the state primacy requirements, which do not apply to EPA. Several members noted that there are existing ways to resolve differences between systems and state regulators, from a formal multi-step administrative or legal process to a more informal call or meeting to resolve differences. They also noted that smaller systems may not be aware that these options exist.

A group of Committee members agreed to draft proposed language for an appeals process that addresses the points raised by the Committee.

## **VI. Research and Information Collection Needs**

Members of the Advisory Committee discussed three questions related to the proposed AIP language<sup>12</sup> developed by the Research and Information Collection Priorities Subgroup: what is the best way to structure the levels of priorities; where do pressure/intrusion and nitrification fit in this structure; and what level of priority should be given to research related to improvements in the TCR.

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<sup>12</sup> A copy of the notes from the conference call of the Research and Information Collection Priorities Subgroup is available from the Designated Federal Officer.

One member of the Committee suggested that there be just two levels of research and information collection priorities - high and low - because finer distinctions may be difficult to make. Another member suggested removing the phrase "...in some cases coming close to..." from the characterization of the highest priority.

One member expressed the view that pressure/intrusion should be on the list of lower priorities, because there is not very much information on problems from minor pressure fluctuations and related health impacts, and because this information would be hard to get. Another member argued that pressure/intrusion should be one of the higher priorities, because maintenance of pressure is an important barrier for protecting public health.

One member expressed the view that TCR-related research and information collection should be a lower priority than the seven issues (cross-connection and backflow, storage facilities, water mains, pressure and intrusion, biofilm, nitrification, contaminant accumulation) previously identified by the Committee. Other Committee members and TWG members suggested that TCR-related research be considered a cross-cutting issue (like analytical framework, public health assessment, and fate and transport of contaminants), because TCR monitoring is key to collecting the data needed for the other seven areas of research.

During the discussion, one member stressed the importance of measuring public health effects not just system health, because of Congress' expressed interest in determining how effective the Safe Drinking Water Act is in protecting the public.

The Committee agreed to ask the Research and Information Collection Priorities Subgroup to develop proposed language for the AIP based on the Committee's discussion.

## **VII. Action Items and Next Steps**

Ms. Bingham noted that four subgroups, including one formed during this meeting, will meet to build on the Committee's discussion and develop proposed language for the Agreement in Principle for discussion at the June meeting:

- Research and Information Collection Partnership Mechanism Subgroup
- Assessment and Corrective Actions Subgroup
- Research and Information Collection Priorities Subgroup
- Monitoring Subgroup: possible members include Harvey Minnigh, David Visintainer, Pam Barr, Jerry Smith or Patti Fauver, Tom Crawford, Christine Maloni Hoover, Lynn Thorp, John Neuberger

In addition, Carrie Lewis, Christine Maloni Hoover, and Lynn Thorp will develop proposed language for an Administrative Appeals provision in the rule.

The TWG will next meet on June 17, 2008 in Washington, D.C. The Advisory Committee will next meet on June 18-19, 2008 in Washington, D.C.

*NOTE: This document was prepared by the facilitators for consideration by the Total Coliform Rule Distribution System Advisory Committee and does not constitute a product of the Committee. The Total Coliform Rule Distribution System Advisory Committee is a federal advisory committee chartered by Congress, operating under the Federal Advisory Committee Act (FACA; 5 U.S.C., App.2). The Committee provides advice to the Administrator of the U.S. Environmental Protection Agency on revisions to the Total Coliform Rule (TCR), and on what information about distribution systems is needed to better understand the public health impact from the degradation of drinking water quality in distribution systems. The findings and recommendations of the Committee do not represent the views of the Agency, and this document does not represent information approved or disseminated by EPA.*

## **Attachments**

Attachment A – TCRDSAC roster\*

Attachment B – Meeting agenda\*

Attachment C – List of meeting attendees

Attachment D – February TCRDSAC meeting summary\*

Attachment E – Doug Owen’s presentation “Comparison of Option Approaches”\*

Attachment F – Doug Owen’s presentation “Background on Comparative Analysis of Options”\*

Attachment G – Vanessa Speight’s presentation “Discussion of Option Packages for CWS  
Serving < 1,000 (with analyses)”\*

Attachment H – Vanessa Speight’s presentation “Discussion of Option Packages for NCWS  
Serving < 1,000 (with analyses)”\*

Attachment I – Vanessa Speight’s presentation “Discussion of Option Packages for Systems  
Serving > 1,000 (with analyses)”\*

\* The meeting presentations and other documents may be found online at  
[http://www.epa.gov/OGWDW/disinfection/tcr/regulation\\_revisions\\_tcrdsac.html](http://www.epa.gov/OGWDW/disinfection/tcr/regulation_revisions_tcrdsac.html).

