pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMENT AND RESPONSE DOCUMENT

REVISED TOTAL COLIFORM RULE (RTCR)

25 *Pa. Code* Chapter 109
45 Pa.B. 5943 (October 3, 2015)
Environmental Quality Board Regulation #7-494
(Independent Regulatory Review Commission #3119)

List of Commentators

1. Sharon Fillmann
   Chester Water Authority
   sharon.fillmann@chesterwater.com

2. Douglas Crawshaw
   The York Water Company
   130 East Market Street
   York, PA 17401
   dougc@yorkwater.com

3. Randy High
   Pure-Test Laboratory
   randy@puretest.com

4. a. Rita Kopansky
   Philadelphia Water
   rita.kopensky@phila.gov

   b. Dennis O'Connor
   Philadelphia Water
   1101 Market Street
   Philadelphia, PA 19107
   dennis.m.oconnor@phila.gov

5. J. Massaro
   Citizen
   380 Celebration Drive
   Fort Washington, PA 19034
   bballdawg84@aol.com

6. David T. Lewis, P.E.
   Columbia Water Company
   220 Locust Street, P.O. Box 350
   Columbia, PA 17512
   DLewis@columbiawater.net

7. Patti Kay Wisniewski
   US EPA Region 3
   1650 Arch Street
   Philadelphia, PA 1910
   wisniewski.patti-kay@epa.gov

8. Serena DiMagno
   Legislative/Regulatory Affairs
   Chairman, WWOAP
   514 Hockersville Road
   Hershey, PA 17033
   sadimagno@aol.com

9. Donna Wingle
   Lehigh County Authority
   1053 Spruce Road, P.O. Box 3348
   Allentown, PA 18106
   donnawingle@lehighcountyauthority.org

10. James J. Land, Jr.
    MC Resource Development
    1390 Le Boutillier Road
    Malvern, PA 19355
    jamesjlandjr@comcast.net

11. Michael J. Pickel, P.E.
    Aqua America, Inc.
    762 W. Lancaster Avenue
    Bryn Mawr, PA 19010
    MJPickel@aquaamerica.com

12. Mary Neutz
    SUEZ Water
    2000 First State Boulevard, P.O. Box 6508
    Wilmington, DE 19804
    Mary.Neutz@suez-na.com

13. Diane Kisner
    Mahaffey Laboratory, LTD
    551 State Street
    Curwensville, PA 16833
    dkisner@mahaffeylaboratory.com

14. Independent Regulatory Review Commission
    333 Market Street, 14th Floor
    Harrisburg, PA 17101

COMMENTS AND RESPONSES

1. Comment:

PaDEP is incorrectly stating EPA guidance in the revised total coliform preamble "Background and Purpose" section by including language referencing that microbial contamination in the distribution system occurs when there are conditions that allow proliferation of the microorganisms, including "the lack of a disinfectant residual" or poor operation and maintenance practices. This is a misstatement of EPA guidance. In addition, the lack of a disinfectant residual is not a sanitary defect pursuant the Federal RTCR. Rather, it is simply an indication that a sanitary defect—a pathway to contamination—could exist.

EPA's Revised Total Coliform Rule Assessments & Corrective Actions Guidance Manual (Sept. 2014,pg. 2-1, 2-2) specifically states:

Coliform bacteria may be present in the distribution system if three conditions simultaneously occur:

1. A source of coliform bacteria;

2. A pathway into the distribution system or a breach in the system's physical integrity; and

3. A mechanism that allows coliform bacteria to be carried on this pathway into the distribution system or that allows bacteria within biofilms, corrosion tubercles or sediment to break free and enter the water.

PaDEP is incorrectly stating that "the lack of disinfectant residual" is a sanitary defect in the revised total coliform preamble "Background and Purpose" section.

PaDEP states that "the lack of disinfectant residual" is a sanitary defect and also references EPA's RTCR Assessment and Corrective Action Manual. EPA's guidance manual, despite PaDEP's reference to it, does not identify disinfectant residual alone as being a pathway for contamination. PaDEP is suggesting that "the lack of a disinfectant residual" is a sanitary defect, i.e. 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.

Pathways need to be clarified and thought of in terms of a route of exposure for contamination (See AWWA's April 2011 Opflow Article Preventing the Perfect Storm, Public Health Relies on Risk Management). A cross connection, capable of causing backflow from back siphonage or backpressure, is a pathway for contamination. A finished water storage tank with any sort of opening, like an open defective hatch, vent or hole, is a pathway for contamination. A new water main that was exposed to the environment and not properly installed before connecting to the active distribution system, is a pathway for contamination.

The level of disinfectant residual may or may not indicate that contamination gained access to the distribution system. In other words, disinfectant residual is an indicator that a pathway may exist, but it is not the pathway. In fact, the real indicator is often a sudden loss in disinfectant residual that suggests an increase in demand, than a seasonal decline that is gradual. There is no scientifically based research showing a direct correlation between "lack"

of a disinfectant residual and microbial contamination. This was noted during special TAC meetings with presentations from various utilities and experts, in which there were cases where samples were positive for total coliforms and E. coli, despite the presence of adequate disinfectant residuals.

EPA's RTCR Assessments & Corrective Actions Guidance Manual, Table 5-1: Common Causes of Total Coliforms and E. coli in the Distribution System & Possible Corrective Actions to Address Them, (pg. 5-7 in the manual) under the Sanitary Defects/Cause(s) of TC+ & EC+ column lists inadequate disinfectant residual levels in the distribution system.

EPA guidance points more toward "inadequate disinfectant" being the result of disinfection practices that create a condition that may point to the presence of coliform or E. coli. In other words, EPA guidance is stating that inadequate disinfectant in the distribution system is more of a disinfection issue (i.e. during the treatment phase) and needs to be addressed there rather than being reactionary to a low disinfectant residual result measured within the distribution system. Results within the distribution system shouldn't necessarily trigger corrective action; rather they should trigger investigation. Water with zero chlorine residual is not necessarily unsafe for drinking.

Corrective Action:

Philadelphia Water requests that PaDEP remove the inaccurate statement (microbial contamination in the distribution system occurs when there are conditions that allow proliferation of the microorganisms, including "the lack of a disinfectant residual" or poor operation and maintenance practices) because it incorrectly references specific EPA guidance. The intent of EPA's RTCR Assessment and Corrective Actions Guidance Manual is not about the proliferation of microorganisms, but about addressing failures to detect or mitigate the presence of coliforms and E. coli.

Philadelphia Water requests that PaDEP remove the inaccurate statement regarding the lack of disinfection residual as being a pathway for contamination because it misinterprets EPA's RTCR Assessment and Corrective Actions Manual.

Inaccurately referencing and misinterpreting EPA guidance in the preamble will lead to confusion among water systems because the language creates a regulatory framework that is inaccurate and that has not been proven. The language could expose public water systems to enforcement actions, public notifications and subsequent remedial action costs. A simple, accurate language reference could avoid misinterpretation and the previously mentioned risks as well as make PaDEP enforcement actions far less likely since background and purpose objectives would be clearly and accurately articulated. **(4)**

Response:

For the purpose of providing clarity in the final Order, the Department has removed the sentence related to this comment. However, the Department disagrees with the commentator. The lack of a disinfectant residual does meet the definition of a sanitary defect under the RTCR, as the federal and state definition of a sanitary defect contains two parts. 40 CFR 141.2 and Chapter 109.1 define a sanitary defect as a defect:

1. That could provide a pathway of entry for microbial contamination into the distribution system; or

2. That is indicative of a failure or imminent failure in a barrier that is already in place.

Maintenance of a disinfectant residual in the distribution system is already required by state regulations and is part of the multi-barrier approach to ensuring safe drinking water. A lack of a disinfectant residual is indicative of a failure or imminent failure in a barrier that is already in place.

2. Comment:

PaDEP is using inaccurate and archaic language from the existing Total Coliform Rule (check sample terminology) that the EPA abandoned in revision to the Total Coliform Rule by changing all check sample language to repeat sample.

EPA's Total Coliform Rule – Distribution System Federal Advisory Committee (TCRDSAC) carefully discussed changing the term "check sample" to repeat sample. There is no way to verify or discount an original positive sample by taking another grab sample at another time. The follow-up sample is not a "check" on the initial positive. The follow-up sample repeats the sampling process in order to determine if an active pathway for contamination could still be in place and to what extent. This error appears throughout the proposed regulation.

PaDEP confuses the language, as they consider the follow-up process to refer to repeat monitoring requirements, however the follow-up samples collected are referred to as check samples. The "check sample" terminology is outdated, as EPA uses "repeat sample" terminology. The "check sample" terminology is confusing especially when going through EPA's RTCR references and publication reports.

Corrective Action:

The term "check sample" should be changed to "repeat sample" throughout Chapter 109 because the EPA RTCR abandoned "check sample" language. Along with the "check sample" terminology being inaccurate and inconsistent with the federal RTCR, its continued usage could create confusion among water systems when going through EPA's RTCR references and publication reports. The intent of revisions to TCR is to improve implementation while maintaining or improving public health protection and distribution system water quality, not to expose public water systems to enforcement actions, public notifications and subsequent remedial action costs. Abandoning language that is inconsistent with the EPA's RTCR could avoid these risks as well as make PaDEP enforcement actions far less likely since compliance standards and terminology are now clearly and consistently articulated. **(4)**

Response:

The Department does not believe that the term "check sample" may cause confusion for water systems, because Chapter 109 consistently refers to samples collected as part of repeat

monitoring as check samples. The Department intends to maintain "check samples" as the term used to denote samples collected for repeat monitoring purposes, because:

1. The term "check sample" has long been used in the Commonwealth and it is the term most commonly known and used by public water systems and accredited laboratories; and

2. Department programming for its Pennsylvania Drinking Water Information System (PADWIS) and Drinking Water Electronic Reporting (DWELR) databases as well as all technical guidance documents for laboratory reporting instructions use the letter 'C' to denote sample results as check samples. The letter 'R' is already in use to denote raw water sampling so it cannot be used to denote repeat sampling.

3. Comment:

PaDEP must clarify how a system must proceed after triggering another Level 1 assessment, as defined in subparagraph (i), within a rolling 12-month period if the Department has determined a likely reason that the samples that caused the first Level 1 assessment were total coliform-positive and has established that the system has corrected the problem.

According to EPA, if the first Level 1 Assessment identifies problem(s) and corrected them prior to the second Level 1 Assessment trigger, the only a Level 1 assessment is required the second time.

Corrective Action:

Philadelphia Water requests that PaDEP clarify that if during a rolling 12-month period, a second Level 1 assessment is triggered where the first Level 1 assessment identified and corrected the problem leading to the initial assessment, then only a Level 1 Assessment would be required the second time. If the problem leading to the initial assessment was not identified and corrected, then PaDEP must clarify that Level 2 assessment would be required. **(4)**

Response:

Section 109.202(c)(4)(ii)(B) is consistent with the federal rule at 40 CFR 141.859(a)(2)(ii) and states that a Level 2 assessment is triggered if a second Level 1 assessment occurs unless the Department has determined a likely reason for the first Level 1 assessment and has established that the water system has corrected the problem.

4. Comment:

PaDEP must not be able to broadly or vaguely direct a system to conduct an assessment if circumstances exist which may adversely affect drinking water quality.

Corrective Action:

Philadelphia Water requests that PaDEP within the revised TCR, tie the use of "assessments" to only RTCR triggers, because Level 1 and Level 2 Assessments are only intended in

response to RTCR treatment technique or E. coli MCL violation. An "assessment" for situations outside of the RTCR is beyond the scope of the RTCR. Requiring assessments based on "water quality" is vague; not all water quality problems are threats to public health. As an example, bad taste and odor customer complaints will trigger an investigation by the water supplier but the proposed language here suggests that such an investigation could become a requirement under the RTCR. **(4)**

Response:

The Department agrees and has deleted subparagraph §109.202(c)(4)(iii).

5. Comment:

PaDEP must not limit the use of advanced technology, if it is already available, for selecting repeat sampling locations rather than collecting at least one check sample at a tap within five service connections upstream of the original coliform-positive sample and at least one check sample within five service connections downstream of the original sampling site.

EPA §141.853(a)(5)(i) *General monitoring requirements for all public water systems* states :

(5) Systems must identify repeat monitoring locations in the sample siting plan. Unless the provisions of paragraphs (a)(5)(i) or (a)(5)(ii) of this section are met, the system must collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. If a total coliform-positive sample is at the end of the distribution system, or one service connection away from the end of the distribution system, the system must still take all required repeat samples. However, the State may allow an alternative sampling location in lieu of the requirement to collect at least one repeat sample upstream or downstream of the original sampling site. Except as provided for in paragraph (a)(5)(ii) of this section, systems required to conduct triggered source water monitoring under §141.402(a) must take ground water source sample(s) in addition to repeat samples required under this subpart.

(i) Systems may propose repeat monitoring locations to the State that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan. The system must design its SOP to focus the repeat samples at locations that best verify and determine the extent of potential contamination of the distribution system area based on specific situations. The State may modify the SOP or require alternative monitoring locations as needed.

EPA is suggesting methods like these to be used, when available, instead of the 5 upstream/downstream requirement which is not science-based. It has been demonstrated by hydraulic modeling (see the attached article featured in AWWA's May 2013 Issue of OpFlow *Hydraulic Model Improves Contamination Response*) that what was on one day an upstream sample location may be a downstream location on another day, or neither during

different demands and valve operations. Issues associated with smaller system capabilities and PaDEP limitations should not become a disincentive to larger systems. For example, the application of online sensors, hydraulic models, event detection and customer complaint surveillance for water security is providing real benefits for routine system operations and helps utilities better understand water quality issues. Allowing a PWS to determine, in real time, the most likely upstream and downstream sample locations for repeat sampling improves the chances of identifying ongoing contamination and likely causes, and ultimately strengthens public health protection.

Corrective Action:

Philadelphia Water strongly recommends that PaDEP adopt the EPA's RTCR suggestion by allowing public water systems utilizing advanced technologies to develop better alternative repeat sampling plans than the 5 upstream/downstream requirement, which never had any demonstrated scientific background.

A PWS that can select, in real time, the most valid upstream and downstream sample location is better able to meet the intent of the rule and strengthen public health protection. Limiting systems from utilizing advanced technologies to better select repeat sampling locations will weaken public health protection. **(4)**

Response:

The Department is not discouraging the use of advanced technology, such as hydraulic models or online sensors, to track and predict changes in water quality. These tools are incredibly useful for the proper operation of distribution systems. The tools can also be used to identify problem areas within the distribution system, which in turn make good locations for routine RTCR sample sites.

The requirement to collect check or repeat samples at a site within 5 service connections up- and down-stream of routine TCR sample sites has been a long-standing requirement of the TCR (since 1989). Therefore, available check sample locations that meet these criteria should be well-established in most water system's sampling plans.

Both the existing regulation and the final regulation recognize that conditions within the distribution system are dynamic; and therefore, the regulations do not require public water systems to identify which sampling location is upstream and which sampling location is downstream. By not requiring systems to specify which sampling location is upstream of the routine site and which is downstream, the regulation ensures that samples are collected on either side of the routine sample location.

Having results available for review from either side of a location testing positive may help systems to determine if the contamination is limited to the connection which tested positive or if a pathway of contamination exists which needs to be identified and eliminated.

The Department does recognize that it may be possible for a location greater than 5 service connections from the routine sample location to better represent a pathway for contamination. Therefore, 109.301(3)(ii)(B) has been revised as follows.

(B) The system shall collect at least one check sample from the sampling tap where the original total coliform-positive sample was taken**[,]. THE SYSTEM SHALL ALSO COLLECT** at least one check sample at **[a]ANY** tap within five service connections upstream of the original coliform-positive sample and at least one check sample **AT ANY TAP** within five service connections downstream of the original sampling site **UNLESS ALTERNATIVE LOCATIONS ARE APPROVED BY THE DEPARTMENT IN ACCORDANCE WITH § 109.701(a)(5) (RELATING TO SITING PLAN)**. If a total coliform-positive sample occurs at the end of the distribution system or one service connection away from the end of the distribution system, the water supplier shall collect an additional check sample upstream of the original sample site in lieu of a downstream check sample.

The Department is not allowing the use of an SOP to establish criteria for selecting repeat sample sites on a case-by-case basis. The Department believes that repeat sample sites must be properly documented in the system's sample siting plan in order to ensure appropriate monitoring by the system and allow for proper oversight by the Department. One of the concerns with not specifying where repeat samples should be collected is that systems could purposefully collect repeat samples across town (and away from a localized pathway of contamination) in order to avoid incurring an MCL violation. And the Department would have no way of knowing that this has occurred.

Finally, nothing is this final rule discourages or prevents a water system from using advanced technology to conduct investigations and collect additional special samples when determining the cause and extent of sanitary defects.

6. Comment:

PaDEP must not limit the use of advanced technology, if it is already available, for selecting repeat sampling locations rather than collecting at least one check sample at a tap within five service connections upstream of the original coliform-positive sample and at least one check sample within five service connections downstream of the original sampling site.

Why alternative repeat monitoring locations should be allowed.

According to EPA's Agreement in Principle (AIP), Total Coliform Rule – Distribution System Federal Advisory Committee (TCRDSAC), pg. 14, 15 the intent is that the RTCR should provide for a more flexible and more protective response. Larger, more complex systems can specify criteria for selecting repeat sampling sites on a situational basis in its standard operating procedures. This SOP should be designed to focus the repeat samples at locations that will best verify and determine the extent of potential contamination of the distribution system area based on specific situations.

Criteria using advanced methods - through an SOP – should be used, if available rather than the 5 upstream/downstream requirement (EPA §141.853(a)(5)(i) General monitoring requirements for all public water systems).

Additionally, in the AIP (pg. 14, 15) the intent of repeat sampling in RTCR is that flexibility in the selection of monitoring locations can provide a public health benefit through specific

targeting for each incident to facilitate the identification of the source and extent of any problem. The intent by EPA and TCRDSAC during RTCR discussion, as described in the previously noted AIP, is for systems to use, if available, more advanced methods for selecting sites on a situational basis through an SOP. If those resources are not available, then collect the 5 upstream/downstream samples.

Alternative repeat monitoring locations are recommended by EPA, and allow a system to select, under certain conditions, the most valid upstream and downstream sample location to meet the intent of the RTCR. This is accomplished by reviewing variables that impact flow and direction of flow in the system such as valve positions, storage areas in service or out of service, and utilizing hydraulic modeling. It has been demonstrated by hydraulic modeling (see the attached article featured in AWWA's May 2013 Issue of OpFlow Hydraulic Model Improves Contamination Response) that what was on one day an upstream sample location may be a downstream location on another day, or neither during different demands and valve operations. Distribution systems are complex and by allowing a system to better determine repeat sample locations improves the chances of identifying any on-going contamination and, therefore, is better protective of public health than the 5 upstream/downstream requirement.

EPA's Agreement in Principle (AIP), Total Coliform Rule – Distribution System Federal Advisory Committee (TCRDSAC) can be found at:

http://water.epa.gov/lawsregs/rulesregs/sdwa/tcr/upload/2009_05_01_disinfection_tcr_tcrdsac_agreementinprinciple_tcrdsac_2008-09-18.pdf

Corrective Action:

Philadelphia Water strongly recommends that PaDEP adopt the EPA's RTCR suggestion by allowing public water systems utilizing advanced technologies to develop better alternative repeat sampling plans than the 5 upstream/downstream requirement, which never had any demonstrated scientific background. A PWS that can select, in real time, the most valid upstream and downstream sample location is better able to meet the intent of the rule and strengthen public health protection. Limiting systems from utilizing advanced technologies to better select repeat sampling locations will weaken public health protection. **(4)**

Response:

See response to Comment #5. In addition, the AIP does not carry the force of law or regulation and was not meant to be binding for state development of RTCR regulations.

7. Comment:

PaDEP must not limit the use of advanced technology, if it is already available, for selecting repeat sampling locations rather than collecting at least one check sample at a tap within five service connections upstream of the original coliform-positive sample and at least one check sample within five service connections downstream of the original sampling site.

PaDEP is incorrectly stating that "the monitoring location represent the pathway for contamination".

Follow-up sampling can't, in and of itself, confirm or deny whether the initial sample was positive or not, or if it was representative of the distribution system because distribution systems are dynamic.

Follow-up sampling is repeat sampling to see if coliform bacteria can still be detected at the sample tap and at two other sample taps. These other alternative sample taps are those that are chosen through advanced technology (i.e. hydraulic modeling) because they best represent the characteristics and direction of the flow that most likely occurred when the initial sample collected was positive.

Additionally, the "location" does not represent a pathway for contamination (see Comment #2); rather it represents the extent of contamination. This language is incorrectly written and is confusing and should be revised to include the extent of contamination, not pathways for contamination. Again, alternative repeat monitoring locations allow systems the ability to best select the most appropriate sample locations for follow-up sampling because they best represent the characteristics and direction of the flow that occurred when the initial sample collected was positive.

For additional information on how hydraulic modeling can improve total coliform response (and proof that it does), see the attached article featured in AWWA's May 2013 Issue of OpFlow Hydraulic Model Improves Contamination Response.

Corrective Action:

Philadelphia Water strongly recommends that PaDEP adopt the EPA's RTCR suggestion by allowing public water systems utilizing advanced technologies to develop better alternative repeat sampling plans than the 5 upstream/downstream requirement, which never had any demonstrated scientific background.

A PWS that can select, in real time, the most valid upstream and downstream sample location is better able to meet the intent of the rule and strength public health protection. Limiting systems from utilizing advanced technologies to better select repeat sampling locations will weaken public health protection.

Philadelphia Water requests that PaDEP remove the inaccurate statement regarding the monitoring location representing a pathway for contamination because the language is inaccurate and should be revised to include that the sampling location represents the extent of contamination. **(4)**

Response:

See response to Comment #5. Additionally, the Department cites the first sentence of 40 CFR 141.853(a)(5)(i) as being critical for a water system identifying alternative repeat monitoring locations. That sentence states:

> "Systems may propose repeat monitoring locations to the State that the system believes to be representative of a pathway for contamination of the distribution system."

The commenter did not indicate how the use of advanced technology for selecting repeat sampling locations represents the pathway for contamination that led to the original coliform-positive sample.

8. Comment:

PaDEP must not limit the use of advanced technology, if it is already available, for selecting repeat sampling locations rather than collecting at least one check sample at a tap within five service connections upstream of the original coliform-positive sample and at least one check sample within five service connections downstream of the original sampling site.

As noted in the Agreement in Principle, Total Coliform Rule – Distribution System Federal Advisory Committee (TCRDSAC), pg.14, the intent of repeat sampling in RTCR is that flexibility in the selection of monitoring locations can provide a public health benefit through specific targeting for each incident to facilitate the identification of the source and extent of any problem.

Follow-up sampling can't, in and of itself, confirm or deny whether the initial sample was positive or not, or if it was representative of the distribution system because distribution systems are dynamic.

Follow-up sampling is repeat sampling to see if coliform bacteria can still be detected at the sample tap and at two other sample taps. These other alternative sample taps are those that are chosen through advanced technology (i.e. hydraulic modeling) because they best represent the characteristics and direction of the flow that most likely occurred when the initial sample collected was positive.

Specification of criteria for selecting alternative repeat monitoring location on a situational basis through a standard operating procedure should be allowed.

For additional information on how hydraulic modeling can improve total coliform response (and proof that it does), see the attached article featured in AWWA's May 2013 Issue of OpFlow, Hydraulic Model Improves Contamination Response.

Corrective Action:

Philadelphia Water strongly recommends that PaDEP adopt the EPA's RTCR suggestion by allowing public water systems utilizing advanced technologies to develop better alternative repeat sampling plans than the 5 upstream/downstream requirement, which never had any demonstrated scientific background.

A PWS that can select, in real time, the most valid upstream and downstream sample location (and not be locked into fixed alternative repeat monitoring locations) is better able to meet the intent of the rule and strength public health protection. Limiting systems from utilizing advanced technologies to better select repeat sampling locations will weaken public health protection. **(4)**

Response:

See responses to Comment #5, #6 and #97.

9. Comment:

PaDEP must not limit alternative repeat monitoring locations to only be submitted by a certified operator.

Larger water systems have numerous individuals (environmental scientists, chemists, biologists, engineers, laboratory director, water quality manager, etc.) who are not necessarily certified operators but who have vast experience in distribution system water quality. In many instances, a variety of personnel may be involved in the selection of the alternative repeat monitoring locations, none of whom are "certified operators", but who are qualified to submit an alternative repeat monitoring location plan.

Therefore, each system should designate these appropriate personnel and submit this list of qualified individuals to PaDEP, which can be reviewed and updated during sanitary surveys.

Corrective Action:

Philadelphia Water strongly recommends that PaDEP allow individuals designated by the public water system (and not necessarily "certified operators") be eligible to submit alternative repeat monitoring location plans because there may be numerous individuals who are not necessarily certified operators but who have vast experience in distribution system water quality and are qualified to submit an alternative repeat monitoring location plan. **(4)**

Response:

The Department has decided not to specify the qualifications of who may request alternative locations. Therefore, any individual representing the water system may request alternative locations.

10. Comment:

PaDEP must not limit alternative repeat monitoring locations to only be submitted under the seal of a professional engineer.

Larger water systems have numerous individuals (environmental scientists, chemists, biologists, engineers, laboratory director, water quality manager, etc.) who are not necessarily professional engineers but who have vast experience in distribution system water quality. In many instances, a variety of personnel may be involved in the selection of the alternative repeat monitoring locations, none of whom are "professional engineers", but who are qualified to submit an alternative repeat monitoring location plan. Therefore, each system should designate these appropriate personnel and submit this list of qualified individuals to PaDEP, which can be reviewed and updated during sanitary surveys.

Corrective Action:

Philadelphia Water strongly recommends that PaDEP allow individuals designated by the public water system (and not necessarily "professional engineers") be eligible to submit alternative repeat monitoring location plans because there may be numerous individuals who are not necessarily professional engineers but who have vast experience in distribution system water quality and are qualified to submit an alternative repeat monitoring location plan. **(4)**

Response:

See response to Comment #9.

11. Comment:

PaDEP must not limit the use of advanced technology, if it is already available, for selecting repeat sampling locations rather than collecting at least one check sample at a tap within five service connections upstream of the original coliform-positive sample and at least one check sample within five service connections downstream of the original sampling site.

As noted in the Agreement in Principle, Total Coliform Rule – Distribution System Federal Advisory Committee (TCRDSAC), pg.14, the intent of repeat sampling in RTCR is that flexibility in the selection of monitoring locations can provide a public health benefit through specific targeting for each incident to facilitate the identification of the source and extent of any problem.