*U.S. Environmental Protection Agency*  
**Total Coliform Rule / Distribution System**  
**Advisory Committee Meeting**  
**April 9-10, 2008**

**Meeting Attendees**

Ali Arvanaghi, U.S. EPA  
David Baird, National Rural Water Association\*  
Pamela Barr, U.S. EPA\*  
Jeremy Bauer, U.S. EPA  
Gail Bingham, RESOLVE  
Eric Bissonette, U.S. EPA  
Manja Blazer, IDEXX  
Erica Brown, Association of Metropolitan Water Agencies\*  
Gary Burlingame, Philadelphia Water Department  
Joyce Chandler, U.S. EPA  
Jimmy Chen, U.S. EPA  
Sarah Clark, HDR  
Robert Clement, U.S. EPA  
Charla Colson, U.S. EPA  
Sean Conley, U.S. EPA  
Tom Crawford, Native American Water Association\*  
Cynthia Dougherty, U.S. EPA\*  
Patti Fauver, Environmental Council of States\*  
Melinda Friedman, Confluence Engineering Group, LLC  
Kathy Grant, RESOLVE  
Tom Grubbs, U.S. EPA  
Yu-Ting Guilaran, U.S. EPA  
Trish Hall, U.S. EPA  
Andrew Hanson, U.S. EPA  
Curtis Haymore, The Cadmus Group, Inc.  
Christine Maloni Hoover, National Association of State Utility Consumer Advocates\*  
Dawn Kristof Champney, WWEMA  
Dan Kroll, HACH Homeland Security Technologies  
Mark LeChevallier, National Association of Water Companies\*  
Debbie Lee, RESOLVE  
Frank Letkiewicz, The Cadmus Group, Inc.  
Carrie Lewis, American Water Works Association\*  
Gary Lynch, National Association of Water Companies\*  
Jennifer Lynette, U.S. EPA  
Dana Mason, RESOLVE  
Beth Messer, Environmental Council of States\*  
Harvey Minnigh, Rural Community Assistance Partnership\*  
Ed Moriarty, U.S. EPA  
Russell Navratil, County of Henrico, VA

John Neuberger, Council of State and Territorial Epidemiologists\*  
Eva Nieminski, Utah Department of Environmental Quality  
Darrell Osterhoudt, Association of State Drinking Water Administrators\*  
Doug Owen, Malcolm Pirnie  
Jonathan Pressman, U.S. EPA  
Graciela Ramirez-Toro, CECIA-IAUPR  
Stig Regli, U.S. EPA  
J. Kevin Reilly, U.S. EPA  
Alan Roberson, American Water Works Association\*  
Crystal Rodgers-Jenkins, U.S. EPA  
Pamela Russell, U.S. EPA  
Rick Sakaji, East Bay Municipal Utility District  
Tom Schaeffer, Association of Metropolitan Water Agencies  
John Scheltens, American Water Works Association  
Nicole Shao, U.S. EPA  
Charlotte Smith, Charlotte Smith & Associates  
Jerry Smith, Association of State Drinking Water Administrators\*  
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Vanessa Speight, Malcolm Pirnie  
David Spenard, National Association of State Utility Consumer Advocates\*  
Scott Summers, University of Colorado at Boulder  
Ed Thomas, National Rural Water Association  
Lynn Thorp, Clean Water Action\*  
Bruce Tobey, National League of Cities\*  
Lesley Vasquez Coriano, U.S. EPA  
Steve Via, American Water Works Association  
Bob Vincent, National Environmental Health Association\*  
David Visintainer, Association of Metropolitan Water Agencies\*  
Paul Whittemore, National Rural Water Association\*  
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