There are many progressive, small systems that know their systems well and use advanced technology (i.e. hydraulic modeling) to help better determine alternative repeat monitoring locations. Prohibiting smaller systems from using more advanced technology (compared to the 5 upstream/downstream requirement – which is non-science based) would weaken public health protection.

For additional information on how hydraulic modeling can improve total coliform response (and proof that it does), see the attached article featured in AWWA's May 2013 Issue of OpFlow, Hydraulic Model Improves Contamination Response.

Corrective Action:

Philadelphia Water strongly recommends that PaDEP adopt the EPA's RTCR suggestion by allowing public water systems utilizing advanced technologies to develop better alternative repeat sampling plans than the 5 upstream/downstream requirement, which never had any demonstrated scientific background.

A PWS that can select, in real time, the most valid upstream and downstream sample location (and not be locked into fixed alternative repeat monitoring locations) is better able to meet the intent of the rule and strengthen public health protection. Limiting systems from utilizing advanced technologies to better select repeat sampling locations will weaken public health protection. **(4)**

Response:

See responses to Comment #5, #6, #9 and #97.

12. Comment:

PaDEP (and EPA) do not clearly communicate to water systems which sample(s) dictate where subsequent repeat samples need to be collected.

Consider the following scenario of total coliform results for an initial routine and repeat set that includes a repeat routine sample, and upstream and downstream samples (both collected within 5 service connections):

SAMPLE LOCATION	INITIAL SAMPLE	REPEAT SAMPLE
Upstream	NA	TC-
Routine	TC+	TC-
Downstream	NA	TC+

Under the federal rule as stated in § 141.858(a)(3), water systems must continue collecting repeat samples until all samples within the repeat set are negative for the presence of coliforms. However, does every coliform positive require a set of repeat samples based on the latest positive's location, or is it based on the routine repeat result? For example, when a repeat downstream is total coliform positive and all other repeats are total coliform negative, does the initial routine positive dictate where the repeats are collected or does the new repeat positive dictate where the new repeat samples are collected.

Corrective Action:

Philadelphia Water requests that PaDEP clarify which samples dictate where subsequent repeat samples are collected and address repeat sampling when the repeat routine may be negative for coliforms but one or both of the upstream or downstream samples in the repeat set are positive for coliforms. Both the federal and state RTCR do not clearly address this. The intent of revisions to TCR is to improve implementation while maintaining or improving public health protection and distribution system water quality. If the federal and state RTCR do not clearly address the situation when the repeat routine may be negative for coliforms but one or both of the upstream or downstream samples in the repeat set are positive for coliforms, then public health protection will be weakened. **(4)**

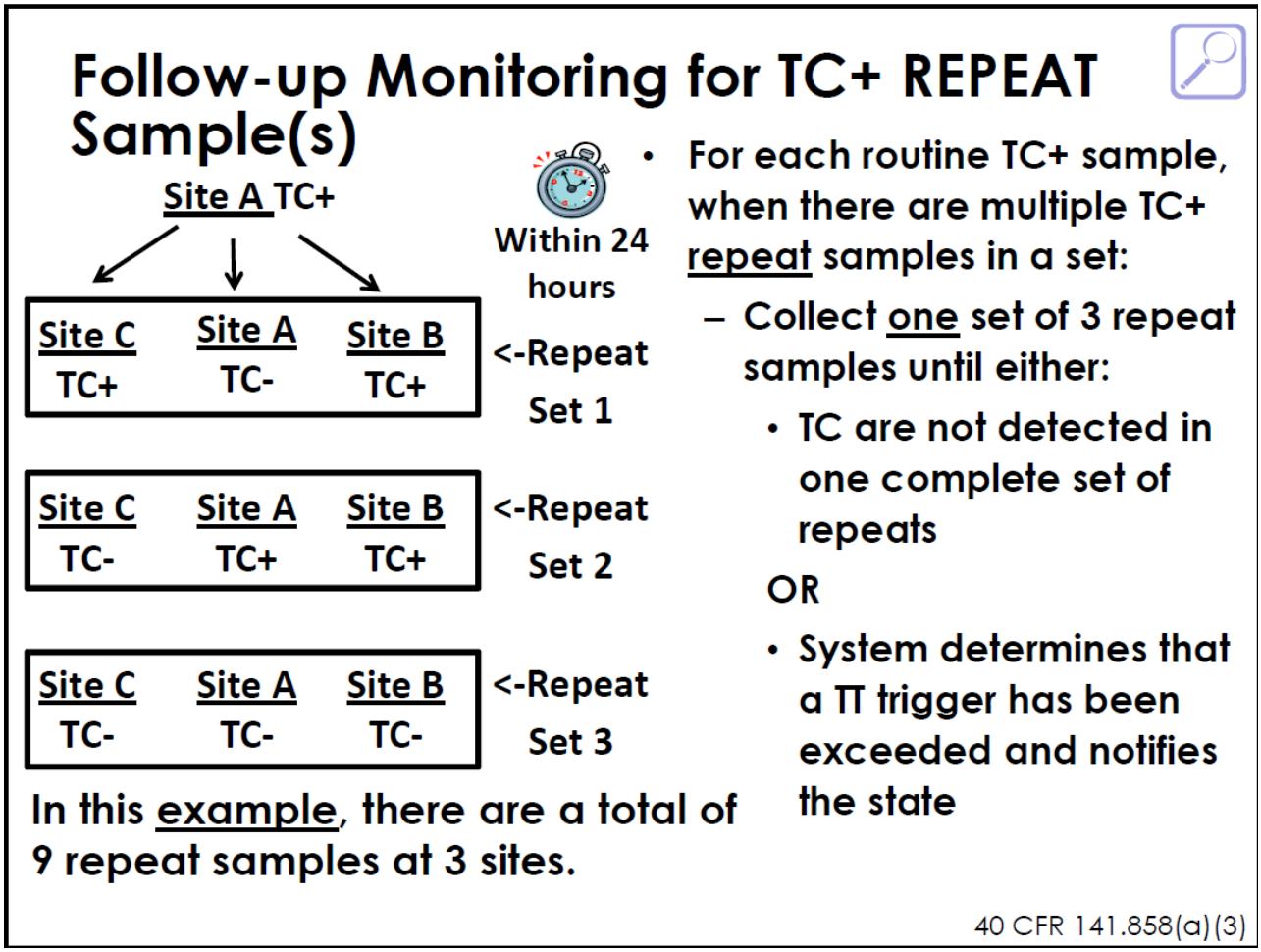
Response:

The Department has revised § 109.301(3)(ii)(D) to show that systems must continue to conduct repeat monitoring from the same three locations in the original set of check samples as follows:

> **[(E)] (D) At a minimum, the system shall collect one set of check samples for each total coliform-positive routine sample.** If a check sample is total coliform-positive, the

public water system shall collect **AN** additional **SET OF** check samples **FROM THE SAME LOCATIONS** in the manner specified in this subparagraph. The system shall continue to collect **ADDITIONAL SETS OF** check samples **FROM THE SAME LOCATIONS** until either total coliforms are not detected in **a set of** check samples, or the system determines that **[the MCL for total coliforms as established under § 109.202(a)(2) has been exceeded and notifies the Department] an assessment has been triggered under § 109.202(c)(4)** ~~**[and notifies the Department in accordance with § 109.701(a)(9)]**~~.

This revision is based on guidance provided by EPA at its webinar on December 3, 2013 as shown in the following illustration:



13. Comment:

PaDEP is inconsistent within the federal RTCR and Chapter 109 revisions on the timeframe for collecting repeat samples.

§ 109.301(3)(ii) and § 109.301(3)(ii)(C) do not match. The provision to collect "repeat samples" on the same day doesn't allow much room for correction. For example, the system, due to various circumstances may be limited to collecting a routine sample later in the day

and closer to the end of business. If results the following day shows the presence of coliform there is a very narrow window for collecting repeat samples on the same day. This could be especially challenging for smaller systems if they are limited on resources on a specific day (ex: sample bottles).

Corrective Action:

Philadelphia Water requests PaDEP to remain consistent with the federal RTCR (and throughout Chapter 109) by allowing repeat sampling to be completed within 24 hours, not on the same day. This will provide systems of all sizes enough time to address issues (like limited laboratory resources) for collecting the required set of repeat samples. **(4)**

Response:

Sections 109.301(3)(ii) and 109.301(3)(ii)(C) are consistent with 40 CFR § 141.858(a)(1) and § 141.858(a)(2). Section 141.858(a)(1) specifies that sets of repeat samples must be collected within 24 hours and § 141.858(a)(2) specifies that all samples should be collected on the same day. The Department is preparing a Revised Total Coliform Rule Technical Guidance document to provide additional guidance for staff and water systems. The Department's Revised Total Coliform Rule Technical Guidance document will be made available for a separate comment and response process.

14. Comment:

Tier 2 public notification for a single positive E. coli result is inappropriate. Additionally, 1 hour notification to PaDEP of a single E. coli occurrence is inconsistent with the federal requirement of end of the day notification.

E. coli is an indicator of biological contamination, not an indicator of acute contamination. As an indicator species it is not perfect, therefore we can't overreact to a single positive E. coli sample. Years ago, Philadelphia Water experienced this as various samples delivered to the laboratory, at times, represented contamination that was not representative of water within the distribution system but was specific to other characteristics (ex: sample tap, sample collector) (See Drinking Water E. coli Positive Samples during 2003-2006).

After a single positive E. coli occurrence, a system is still investigating and collecting follow up samples and trying to determine if there is a possibility of contamination in the area of the distribution system where the positive has occurred. Within 1 hour of a single positive E. coli occurrence, there is little information to be communicated to PaDEP and therefore little to no action to be taken by PaDEP. How is 1 hour notification justified? A laboratory could report preliminary results to provide an advanced warning, but approved data release could come later. Reporting to PaDEP by the end of the working day or within the same day is fine. Reporting in 1 hour however, interferes with reaction to E. coli positive and provides no addition information on which to act.

Additionally, failure to report a single occurrence of E. coli within 1 hour does not in itself represent a threat to public health, especially since there have been documented cases of E. coli positive samples that did not signal water contamination. EPA in § 141.858(b)(1) E.coli

testing, requires end of day notification to the state. Tier 3 public notification is appropriate for this type of reporting violation and is consistent with other reporting violations that fall under Chapter 109 related to reporting and recordkeeping requirements. Overuse of public notification for issues that do not in themselves signify a public health threat will unnecessarily erode public trust in the water system and could desensitize the public to the importance of notifications if they begin to hear them often for issues that are not truly related to public health.

Corrective Action:

Philadelphia Water requests that a requirement to notify PaDEP of a single E. coli positive occur by the end of the day, not within 1 hour, because the system is still gathering information about the result after 1 hour.

Philadelphia Water requests to classify failure to notify PaDEP about a single E. coli occurrence as a Tier 3 violation. Though Philadelphia Water agrees that the presence of E. coli requires investigation, Tier 2 public notification for a single positive E. coli sample is inappropriate. This would be overuse of public notification for issues that do not, in themselves, signify a public health threat and will unnecessarily erode public trust in the water system and could desensitize the public to the importance of notifications if they begin to hear them often for issues that are not truly related to public health. **(4)**

Response:

The detection of *E. coli* warrants one hour reporting to the Department and this notification occurs under current regulations at § 109.701(a)(3)(i) or § 109.701(a)(3)(ii). However, there are situations under the RTCR that would not be covered under subparagraphs (i) and (ii); therefore the addition of § 109.701(a)(3)(iv) is necessary. For example, seasonal systems conducting start-up monitoring as required under § 109.301(3)(v) that learn of *E. coli*-positive start-up samples are not required to notify the department under § 109.701(a)(3)(i) or § 109.701(a)(3)(ii). Therefore, § 109.701(a)(3)(iv) is necessary, so that seasonal systems notify the Department in one hour in order to confer with the Department regarding potential steps to take in order to address the *E. coli* results prior to serving water to the public.

Because this violation is a reporting violation, the Department has moved the public notification text from § 109.409(a)(3) to § 109.410(a)(5) as suggested, which makes failure to report an *E. coli* MCL violation or an *E. coli*-positive routine or check sample a Tier 3 violation.

15. Comment:

Repeat coliform monitoring locations must be included in sample siting plans.

EPA's RTCR does not lay out specific sample siting plan details except that they should be representative of the water in the distribution system. As referenced in Agreement in Principle, Total Coliform Rule – Distribution System Federal Advisory Committee (TCRDSAC) pg. 15, 16, systems should have the flexibility to propose repeat monitoring locations that may be representative of a pathway for contamination (ex: storage tank) as

opposed to the current requirement of 5 connections upstream and downstream. The RTCR is intended to be an incentive for systems to conduct more monitoring than is required, to investigate potential problems in the distribution system, and use monitoring as a tool to assist in uncovering problems where they exist. Nothing shall preclude a system from taking more than the minimum number of required routine samples and including them in calculating compliance with RTCR, if the samples are taken in accordance with the approved sample siting plan.

Corrective Action:

Philadelphia Water strongly recommends that PaDEP allow flexibility in sample siting plans and follow the EPA's RTCR by allowing public water systems utilizing advanced technologies to develop better alternative repeat sampling plans than the non-science based 5 upstream/downstream requirement. **(4)**

Response:

The first sentence of 40 CFR 141.853(a)(5) states:

> "Systems must identify repeat monitoring locations in the sample siting plan."

Further, the EPA provides clarification on page 13 of the September 2014 Interim Final version of *The Revised Total Coliform Rule (RTCR) State Implementation Guidance*. This document states:

> "The sample siting plan must contain routine and repeat sampling locations representative of the distribution system, along with the sample collection schedule."

Regarding additional monitoring, see the response to Comment #20.

16. Comment:

16. PaDEP should not require a "certified operator" or "professional engineer" to complete Level 1 and Level 2 assessments.

Larger water systems have numerous individuals (environmental scientists, chemists, biologists, engineers, laboratory director, water quality manager, etc.) who are not necessarily certified operators or certified professional engineers, but who may have vast experience in distribution system water quality.

In many instances, a variety of personnel may be well qualified to conduct an assessment, none of whom are "certified operators" or "professional engineers", but are qualified to conduct an assessment.

Therefore, each system should designate these appropriate personnel and submit this list of qualified individuals to PaDEP, and in the absence of a "certified operator" or "professional engineer", these individuals can conduct an assessment. Additionally, personnel such as a laboratory director or water quality manager may not necessarily conduct an assessment, but may oversee and later submit the assessment.

Corrective Action:

Philadelphia Water strongly recommends that PaDEP allow individuals designated by the public water system and approved by PaDEP, but not necessarily "certified operators" or "professional engineers", be eligible to conduct assessments. In many instances, a variety of personnel may be well qualified to conduct an assessment, none of whom are "certified operators" or "professional engineers", but are qualified to conduct an assessment. **(4)**

Response:

EPA deferred these decisions to the states. Regarding Level 1 assessments, certified operators are not required to conduct these assessments. Section 109.705(b)(3) provides that a Level 1 assessment must be conducted by competent personnel qualified to operate and monitor the water system's facilities.. Section 109.705(b)(3) ensures that a person with knowledge of the water systems actually conducts the investigation to determine, when possible, the likely reason the assessment was triggered.

Level 2 Assessments provide a more detailed examination of the PWS than a Level 1 Assessment. The Department believes that an appropriately certified operator is the proper qualification for ensuring that a sufficient Level 2 assessment is adequately conducted. The regulation does not prevent other individuals from contributing to the assessment process. In fact, the Department encourages the Assessor to utilize the assistance of other individuals with expertise on various portions of the water system when conducting a Level 2 assessment. For example, an operator who works primarily in the distribution system may be the most appropriate individual to consult when investigating distribution pressures and line breaks. However, an engineer who oversaw the installation of a storage tank may be a key contributor when assessing the integrity from the tank. Other individuals such as geologists and lab analysts are useful when answering source or water quality monitoring questions.

17. Comment:

Outside of RTCR treatment technique or E. coli MCL violation, PaDEP should not conduct a Level 1 or Level 2 assessment in addition to the assessment conducted by the public water system.

Provided that PaDEP's assessment is in the context of RTCR, otherwise if it is outside of that, it should be called something else other than Level 1 or Level 2 assessment to avoid confusion among water systems.

Corrective Action:

Philadelphia Water strongly recommends that if PaDEP conducts assessments outside of RTCR that those assessments are not referred to as Level 1 or Level 2 assessments. This will avoid exposing public water systems to unnecessary enforcement actions, public notifications and subsequent remedial action costs. A simple language clarification could avoid these risks as well as make PaDEP enforcement actions far less likely since compliance standards are now clearly articulated. **(4)**

Response:

The Department agrees that assessments conducted by the Department under § 109.705(b)(5) would be in the context of an assessment triggered under § 109.202(c)(4) as provided in § 109.705(b).

18. Comment:

§ 109.202(c)(4)(i), (ii), (iii).

Under (iii), CWA disagrees with DEP directing a system to conduct an assessment if other situations outside § 109.701(a)(3)(iii) arise for any particular water quality situation. Assessments are designed to be applied for specific response to Total Coliform and *E. coli* and using assessments otherwise could impart confusion among water suppliers and regulators. While CWA agrees that DEP may have other water quality concerns where other "investigations" may be warranted, these should not be incorporated here or referred to as "assessments" to prevent confusion. **(1)**

Response:

See response to Comment #4. The Department has deleted subparagraph §109.202(c)(4)(iii).

19. Comment:

§109.301(3).

The PN requirement as stated is confusing and may not be required for every single *E. coli* positive sample. If a system foregoes *E. coli* testing on a positive total coliform sample, this does not always result in a violation of the MCL. If, for example, this is the original-routine sample, then the system must collect a set of repeat samples prior to making an MCL determination (see §109.301(3)(iv)(A)) relating to compliance determinations. CWA recommends that the language be clarified to say that the sample must be counted as *E. coli* positive and must be used to determine MCL compliance and that DEP must be notified of the positive sample result within 1 hour. **(1)**

Response:

Section 109.301(3) has been revised as follows:

> (3) *Monitoring requirements for coliforms.* Public water systems shall determine the presence or absence of total coliforms for each routine or check sample; and, the presence or absence of **[fecal coliforms or]** *E. coli* for a total coliform positive sample in accordance with analytical techniques approved by the Department under § 109.304 (relating to analytical requirements). A system may forego **[fecal coliform or]** *E. coli* testing on a total coliform-positive sample if the system assumes that any total coliform-positive sample is also **[fecal coliform-]** ***E. coli-***positive. A system which chooses to forego **[fecal coliform or]** *E. coli* testing shall, under § 109.701(a)(3), notify the

Department within 1 hour after the water system learns of the violation or the situation, and shall provide public notice in accordance with § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice) **IF THERE IS A VIOLATION OF THE *E. COLI* MCL AS SET FORTH IN SUBPARAGRAPH (iv).**

20. Comment:

§109.301(3)(i)(D)

CWA agrees with DEP in allowing PWSs to collect more than the required number of samples for compliance with the TCR as explained in the sample siting plan. However, CWA recommends that the PWSs be allowed to collect more samples than required in unusual circumstances, such as following positive total coliform samples, when the PWS believes there is reason to collect more samples to ensure public health protection. This flexibility in the sampling site plan should be noted in the PWS's sample siting plan. **(1)**

Response:

Additional samples are allowed under §109.301(3)(v), but these special purpose samples are not to be used to determine whether the coliform treatment technique trigger has been exceeded. Further, as these special purpose samples are not used to determine whether the coliform treatment technique trigger has been exceeded, there is no requirement that they be collected in accordance with the sample siting plan. This amendment is consistent with and reflects the federal requirement under 40 CFR 141.853(b).

21. Comment:

§109.301(3)(ii)(B)

We concur with DEP for following these EPA revisions in repeat sampling requirements. The current TCR is complicated for smaller systems to determine the appropriate number of repeat samples required. This change clarifies that every positive total coliform sample requires three repeat samples for all PWSs regardless of size.

However, CWA strongly recommends that DEP follow the EPA's revision (refer to 40 CFR § 141.853(a)(5)(i)) by allowing PWSs to develop alternative repeat sampling plans in addition to utilizing the default +/- 5 upstream/downstream requirements. PWSs should be given flexibility to assess the current situation and then to utilize alternative plans or default to +/- 5 upstream and downstream, whichever is appropriate. PWSs can select, under current conditions, the most valid upstream and downstream sample locations to meet the intent of the rule by reviewing variables that impact flow and direction of flow in the system such as valve positions, storage tank in service or out of service for maintenance, utilizing hydraulic modeling etc. The distribution systems are complex and are not static and the PWS is best able to evaluate the system operation on a real-time basis to select the appropriate repeat sample locations. Allowing a PWS to better determine the repeat sample locations improves the chances of identifying any on-going contamination and, therefore, better protects public health. **(1)**

Response:

See responses to Comment #5 and #97.

22. Comment:

§109.301(3)(iii)(A)(III)

Invalidation should be used for both total coliform and *E. coli* sample results when contamination is deemed to come from the faucet, sample tap, the internal plumbing system, etc. This determination should be made following discussions between the PWS and DEP. **(1)**

Response:

Section 109.301(3)(iii)(A)(III) is consistent with the federal rule found in 40 CFR 141.853(c)(1)(ii), which is specific to the invalidation of total coliform samples.

23. Comment

§109.301(3)(iv)

CWA supports the MCL determination being based on *E. coli* and also on the MCL determination in clause (A) above. CWA notes that sub-clauses I-IV support CWAs comment above [comment 19] to §109.301(3) when not every *E. coli* positive result generates an MCL violation requiring PN. **(1)**

Response

The Department agrees.

24. Comment:

§109.303(a)(2)

CWA agrees with TCR sampling locations that are "representative" of water throughout the distribution system. These samples should be collected at regular intervals throughout the monitoring period, however, CWA advocates that sampling plans be flexible such that the plan allows and supports operational/business efficiencies, customer service demands, special projects and other unusual circumstances such as road closures, inclement weather, icy/snow covered road conditions, flooding events and sampling personnel schedules (e.g. vacation, sick and Holiday time; company required training, etc.). Often times, a PWS may only have 1 person designated as the primary sampler or, in cases of smaller PWSs, the sampling may be done by a certified commercial laboratory that may have limited sampling collection personnel with multiple demands competing for time. Sampling plans, therefore, must be sufficiently flexible, to realistically accommodate for planned, unplanned and unscheduled events. CWS also advocates for written or electronic sample siting plans. **(1)**

Response:

Sampling at regular time intervals is consistent with the federal requirement 40 CFR 141.853(a)(2). If regular time intervals were not required, a system may sample on the first day of one month and the last day of the following month allowing for as many as 60 days between samples (July 2 through August 30 for example).

The Department recognizes that unusual circumstances such as road closures, inclement weather, icy/snow covered road conditions, flooding events and sampling personnel schedules could affect the schedules identified in the sample siting plans. The Department is preparing a Revised Total Coliform Rule Technical Guidance document to provide additional guidance for staff and water systems. The Department's Revised Total Coliform Rule Technical Guidance document will be made available for a separate comment and response process.

25. Comment:

§109.409(a)(3).

CWA disagrees with Tier 2 PNs for failure to report an *E. coli*-positive routine sample that does not result in an MCL violation. Since the routine *E. coli* positive sample requires repeat sampling, a failure to report the routine positive sample does not pose risk to public health itself. This should be a Tier 3 Reporting violation, not a Tier 2 violation. CWA suggests that the language be clarified to reflect that this example be a Tier 2 reporting violation to be consistent with the Federal RTCR reporting violations. **(1)**

Response:

The public notification text has been moved from § 109.409(a)(3) to § 109.410(a)(5) as requested, which makes failure to report an *E. coli* MCL violation or an *E. coli*-positive routine or check sample a Tier 3 violation rather than a Tier 2 violation.

26. Comment

§109.701(a)(5)

CWA agrees that PWSs should have written or electronic sample siting plans, yet plans need to be flexible to accommodate for business/operational efficiency, customer service, sampling personnel availability and unusual events etc. However, CWA strongly discourages incorporation of clauses (D) and (G) above as they are more stringent than requirements of the Federal RTCR, have no benefit to public health protection, are overly time –consuming and burdensome to PWSs and do not allow for the flexibility needed to assess positive total coliform or *E. coli* results on a case-by-case or situational basis.

The Federal Rule at 40 CFR §141.853(a)(5)(i) states, "Systems may propose repeat monitoring locations to the State that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative

fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan."

For example, CWAs current sample siting plan has 64 routine sampling sites; if CWA must select 2 "fixed" repeat sampling locations for each routine location, then the sample siting plan would contain, at minimum, 192 sampling locations. CWA also notes that simply selecting 2 "fixed" addresses or range of addresses for repeat locations is not sufficient. CWA and other PWSs would need to spend additional time investigating and testing potential sample taps within each premise to find suitable sampling taps to include in the siting plan. In addition, these "fixed" locations may not be reflective of operational flow patterns in the distribution system at the given time when repeat sampling is required. The PWS is better able to select the appropriate repeat sampling locations on a case-by-case basis at the specific point in time to better protect public health and this selection process can be documented in an SOP.

Given that total coliform and *E. coli* positive sample results are not frequently detected under routine conditions, month after month and year after year, it is not appropriate to force all PWSs to exhaust efforts and resources and to absorb the costs of "pre-selecting" repeat monitoring locations that, in actual practice, may never be used or needed. CWS, therefore, recommends that clause (D) not be adopted.

Similarly, clause (G) above is more stringent than the Federal RTCR. Federal RTCR does not require PWSs to identify and document accessibility for routine and repeat monitoring locations in the sample siting plan. Requiring PWSs to pre-determine accessibility of repeat monitoring locations and documenting such in sample siting plans has limited to no value to the PWS. PWSs are accustomed to reviewing system operations and determining accessible repeat monitoring locations on a real-time, as needed bases. CWA recommends that this practice be continued and that clause (G) not be adopted. **(1)**

Response:

See responses to Comment #5, #15, and #97. Regarding the requirement to determine accessibility of sample locations, the accessibility of routine monitoring locations is an existing condition for the Department's approval of a system's sample siting plan (per § 109.701(a)(5)(ii)(B)). Determining accessibility of all sample locations is an important component of a sample siting plan in order to appropriately schedule routine sample collection as well as to help determine which of the 5 locations on either side of a routine positive sample may be available within the 24-hour sample collection window.

27. Comment:

§ 109.705(b)(3), (4)

The Level 1 assessment should be conducted and approved by persons appropriate within or to the PWS. This person, for example, could be an engineer or water quality person that may not "operate and maintain" the system per se but may have areas of expertise to complete the assessment. The Level 2 assessment does not have to be fully "conducted" by someone meeting the qualifications as other personnel may assist in the assessment, however, the

assessment should be reviewed and approved by this qualified person. CWA recommends that the language be clarified to reflect these comments. **(1)**

Response:

See response to Comment #16.

28. Comment:

CWA responses to the Board's request for comments on the following:

"Why alternate repeat monitoring locations should be allowed"

As noted in CWA response [in Comment #21] above, CWA strongly recommends that DEP follow the EPA's revision by allowing PWSs to develop alternative repeat sampling plans in addition to utilizing the default +/- 5 upstream/downstream requirements. PWSs should be given flexibility to assess the current situation and then to utilize alternative plans or default to +/- upstream and downstream, whichever is appropriate. PWSs can select, under current conditions, the most valid upstream and downstream sample locations to meet the intent of the rule by reviewing variables that impact flow and direction of flow in the system such as valve positions, storage tanks in service or out of service for maintenance, utilizing hydraulic modeling etc. The distribution systems are complex and are not static and the PWS is best able to evaluate the system operation on a real-time basis to select the appropriate repeat sampling locations Allowing a PWS to better determine the repeat sample locations improves the chances of identifying any on-going contamination and, therefore, better protects public health. CWA asks that the Board be mindful that there is a 24 hour time requirement to perform the repeat sampling. To maintain efficiency and to identify potential pathways to contamination, the process of repeat sampling selection should be in the hands of the PWSs, as that process is now. However, CWA does support EPA's requirement to have an SOP, for how a PWS may determine or select a repeat sampling location, included in the PWS sample siting plan.

"How a PWS would demonstrate that an alternative repeat monitoring location represents the pathway for contamination that led to the original coliform-positive sample in the distribution."

As noted in CWA response [in Comment #21] above, CWA strongly recommends that PWSs be given flexibility to assess the situation and then utilize alternative plans and/or default to +/- 5 upstream and downstream service connections, whichever is appropriate and is best able to identify any pathway to contamination. Both of these options for repeat sample site selection can be documented in an SOP. PWSs can select, under current conditions, the most valid upstream and downstream sample locations to meet the intent of the rule by reviewing variables that impact flow and direction of flow in the system such as valve positions, storage tanks in service or out of service for maintenance, utilizing hydraulic modeling etc. The distribution systems are complex and are not static and the PWS is best able to evaluate the system operation on a real-time basis to select the appropriate repeat sampling locations. Allowing a PWS to better determine the repeat sample locations improves the chances of identifying any on-going contamination and, therefore, better protects public health.

"Whether only fixed alternative repeat monitoring locations should be allowed or if a standard operating procedure for choosing locations may also be allowed and why"

Again as noted in CWA response [in Comment #21] above, CWA strongly recommends that PWSs be given flexibility to assess the situation and then utilize alternative plans and/or default to +/- 5 upstream and downstream service connections, whichever is appropriate to select repeat sampling locations. The Federal rule, 40 CFR §141.853(a)(5)(i), allows for selection of alternate repeat sampling locations via SOP. PWSs can select, under current conditions, the most valid upstream and downstream sample locations to meet the intent of the rule by reviewing variable that impact flow and direction of flow in the system such as valve positions, storage tanks in service or out of service for maintenance, utilizing hydraulic modeling etc. The distribution systems are complex and are not static and the PWS is best able to evaluate the system operation on a real-time basis to select the appropriate repeat sampling locations. Allowing a PWS to better determine the repeat sample locations improves the chances of identifying any on-going contamination and, therefore, better protects public health.

"Whether alternative repeat monitoring locations must be submitted under the signature of a certified operator"

CWA strongly discourages requiring a certified operator to submit the alternative repeat monitoring locations. A "one size fits all" approach is not appropriate for every situation or every system. In many PWSs, the certified operator(s) may only operate the water treatment plant and may have very limited or no knowledge of the distribution system operation and water quality. Similar to the Level 1 assessment comment as noted [in comment #27] above, CWA recommends that alternate repeat sampling locations be submitted and approved by persons appropriate within or to the PWS. This person, for example, could be a sample collector, distribution person, engineer or water quality person, etc. that may not "operate and maintain" the system per se but may have areas of expertise sufficient to complete the assessment. In many instances, a variety of personnel at a PWS may be involved in selection of the repeat monitoring locations and it is possible that none of them are "certified operators". PWSs should have flexibility and authority in utilizing whatever resources available, including various personnel, to best determine selection of repeat monitoring locations to ensure public health protection.

"Whether alternative repeat monitoring locations must be submitted under the seal of a professional engineer"

CWA strongly discourages requiring a professional engineer to submit the alternative repeat monitoring locations. A "one size fits all" approach is not appropriate for every situation or every system. CWA recommends that alternate repeat sampling locations be submitted and approved by persons appropriate within or to the PWS. PWSs should have flexibility and authority in utilizing whatever resources available, including various personnel, to best determine selection of repeat monitoring locations to ensure public health protection. Requiring a professional engineer to submit alternative repeat sampling locations is not appropriate as not every professional engineer is familiar with distribution hydraulics, operations etc. This requirement would also put unjustified time and financial burdens on PWSs and there may be no benefit to public health by incorporating this.

"Whether alternative locations should only be allowed for systems serving greater than 9,999 people"

As noted in CWA response [in Comment #21] above, CWA strongly recommends that PWSs of all sizes be given flexibility to assess the situation and then utilize alternative plans and/or default to +/- 5 upstream and downstream service connections, whichever is appropriate and is best able to identify any pathway to contamination. PWSs should have flexibility and authority in utilizing whatever resources available, including various personnel, to best determine selection of repeat monitoring locations to ensure public health protection. **(1)**

Response:

See responses to Comment #5, #9, #10, #11, #15 and #97.

29. Comment:

Section 109.701(a)(5)(i)(D) is proposed to be added to clarify that repeat coliform monitoring locations must be included in sample siting plans.

The Department does not include, nor does it acknowledge that the federal rule allows flexibility for water systems to utilize an SOP (Standard Operating Procedures) to select repeat monitoring locations. The Department is requiring that repeat monitoring locations be pre-identified, static, and listed in the sampling plan. Specifically, the TAC recommends against this, noting that identifying specific addresses is unworkable for some water systems. Additionally, I had detailed and made apparent in in my oral testimony, flexibility as defined in the current federal RTCR is necessary.

The Department and the utility do not benefit by pre-identifying these locations and in fact pre-identification can inhibit utilities from correctly identifying or even searching for the actual potential pathways or failures. By identifying these locations in advance presumes knowledge of all of the water systems' potential operational conditions in advance of any potential Coliform positive event. Additionally, it limits the utility to assess, in real-time, using technology (water system modeling) to assess the factors impacting the system's flow dynamics. For a simplified example, picture a "T" intersection with a pump at one end, a large customer at the far end, and water storage tank on the third leg. The sample location is near the intersection on the leg leading to the tank. If the pump is running to feed the customer and fill the tank the upstream will be on the pump side, the downstream will be on the tank side. However, when the pump is off, the tank will supply the water to the customer and therefore the upstream will be on the tank-leg but the downstream will be on the customer side of the sample location. Consider that the sample might have been collected after business hours (or no usage at the large customer) – and how might that change the up/down stream sample locations. The point is that this is a very simplified example with only three factors - and if the objective is to truly track-down a potential root cause of contamination, then the Department should make provisions in their language to encourage the use of technology and advanced modeling techniques to aid the utilities in meeting the intent of the Federal RTCR. Now if we mentally picture how the majority of distribution systems are laid-out, there are multiple intersections, multiple tanks, pumps, pressure zone boundaries, regulating valves, closed or throttled valves, and other dynamic conditions that

change on an hourly, daily, seasonal or situational basis that will confound efforts to pre-identify the up/downstream locations.

Secondly, identifying up/downstream locations will take time and money that will not be of benefit to the utility. I make this statement based on a few factors. I am required to submit results from 120 compliance Coliform samples per month. One might assume that 50 different locations might be part of the sampling plan to collect these samples from. The PADEP's proposed version of the RTCR will now require that I develop and pre-evaluate a minimum of 500 more sample locations. That is 5-up and 5-downstream locations for each sampling location, and all of this will likely be required to take place during off-hours while customers are home or during hours where a supervisor might grant a utility worker access and accurately respond to their questions. This will take considerable time and cost significant amount of money to accomplish. Additionally, the day after this list is developed it is already obsolete as our utility has no control over the actual conditions at these additional locations. The reason that this is significant is that there are many critical factors involved in selecting a sample location. Any home or business that has any of the following cannot be used as a reliable sampling location: automatic faucets, single handled hot/cold faucets, a softener, a filter or any appurtenance, etc… So, the day after I've identified all 500 (or more) locations and pre-evaluated them, the home owner or business may change one of the above conditions or change fixtures making that an unusable sample location. So with that in mind, I know that every likely sample location must be re-evaluated in the heat-of-the-moment during a total coliform positive event, regardless of whether it was pre-vetted or not.

The solution is to encourage water systems to develop an SOP as part of their plan for selection of condition appropriate up/downstream repeat sample locations. This will enable the utility and the Department to more effectively protect public health via the "find-and-fix" approach referenced in the Federal RTCR. Not providing this flexibility will impede utilities, forcing them to fit a square peg into a round hole, and will cost serious money for little or no return on that investment. **(2)**

Response:

See responses to Comment #5, #15 and #97.

30. Comment:

109.303. Sampling Requirements (Section a(2)) The Department needs to include language clarifying "collected at regular intervals throughout the monitoring period".

The Department has verbally expressed that the intent of requiring sample collection schedules as part of the sample siting plan should not be interpreted as limiting or confining for certified external contract labs that collect and analyze coliform samples for many systems nor should it be limiting for medium and larger systems that due to sheer volume of required samples per month, must spread the sample collection evenly through the month. The expressed intent was targeting small systems that are required to collect a single digit number of samples per month – to keep them from collecting on the 30th of the month and then collecting on the 1st of the following month leaving a potential two month window with no samples being collected. Unfortunately the Department has failed to include language to

detail this intent, leaving the interpretation up to local sanitarians who will have no guidance other than what will appear in a future version of Chapter 109. It will be likely that a sanitarian in one district may interpret this language as elastic while another in the next district may interpret it as a legal requirement to collect a specific sample on a specific day. The water system may operate in both districts with and be subjected to wildly different interpretations of the same language – I've experienced this first-hand, many times in the past. The language needs to specifically identify the need for schedule flexibility for business and operational needs and efficiencies. Additionally the language must provide flexibility for scheduling changes due to severe inclement weather (snow, ice, flood, and resultant conditions associated), construction projects, holidays, vacations, operational and customer service priorities, personnel issues, and ongoing training.

The solution is for the Department to clarify the language to allow flexibility in scheduling sample collection. **(2)**

Response:

Section 109.303 is consistent with the federal rule at 40 CFR 141.853(a)(1) and (2) and already allows this flexibility. In addition, the Department is preparing a Revised Total Coliform Rule Technical Guidance document to provide additional guidance for staff and water systems. The Department's Revised Total Coliform Rule Technical Guidance document will be made available for a separate comment and response process.

31. Comment:

109.202. State MCLs, MRDLs and treatment technique requirements (Section(c)(4)(iii)) The Department may direct a system to conduct a Level 1or Level 2 assessment if circumstances exist which may adversely affect drinking water quality including, but not limited to, the situations specified in 109.701(a)(3)(iii)

The Department should not direct systems to conduct 'assessments' as defined by the RTCR for reasons unrelated to the RTCR.

The Department already has the authority to conduct or request that a water system conduct investigations into "circumstances that exist which may adversely affect drinking water quality" but those investigations should not be identified as "assessments" as defined in the proposed RTCR. Identifying these other investigations as assessments will lead to confusion for the suppliers, the regulators, and the interactions between the two as these 'assessments' are designed for response to coliform positive events. **(2)**

Response:

See response to Comment #4. The Department has deleted proposed subparagraph §109.202(c)(4)(iii) which would have authorized the Department to direct a system to conduct an assessment if circumstances exist which may adversely affect water quality.

32. Comment:

109.301. General monitoring requirements Monitoring requirements for coliforms (Section 3) A system which chooses to forego E. coli testing shall, under 109.701(a)(3), notify the Department within one hour after the water system learns of the violation or the situation and shall provide public notice in accordance with 109.408. Similarly, failing to report an E. coli positive routine sample should not generate an automatic Tier 2 violation and subsequent public notification as stated in 109.409.Tier 2 public notices – categories, timing and delivery of notice (a) General violation categories and other situations requiring a Tier 2 public notice (Section a(3))

Not every E. coli positive event is an MCL violation so this language needs to be adjusted accordingly. Additionally, one of the primary drivers for creating the federal RTCR was to eliminate unwarranted, unnecessary, and excessive public notifications, especially for matters that were not related to public health.

For clarification, should a system receive an E. coli positive result on a routine sample, it must notify the Department of the positive result and go collect three more samples (resample, upstream, and downstream). Should any of these samples be positive for E. coli then the water system has violated the MCL for E. coli and needs to inform the Department and issue a public notification as mentioned above. We would suggest that should a system forego E. coli testing on a routine coliform positive sample, it will be counted as an E. coli positive and the system must notify the Department within 1 hour and proceed with the resampling. However, any system that foregoes E. coli testing on any resample following an E. coli positive shall, under 109.701(a)(3), notify the Department within one hour after the water system learns of the violation or the situation and shall provide public notice in accordance with 109.408. We believe the Department has correctly spelled out the compliance criteria in 109.301. General monitoring requirements – Monitoring requirements for coliforms, Compliance determinations Section (Section 3(iv)) and should adjust the above mentioned 109.301. General monitoring requirements Monitoring requirements for coliforms (Section 3) to match – as not every E. coli positive sample result causes and MCL violation, and therefore would only require public notification when the MCL is exceeded. **(2)**

Response:

See responses to Comment #14 and #19.

33. Comment:

Response to Questions from the Board

1) Why alternate repeat monitoring locations should be allowed

The York Water Company strongly encourages DEP to allow alternate repeat monitoring locations as stated in the Federal RTCR 40 CFR 141.853 (a)(5)(i). As stated in comment # [29] in this document, water systems should be encouraged to utilize technology and apply the conditions during the sampling event to correctly identify the upstream and downstream locations. Limiting this flexibility will severely inhibit utilities abilities to identify and rectify

any system specific defect or contamination. The flow direction in the distribution system changes regularly and in response to different events such as tanks filling or draining to feed the system, pressure regulating valves and altitude valves diverting water to or from certain areas, pumps running or not, bypass piping or construction related activities, etc… all require that a system evaluate in real-time the hydraulic conditions and choose their repeat monitoring locations accordingly. SOPs to determine the correct alternate repeat monitoring locations that follow the EPA's requirements should be encouraged in PA. **(2)**

Response:

See responses to Comment #5, #15 and #97.

34. Comment:

Response to Questions from the Board

2) How a PWS would demonstrate that an alternative repeat monitoring location represents the pathway for contamination that led to the original coliform-positive sample in the distribution system.

As stated in response #1 and in answer #1, The York Water Company believes that utilizing ever advancing technology and system specific information is the only way to correctly identify potential pathways and should therefore be encouraged by the Department. We strongly recommend that water systems be granted the flexibility that we presently have to select the most correct up/downstream sample locations. Please refer to my example in response #1 of how distribution systems change flow directions in even the simplest of arrangements. **(2)**

Response:

See responses to Comment #5, #15 and #97.

35. Comment:

Response to Questions from the Board

3) Whether only fixed alternative repeat monitoring locations should be allowed or if a standard operating procedure for choosing locations may also be allowed and why.

The York Water Company strongly encourages the Department to allow SOPs as part of a system's sampling plan for determination of alternative monitoring locations. As stated in response #1, answer #1, and answer #2, we believe that the Department should be encouraging the use of technology (hydraulic modeling software – which is regularly becoming less expensive and more interactive) and system specific conditions (tank filling/draining, pumps on/off, valves open, closed, or throttled, flushing, construction, breaks, etc..) to correctly identify in real-time the appropriate up/downstream repeat monitoring locations. **(2)**

Response:

See responses to Comment #5, #15 and #97.

36. Comment:

Response to Questions from the Board

4) Whether alternative repeat monitoring locations must be submitted under the signature of a certified operator.

The York Water Company does not believe that the repeat monitoring locations need to be submitted under the signature of a certified operator. Many certified operators may not have any interaction with the distribution system and therefore less knowledge than another individual in or outside the company. It should be left to the utility to decide who is most qualified within their organization, whether they are an engineer, a water quality person, an operator, a sample collector, a supervisor, or a distribution specialist to submit the sampling plan with alternative repeat monitoring locations. **(2)**

Response:

See response to Comment #9.

37. Comment:

Response to Questions from the Board

5) Whether alternative repeat monitoring locations must be submitted under the seal of a professional engineer.

The York Water Company strongly discourages the requiring the services of a professional engineer in order to submit the sampling plan with alternative repeat monitoring locations. One single approach will not work for all systems. Many systems do not employ the services of a professional engineer regularly and the costs associated are unwarranted and potentially burdensome. **(2)**

Response:

See response to Comment #10.

38. Comment:

Response to Questions from the Board

6) Whether alternate locations should only be allowed for systems serving greater than 9,999 people.

As noted in response #1, answer #1, #2, and #3, The York Water Company strongly suggests that the Department allow water systems of all sizes to utilize alternate repeat monitoring locations.

Water systems should have the flexibility to determine, in real-time, based upon real-world conditions where the appropriate up/downstream sampling locations should be. Locking in fixed repeat monitoring locations can actually have the opposite impact of that which is desired. It might cause or create an atmosphere where apathy will be accepted because someone created the 'plan' and only the specified locations can be used as repeat monitoring locations – even though system conditions may have changed so dramatically that the up and downstream sample locations may no longer be part of the flow-path of a potential contaminant or pathway for contamination. Water systems, regardless of size, need flexibility to utilize all of the tools and resources available in order to properly protect public health.

For a simplified example, picture a "T" intersection with a pump at one end, a large customer at the far end, and water storage tank on the third leg. The sample location is near the intersection on the leg leading to the tank. If the pump is running to feed the customer and fill the tank the upstream will be on the pump side, the downstream will be on the tank side. However, when the pump is off, the tank will supply the water to the customer and therefore the upstream will be on the tank-leg but the downstream will be on the customer side of the sample location. Consider that the sample might have been collected after business hours (or no usage at the large customer) – and how might that change the up/down stream sample locations. The point is that this is a very simplified example with only three factors - and if the objective is to truly track-down a potential root cause of contamination, then the Department should make provisions in their language to encourage all systems to use technology and advanced modeling techniques to aid the utilities in meeting the intent of the Federal RTCR. Now if we mentally picture how the majority of distribution systems are laid-out, there are multiple intersections, multiple tanks, pumps, pressure zone boundaries, regulating valves, closed or throttled valves, and other dynamic conditions that change on an hourly, daily, seasonal or situational basis that will confound efforts to pre-identify the up/downstream locations. **(2)**

Response:

See response to Comment #11.

39. Comment:

Pure-Test specifically objects to:

1) Interim Final FORM 2: Total Coliform Sample Siting Plan Form Instructions 3930-FM-BSDW0525 Rev. 10/2015 (Page 3) Part 2: Sampling Information D. Sample Interval Description: *Indicate the week of the month that sampling will occur.*

2) Interim Final FORM 3: Total Coliform Sample Siting Plan Form Instructions 3930-FM-BSDW0526 Rev. 10/2015 (Page 3) Part 3: Sampling Information D. Sample Interval Description: *These systems should indicate the week of the month in which that day will fall.*

Under the RTCR and the proposed PA rule, Pure-Test will collect samples from more than 400 PWS each month. Forcing labs to collect samples a specific week of each month creates difficult logistics. Pure-Test collects samples in 25 PA counties, including rural areas such as Schuylkill, Perry, Huntingdon, and Somerset. To keep costs low for our customers, Pure-Test tries to group sample collections geographically. The proposal fails to recognize that a given PWS may be inaccessible during the week the siting plan requires a sample collection, due to system maintenance, weather events, or limited access PWS business days or hours. 'PROPOSED RULEMAKING F. Benefits, Costs and Compliance' is not realistic, especially if a lab must go to a rural area a specific week regardless of cost effectiveness. Pure-Test's current standard sample pickup charge is $12 per PWS, and Total Coliform/E. Coli analysis is $26. A Transient Noncommunity Water System sill see an annual increase of $304 (at standard rates) from Pure-Test under the RTCR, not $229.31 as listed in your proposal. This is without considering surcharges for a special trip to accommodate the specific week sampling requirement.

In addition, if the goal of the proposed rule is to bring about 'greater public health protection', the requirement for collecting samples a specific week of the month inhibits that goal; if a PWS knows which week samples will be collected, they may be more likely to make sure that any treatment on their system is working properly during that sampling window, rather than properly maintaining their system throughout the month pending a random sample collection. If the proposal seeks to spread out sample collection from a given system, perhaps it should simply specify that sample collections should be separated by at least 4 days. **(3)**

Response:

Sampling at regular time intervals is consistent with the federal language at 40 CFR 141.853(a)(2). Planning those intervals by identifying a week in the month in which a sample will be collected protects public health my minimizing the days between sample collection. If regular time intervals were not required, a system may sample on the first day of one month and the last day of the following month allowing for as many as 60 days between samples (July 2 through August 30 for example).

Further, § 109.4 requires public water systems to effectively operate and maintain their facilities, including water treatment. Monitoring is only one indication that water systems are complying with § 109.4. Other indications include customer complaints and Department inspections.

Additionally, the Department encourages water systems to contact accredited laboratories to compare costs and to consider other ways to minimize costs such as collecting and delivering samples to the laboratory and maintaining their public water system facilities to help minimize the collection of check samples.

Finally, the Department recognizes that unusual circumstances such as road closures, inclement weather, icy/snow covered road conditions, flooding events and sampling personnel schedules could affect the schedules identified in the sample siting plans. The Department is preparing a Revised Total Coliform Rule Technical Guidance document to provide additional guidance for staff and water systems. The Department's Revised Total

Coliform Rule Technical Guidance document will be made available for a separate comment and response process.

40. Comment:

The agency specifically sought comments regarding the proposed change to Chapter 109 (Safe Drinking Water) Section 109.705(b)(2) which requires the public water system company to submitted a contamination assessment form and accounting of corrective actions taken within 30 days to the agency. The agency seeks comments at to submitting these electronically. While the agency no doubt seeks input from water suppliers, as a member of the public I feel that any assessment and accounting forms following a contamination finding should be filed electronically as soon at completed and no longer than 30 days after the contamination is discovered. These reports should be posted on the PA EPA website and should be available for inspection by the public under the Commonwealth's Sunshine Law. As someone who has the unfortunate experience of being sicken by water borne contamination, though not in the Commonwealth, I and others would we keenly interested in seeing the sample results from local public water systems. **(5)**

Response:

The federal rule [40 CFR § 141.859(b)(3)(i) and 141.859(b)(4)(i)] provides water systems 30 days to complete and submit assessments. The intent of allowing electronic submission is to help speed up the beginning of the Department's review of completed assessments. These assessments may contain sensitive information. Accordingly, the release of information contained in an Assessment may be subject to the provisions of the Pennsylvania Right to Know Law (65 P.S. § 67.701.101 *et seq.*). Information concerning sample results for all public water systems is available for review by visiting: http://www.drinkingwater.state.pa.us/dwrs/HTM/Welcome.html

41. Comment:

I fully support the more stringent proposed addition to Section 109.701(a)(3)(iv), that the public water system supplier notify the PA Department of Environmental Protection within one hour following a positive test for E. coli bacteria. This should be applicable to both Tier 1 and Tier 2 (acute E. Coli contamination, more serious than Tier 2) violations. Again, speed in notification will ultimately benefit the public. **(5)**

Response:

The Department appreciates the commentator's support.

42. Comment:

Proposed § 109.701(d)(9) instructs that water companies maintain a copy of water assessment forms, corrective action instruments for a least five years. I would further urge that these forms be made available online through the PA EPA website for public

inspection. I would argue that the public should be able to track how their water supplier is performing over a five year period. **(5)**

Response:

See responses to Comment #40.

In addition, community water systems will be required under the consumer confidence requirements to include the following information regarding assessments in their annual consumer confidence report provided to their customers: the number of assessments required and completed; the corrective actions required and completed; the reasons for conducting assessments and corrective actions; and whether the system has failed to complete any required assessments or corrective actions.

43. Comment:

The proposed alteration to § 109.301(3)(i)(D) appears to be a sensible, it seeks to prevent water system sampling and then not reporting the location of where the samples were obtained. This proposal states that a system operator may only collect "more than the required minimum amount of samples to be used for compliance during a monitoring period if those samples are included in the sample siting plan." Importantly, "these extra samples must be included in determining whether a Level 1 or Level 2 assessment has been triggered." **(5)**

Response:

The Department appreciates the commentator's support.

44. Comment:

I believe the agency correctly neglected to adopt the proposal Section 109.701(a)(3)(iv) from a water system consultant company which recommended that a positive test sampling for E. Coli bacteria be reported to the PA EPA by the end of that day. I think the more sensible course, and one which the agency advocates is that a test positive shall be reported no less than on one hour to the agency. **(5)**

Response:

The Department appreciates the commentator's support.

45. Comment:

I oppose the deletion from Section 109.303(a)(2) of "an approved." The deletion will allow public water systems not to seek approval from the agency for their sample siting plan locations. At the present time, public water systems require the agency to sign off on the locations of where sampling will occur. I think the Commonwealth would better served by having the sampling locations be approved by the agency, since their expertise in this area is undoubtedly comprehensive. **(5)**

Response:

The Department intends to review sample siting plans when they are submitted. In addition, the Department intends to review sample siting plans during routine inspections at public water systems. This review process will allow for problems with plans to be identified and fixed.

46. Comment:

The Columbia Water Company believes the language in 109.202(c)(4)(iii) allowing PaDEP to require a Level 1 or Level 2 assessment "... if circumstances exist which may adversely affect drinking water quality ..." is too broad and unnecessary. The federal rule meant for these assessments to be used as a tool to address the presence of Total Coliform and E. coli. The proposed language broadens the scope greatly and opens the door for assessments completely unrelated to Total Coliform and E. coli. The other "circumstances which may adversely affect drinking water quality" that would trigger a Level 1 or Level 2 assessment should be defined in this section and should also identify specifically which level of assessment it will trigger. If PaDEP is concerned about other circumstances then they should identify them so that they can be reviewed and discussed. If other specific circumstances are not known at this time, then PaDEP can rely on existing regulations to require investigation and/or assessments to address some future, undefined circumstances. The proposed language goes into great detail defining how and when a Level 1 or Level 2 assessment will be triggered and then effectively erases that language by adding the and-for-any-other -reason language. **(6)**

Response:

The Department has deleted subparagraph §109.202(c)(4)(iii).

47. Comment:

The Columbia Water Company believes the language in 109.409 requiring a Tier 2 Public Notice for failure to report a positive E. coli routine sample within one hour as excessive and unnecessary. One of the driving forces behind revisions to the TCR was to eliminate unnecessarily alarming the public. Failure to report the routine positive sample does not pose any risk to public health, and similar to other failure to report violations, it should be classified as a Tier 3 Reporting violation. We believe requiring a Tier 3 public notification for this type of violation is consistent with the Federal RTCR reporting requirements. **(6)**

Response:

See response to Comment #14.

48. Comment:

The Columbia Water Company believes the language in 109.701(a)(5)(D) and (G) requiring the identification of specific repeat monitoring sites and a description of the accessibility of the sample sites will be overly burdensome for water systems and provides no benefit to public health protection , and in fact may jeopardize public health protection. Water systems are dynamic by nature and the direction of flowing water changes constantly based upon water demands, tank levels and treatment methods/locations. Water could be flowing one direction in the morning while a treatment plant is on line and then a different direction in the afternoon if the treatment plant shuts down. The flow direction could change again should a nearby industry start- up a piece of equipment that uses a lot of water or change yet again if a satellite well is placed in service to meet system demands. Requiring water systems to identify the specific locations for check sample locations prevents operators from using real time data to select the best locations for check samples based upon real-time conditions. Further, the long-term suitability of check sample locations is unpredictable especially in residential areas where there is no legal or practical way for water systems to monitor changes in plumbing, fixtures, maintenance or uses by changing residential populations. Great care must be taken to make sure the sample being taken is representative of the water in the water system and is not inadvertently contaminated by the plumbing or fixtures at the sampling locations. Identifying the exact locations for check samples months, or more likely, years before they will be used forces water systems to collect check samples from locations that may have been modified or neglected by homeowners thereby significantly increasing the risk of obtaining false positive result. This situation will cause unnecessary public alarm and cause water systems to expend money addressing a problem that may not be representative of the actual situation. Water systems may be forced to collect check samples from locations that are no longer suitable for collecting samples simply because years early it was required to set fixed check sample locations with no flexibility to make important changes based upon current conditions. We strongly believe that water systems should be given the option of defining the criteria for selecting the repeat sampling sites on a situational basis using a standard operating procedure which is completely consistent with the federal rule. **(6)**

Response:

See responses to Comment #5, #15, #24, #26 and #97.

49. Comment:

Response to questions raised by the Board

Question: *Why alternative repeat monitoring locations should be allowed.*

Response: We believe the state regulation should follow the federal rule (40 CFR §141.853(a)(5)(i)) and allow water systems the flexibility to assess the real-time situation with real-time data in addition to using the default option of +/- 5 upstream/downstream requirement. See our additional discussion on this issue in our detailed comment [#48] above. **(6)**

Response:

See response to Comment #5.

50. Comment:

Response to questions raised by the Board

Question: *How a PWS would demonstrate that an alternative repeat monitoring location represents the pathway for contamination that led to the original coliform-positive sample in the distribution system.*

Response: As discussed in our detailed comment [#48] above, water systems are dynamic by their very nature and selecting repeat monitoring locations can only be effective using real-time data. Water suppliers will be able to demonstrate that an alternative repeat monitoring location represents the pathway for contamination that led to the original coliform-positive sample by evaluating and identifying the open/close status of valves, tank levels, pump/treatment run schedules, construction status, system maintenance status and historic time-of-day system demands. **(6)**

Response:

See response to Comment #5.

51. Comment:

Response to questions raised by the Board

Question: *Whether only fixed alternative repeat monitoring locations should be allowed or if a standard operation procedure for choosing location may also be allowed and why.*

Response: We believe the state regulation should follow the federal rule (40 CFR § 141.853(a)(5)(i)) and allow water systems the flexibility to assess the real-time situation with real-time data in addition to allowing the default option of +/- 5 upstream/downstream requirement. See our additional discussion on this issue in our detailed comment [#48] above. The federal rule allows for selection of alternative repeat sampling locations by means of standard operation procedure (SOP) and we strongly recommend that the state rule should provide the same flexibility. Fixing check sampling locations months or years before using them would be irresponsible and could cause unnecessary public alarm since the water system would not be afforded the flexibility to address changing circumstances or undesirable changes to plumbing/fixtures which could lead to false positive results. **(6)**

Response:

See response to Comment #5.

52. Comment:

Response to questions raised by the Board

Question: *Whether alternative repeat monitoring location must be submitted under the signature of a certified operator.*

Response: We believe it is unnecessary for alternative repeat monitoring location to be submitted under the signature of a certified operator. Many other professionals within or associated with a water system may have the expertise to identify the appropriate alternative repeat monitoring locations including professional engineers, water quality personnel , distribution employees, system managers and consultants. If the approved SOP is followed and the required support data is provided, we strongly believe submitting it under the signature of a certified operator is unnecessary and an overly narrow approach to addressing the situation. **(6)**

Response:

See response to Comment #9.

53. Comment:

Response to questions raised by the Board

Question: *Whether alternative repeat monitoring location must be submitted under the seal of a professional engineer.*

Response: We believe it is unnecessary for alternative repeat monitoring location to be submitted under the seal of a professional engineer. Many other professionals within or associated with a water system may have the expertise to identify the appropriate alternative repeat monitoring locations including certified operators, water quality personnel , distribution employees, system managers and consultants. If the approved SOP is followed and the required support data is provided, we strongly believe submitting it under the seal of a professional engineer is unnecessary and an overly narrow approach to addressing the situation. **(6)**

Response:

See response to Comment #10.

54. Comment:

Response to questions raised by the Board

Question: *Whether alternative location should only be allowed for systems serving greater than 9,999 people.*

Response: We believe the state regulation should follow the federal rule (40 CFR § 141.853(a)(5)(i)) and allow ALL water systems the flexibility to assess the real-time situation with real- time data in addition to using the default option of +/- 5 upstream/downstream

requirement. See our additional discussion on this issue in our detailed comment [#48] above. If a water system is permitted to operate and is operated by a certified operator, we strongly believe a small water system should be afforded the same responsibilities and privileges as a larger system. Having the qualifications, tools and necessary skills to identify alternative sampling locations has absolutely NO dependence at all upon system size. If small systems are trusted to produce and distribute potable water each and every day to the public, then surely they can be trusted to identify alternative sampling locations using an approved SOP. There is no technical basis for suggesting smaller system would be unable to select alternative sample sites. **(6)**

Response:

See response to Comment #11.

55. Comment:

On October 3, 2015, the Pennsylvania Environmental Quality Board published in the *Pennsylvania Bulletin* proposed regulations to amend 25 PA Code, Chapter 109, to add the Revised Total Coliform Rule (RTCR). These regulations are being adopted to increase public health protection through the reduction of sanitary defects that could provide a pathway for entry of fecal contamination into the water distribution system and to maintain primacy enforcement authority for the drinking water program under the Federal Safe Drinking Water Act. The U.S. Environmental Protection Agency (EPA) promulgated the Federal RTCR in 2013 with a compliance date of April 1, 2016.

We have reviewed these proposed regulations and find that these are no less stringent that the Federal regulations. We encourage the Board to finalize these regulations in a timely manner such that implementation and enforcement in Pennsylvania can begin in April 2016 or shortly thereafter, to reduce any confusion on the part of public water suppliers impacted by this rule.

While EPA offers this determination regarding the stringency of the proposed regulations, this determination does not constitute an approval of a primacy program revision. Final approval can only occur after opportunity for public review and/or hearing of the findings of our regional review of the formal program revision submittal from the Pennsylvania Department of Environmental Protection to the EPA Regional Administrator. These materials are due to EPA no later than February 13, 2017. **(7)**

Response:

The Department thanks EPA for its comment.

56. Comment:

The Water Works Operators' Association of Pennsylvania (WWOAP) supports the Pennsylvania Department of Environmental Protection's (DEP) efforts to increase public health protection by adopting revisions to the Total Coliform Rule (TCR). WWOAP participated as a member of the DEP's Advisory Committee: the Technical Assistance Center

for Small Drinking Water Systems (TAC) at all meetings during the development of the RTCR regulatory package. **(8)**

Response:

The Department thanks WWOAP for its comment.

57. Comment:

WWOAP remains concerned that DEP after substantial input from water industry professionals representing, large, medium, and small water systems and a diversity of system ownership including authorities, investor-owned, municipal and private systems did not adopt the TAC recommendations in the proposed RTCR rulemaking. **(8)**

Response:

The Department considered all comments from TAC during the development of the proposed rulemaking and addressed TAC's comments in the preamble to the proposed rulemaking. In its letter dated October 20th, 2014, TAC provided seven comments related to the RTCR. As provided in that letter those recommendations were numbered: #1, #3, #5, #6, #7, #8 and #9. Of those comments, the Department incorporated three recommendations (#3, #7 and #8) into the proposed regulation. Two recommendations (#6 and #9) are better suited for and will be incorporated into guidance. One recommendation (#5) was used as a mechanism for soliciting additional input via the preamble to the proposed rule. Only one recommendation (#1) has not been incorporated by the Department; and the reason is discussed in the response to Comment #14 of this document.

58. Comment:

WWOAP finds the language in 109.202(c)(4)(iii) allowing DEP to require a Level 1 or Level 2 assessment "…if circumstances exist which may adversely affect drinking water quality…" to be beyond the intent of the RTCR. The Federal RTCR meant for assessments to be used as a tool to specifically address Total Coliform and E.coli. The proposed regulatory language unnecessarily broadens the scope and intent of assessments. While DEP may have other water quality concerns that warrant investigation, these should not be designated as assessments as defined under the RTCR but remain separate to preclude confusion between water suppliers, regulators, and the public.

Under (iii), WWOAP disagrees with DEP directing a system to conduct an assessment if other situations outside § 109.701(a)(3)(iii) arise for any particular water quality situation. The Federal RTCR proposed Assessments to be used as a tool specifically to respond to Total Coliform and E. coli. The proposed language provides significant detail describing how and when a Level 1 or Level 2 Assessment will be required, but is then negated by "for any other" reason language. Use of Assessments for other purposes will be confusing to water suppliers and regulators. WWOAP agrees that DEP may have other water quality concerns that may warrant "investigations" and that DEP can rely on existing regulations to compel a water supplier to conduct the necessary investigation. **(8)**

Response:

The Department has deleted proposed subparagraph §109.202(c)(4)(iii).

59. Comment:

WWOAP finds the language in 109.409 requiring a Tier 2 Public Notice for failure to report a positive E.coli routine sample within one hour is contrary to the intent of the Federal RTCR. One major objective of the Revisions to the Total Coliform Rule was to eliminate alarming the public unnecessarily. The Federal RTCR recognized this objective by requiring a Tier 3 Public Notification. WWOAP urges the EQB to support the change to a Tier 3 Public Notification instead of a Tier 2 Public Notification to be consistent with the intent of the Federal RTCR. **(8)**

Response:

See response to Comment #14.

60. Comment:

WWOAP finds the language in 109.701(a)(5)(D) and (G) requiring the identification of specific monitoring sites and a description of the accessibility of the sample sites is unworkable and unduly burdensome to water systems as well as not protective of public health. DEP stated in the Proposed Rulemaking that, "Section 109.701(a)(5)(i)(D) is proposed to be added to clarify that repeat coliform monitoring locations must be included in sample siting plans. This amendment reflects 40 CFR 141.853(a)(1). TAC noted that identifying specific addresses for check samples is unworkable for some water systems. However, this proposed amendment reflects 40 CFR 141.853(a)(1)." WWOAP maintains that, in fact, this requirement will be unworkable for the majority of water systems. WWOAP further believes that DEP failed to provide the regulatory language in 40 CFR 141.853(a)(1) in its entirety for transparency and comparison and that DEP also failed to acknowledge that the Federal rule allows flexibility for water systems to select repeat monitoring locations. Per 40 CFR § 141.853 (a)(5)(i) General Monitoring requirements for all public water systems Sample Siting Plans states, "Systems may propose repeat monitoring locations to the State that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan." WWOAP, therefore, would recommend the EQB's re-consideration of the proposed amendment by DEP based on the full citation and intent from 40 CFR. **(8)**

Response:

The citation, 40 CFR 141.853(a)(1), in its entirety is:

"(a) *Sample siting plans.* (1) Systems must develop a written sample siting plan that identifies sampling sites and a sample collection schedule that are representative of water throughout the distribution system not later than March 31, 2016. These plans are subject to

State review and revision. Systems must collect total coliform samples according to the written sample siting plan. Monitoring required by §§ 141.854 through 141.858 may take place at a customer's premise, dedicated sampling station, or other designated compliance sampling location. Routine and repeat sample sites and any sampling points necessary to meet the requirements of subpart S must be reflected in the sampling plan."

The Department believes that the final sentence of 40 CFR 141.853(a)(1) supports the identification of sample sites in a sample siting plan.

For further discussion, refer to the response to Comment #5 and #15.

61. Comment:

WWOAP finds that the term "check" is used extensively throughout the proposed regulation to refer to "repeat" monitoring. The term "check" should be replaced consistently with the term "repeat" to conform to the Federal RTCR terminology, Use of the terms "check" and "repeat" interchangeably is confusing for both water systems and regulators. **(8)**

Response:

The regulations consistently refer to "repeat monitoring" when describing monitoring requirements and "check samples" when referring to the type of sample collected when conducting repeat monitoring. For further explanation, see response to Comment #2.

62. Comment:

WWOAP is concerned that DEP may not have reviewed and drafted revisions to the Public Notification (PN) and Consumer Confidence Report (CCR) requirements due to the changes created by the RTCR revisions. This review is needed to preclude compliance uncertainty for both the regulated community and the regulators. **(8)**

Response:

CCR content requirements are incorporated by reference per § 109.416(3). The Department agrees the following Tier 3 PN requirements were missed and are being added per the federal regulation to the final rulemaking as follows:

§ 109.410. Tier 3 public notice—categories, timing and delivery of notice.

(a) *General violation categories and other situations requiring a Tier 3 public notice.* A public water supplier shall provide Tier 3 public notice for the following circumstances:

(1) Monitoring violations under Subchapter C, K, L or M, except when a Tier 1 notice is required under § 109.408 (relating to Tier 1 public notice—categories, timing and delivery of notice) or when the Department determines that a Tier 2 notice is required.

*****

(5) FAILURE TO REPORT AN *E. COLI* MCL VIOLATION OR AN *E. COLI*-POSITIVE ROUTINE OR CHECK SAMPLE AS REQUIRED UNDER § 109.701(a)(3)(iv) (RELATING TO REPORTING AND RECORDKEEPING).

(6) FAILURE TO SUBMIT A COMPLETED ASSESSMENT FORM IN ACCORDANCE WITH § 109.701(a)(9)(ii).

(7) FAILURE TO SUBMIT CERTIFICATION OF COMPLETION OF A DEPARTMENT-APPROVED START-UP PROCEDURE BY A SEASONAL SYSTEM IN ACCORDANCE WITH § 109.715(e) (RELATING TO SEASONAL SYSTEMS).

63. Comment:

§ 109.301. General monitoring requirements – Monitoring requirements for coliforms (Section 3)

WWOAP Comment: The Public Notification requirement as stated is unclear and may not be required for every single E. coli positive sample. If a system foregoes E. coli testing on a positive total coliform sample, this does not always result in a violation of the MCL. If, for example, this is the original-routine sample, then the system must collect a set of repeat (check) samples prior to making an MCL determination (see §109.301(3)(iv)(A)) relating to compliance determinations. WWOAP recommends that the language be clarified to state that the sample must be counted as an E. coli positive and must be used to determine MCL compliance and that DEP must be notified of the positive sample result within 1 hour. **(8)**

Response:

See response to Comment #19.

64. Comment:

§ 109.301. General monitoring requirements – Monitoring requirements for coliforms, Frequency (Section 3(i)(D))

WWOAP Comment: WWOAP agrees with DEP in allowing water systems to collect more than the required number of samples for compliance with the TCR as explained in the sample siting plan. However, WWOAP recommends that water systems be allowed to collect more samples than required in unusual circumstances, such as following positive total coliform samples, when a water system believes there is reason to collect more samples to ensure public health protection. This flexibility in the sampling site plan should be noted in the water system's sample siting plan. **(8)**

Response:

See response to Comment #20.

65. Comment:

§ 109.301. General monitoring requirements – Monitoring requirements for coliforms, Repeat monitoring Section (Section 3(ii)B)

WWOAP Comment: WWOAP concurs with DEP for following the EPA revisions in repeat sampling requirements. The current TCR is complicated for smaller systems to determine the appropriate number of repeat samples required. This RTCR change clarifies that every positive total coliform sample requires three repeat samples for all water systems regardless of water system size. WWOAP, however, strongly recommends that DEP follow the EPA's revision (refer to 40 CFR § 141.853 (a)(5)(i) General Monitoring requirements for all public water systems Sample Siting Plans) by allowing water systems to develop alternative repeat sampling plans in addition to utilizing the default +/- 5 upstream/downstream requirements. Water systems should be given flexibility to assess the current, real-time situation and then to utilize alternative plans or default to +/- 5 upstream and downstream, whichever is appropriate. Water systems can select, under current conditions (frequently using hydraulic models), the most valid upstream and downstream sample locations to meet the intent of the rule by reviewing system dynamics and variables that impact flow volume and direction of flow in the system such as storage tank levels, storage tanks in/out of service, valve positions, system maintenance activities, pump activity, water supply demand, etc. Distribution systems are complex and dynamic and the water systems are best able to evaluate system operation on a real-time basis to select the appropriate repeat sampling locations. Allowing a water system to better determine the repeat sample locations improves the chances of identifying any contamination and/or any sanitary defects, and, therefore, better protect public health. **(8)**

Response:

See responses to Comment #5, #15 and #97.

66. Comment:

§ 109.301. General monitoring requirements – Monitoring requirements for coliforms, Invalidation of total coliform samples Section (Section 3(iii)(A)(III))

WWOAP Comment: Invalidation should be used for both total coliform and E. coli sample results when contamination is deemed to come from the sample tap, the internal plumbing system, etc. This determination should be made following discussion between the water system and DEP. **(8)**

Response:

See response to Comment #22.

67. Comment:

§ 109.301. General monitoring requirements – Monitoring requirements for coliforms, Compliance determinations Section (Section 3(iv))

WWOAP Comment: WWOAP supports the MCL determination being based on E. coli and also on the MCL determination in clause (A) above. Moreover, WWOAP notes that sub-clauses I-IV support WWOAP's Comment [#63] above to § 109.301. General monitoring requirements – Monitoring requirements for coliforms (Section 3), when not every E. coli positive result generates an MCL violation requiring PN. **(8)**

Response:

See response to Comment #19.

68. Comment:

§ 109.303. Sampling requirements (Section a(2))

WWOAP Comment: WWOAP agrees with TCR sampling locations that are "representative" of water throughout the distribution system. These samples should be collected at regular intervals throughout the monitoring period, however, WWOAP advocates that sampling plans need to be flexible to accommodate operational/business efficiencies, particularly for small systems that are dependent on commercial laboratories for sample collection. Small systems will see significant cost increases for sample collection if commercial laboratories cannot continue to collect samples for several small systems on the same date in order to economize on personnel and travel expenses. Sampling plans require flexibility for all water systems due to unusual events such as adverse weather, flooding, road closures, etc. Sampling plans also need to be flexible so that water systems can accommodate sampling personnel schedules including vacations, sick leave, Holidays, etc., since many water systems may have only one designated employee for sample collection, or in the case of small water systems may rely on a commercial laboratory that has multiple water systems' demands competing for sample collection time. **(8)**

Response:

See responses to Comment #24 and #39.

69. Comment:

§ 109.409. Tier 2 public notice – categories, timing and delivery of notice (a) General violation categories and other situations requiring a Tier 2 public notice (Section a(3))

WWOAP Comment: WWOAP disagrees with Tier 2 Public Notifications for failure to report an E.coli-positive routine sample that does not result in an MCL violation. Since the routine E. coli positive sample requires repeat (check) sampling, a failure to report the routine positive sample does not pose risk to public health itself. This should be a Tier 3 Reporting violation, not a Tier 2 Reporting violation to be consistent with the Federal RTCR reporting requirements. **(8)**

Response:

See response to Comment #14.

70. Comment:

§109.701. Reporting and recordkeeping - Siting plan (Section a(5))

WWOAP Comment: WWOAP agrees that water systems should have written or electronic sample siting plans that provide flexibility for planned and unplanned circumstances, see WWOAP Comment [#68]. However, WWOAP strongly disagrees with the incorporation of clauses (D) and (G) above and finds they are more stringent than requirements of the Federal RTCR. Clauses (D) and (G) provide no benefit to public health protection are unworkable, overly time-consuming and burdensome to water systems and do not allow for the flexibility needed to assess positive total coliform or E. coli results on a real-time and current situational basis. Clauses (D) and (G) in fact, may jeopardize public health.

The Federal Rule at 40 CFR § 141.853 (a)(5)(i) General Monitoring requirements for all public water systems Sample Siting Plans states, "*Systems may propose repeat monitoring locations to the State that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan.*"

WWOAP notes that simply selecting two (2) "fixed" addresses or range of addresses for repeat (check) sample locations is not sufficient. Water systems must spend additional time investigating and testing potential sample taps within each sample site location to find suitable sampling taps to include in the siting plan. However, these "fixed" locations may not reflect operational considerations or the distribution system flow direction at the given time when repeat sampling is required. Water systems can more appropriately select the repeat sampling locations on an as needed basis at the specific point in real-time with due consideration to the operational and/or distribution system dynamics to better identify a contamination issue or sanitary defect and to better protect public health. The water system methodology for the sample site selection process can be documented in an SOP.

It is not cost effective to force all water systems to expend limited funds and resources to "pre-select" repeat monitoring locations that, in actual practice, may never be used or needed. WWOAP therefore, recommends that clause (D) not be adopted.

Similarly, clause (G) above is more stringent than the Federal RTCR. The Federal RTCR does not require water systems to identify and document accessibility for routine or repeat monitoring locations in the sample siting plan. Requiring water systems to pre-determine accessibility of repeat monitoring locations and documenting that information in sample siting plans is an exercise with no value. Water systems need to review current operations, in real-time to properly select routine or repeat monitoring locations, including the availability of appropriate sample taps within a premise location. In the same manner that distribution systems are dynamic, sample site locations are also dynamic with changing occupancy and use. The water system has no control over whether a sample location is closed, not open during the time when a repeat sample is required, whether a resident is home or not home, etc. Water systems are accustomed to reviewing system operations, distribution system dynamics and determining the appropriate, as well as, accessible repeat monitoring locations on a real-time, as needed basis. WWOAP recommends that clause (G) not be adopted and

that water systems be allowed to continue to appropriately select sampling locations that assure public health protection. **(8)**

Response:

See responses to Comment #5, #15, #24, #26 and #97.

71. Comment:

§ 109.705. System Evaluations and Assessments (Section b(3),(4))

WWOAP Comment: WWOAP recommends that the language be clarified to state that the Level 1 assessment should be conducted and approved by persons appropriate to the water system. Such persons, for example, could be an engineer, distribution system specialist or water quality specialist that may not "operate or maintain" the system but may have areas of expertise to complete the assessment. Further, that the Level 2 assessment does not have to be fully "conducted" by someone meeting the stated qualifications, but that personnel with expertise may assist in the assessment, providing the assessment is reviewed and approved by the qualified person. **(8)**

Response:

See response to Comment #16.

72. Comment:

WWOAP Responses to the Board's request for Comments on the following Questions:

Question - "Why alternate repeat monitoring locations should be allowed"

WWOAP Response: WWOAP strongly recommends that DEP follow the EPA's revision (refer to 40 CFR § 141.853 (a)(5)(i) General Monitoring requirements for all public water systems Sample Siting Plans) by allowing water systems to develop alternative repeat sampling plans in addition to utilizing the default +/- 5 upstream/downstream requirements. Water systems should be given flexibility to assess the current, real-time situation and then to utilize alternative plans or default to +/- 5 upstream and downstream, whichever is appropriate. Water systems can select, under current conditions (frequently using hydraulic models), the most valid upstream and downstream sample locations to meet the intent of the rule by reviewing system dynamics and variables that impact flow and direction of flow in the system such as storage tank levels, storage tanks in/out of service, valve positions, system maintenance activities, water supply demand, etc.. Distribution systems are complex and dynamic and the water systems are best able to evaluate system operation on a real-time basis to select the appropriate repeat sampling locations. Allowing a water system to better determine the repeat sample locations improves the chances of identifying any contamination and/or any sanitary defects, and, therefore, better protect public health. The process of repeat sample selection needs to be controlled by water systems on a case by case, real-time basis. WWOAP does support EPA's requirement that a water system have an SOP for how a water

system determines or selects repeat sample locations, and that the SOP be included in the water system's sampling plan. **(8)**

Response:

See responses to Comment #5, #15 and #97.

73. Comment:

WWOAP Responses to the Board's request for Comments on the following Questions:

Question - "How a PWS would demonstrate that an alternative repeat monitoring location represents the pathway for contamination that led to the original coliform-positive sample in the distribution system"

WWOAP Response: WWOAP strongly recommends that water systems be given flexibility to assess the situation and then utilize an alternative plan and/or default to +/- 5 upstream and downstream service connections, whichever is appropriate to the current situation and whichever is best able to identify any contamination or pathway to contamination. Both of these options for repeat sample site selection should be documented in an SOP. Water systems can select, under current conditions, the most valid upstream and downstream sample locations to meet the intent of the rule by reviewing variables that impact distribution system dynamics as discussed in WWOAP Comment [#65]. Allowing a water system to appropriately determine the repeat sample locations significantly improves the chances of identifying any contamination or sanitary defect and, therefore, better protects public health. **(8)**

Response:

See responses to Comment #5, #15 and #97.

74. Comment:

WWOAP Responses to the Board's request for Comments on the following Questions:

Question - "Whether only fixed alternative repeat monitoring locations should be allowed or if a standard operating procedure for choosing locations may also be allowed and why"

WWOAP Response: WWOAP references Comment [#65] and the responses to the previous questions. The Federal rule, 40 CFR § 141.853 (a)(5)(i), allows for selection of alternate repeat sampling locations via SOP. **(8)**

Response:

See responses to Comment #5, #15 and #97.

75. Comment:

WWOAP Responses to the Board's request for Comments on the following Questions:

Question - "Whether alternative repeat monitoring locations must be submitted under the signature of a certified operator"

WWOAP Response: WWOAP strongly disagrees with requiring a certified operator to submit the alternative repeat monitoring locations. In many water systems, the certified operator may only operate the treatment facility and may have limited to no interaction with distribution system operation and/or water quality control. WWOAP recommends that the determination of alternative repeat monitoring locations be submitted by the personnel deemed qualified by the water system. In many circumstances, a variety of personnel at a water system with different qualifications and expertise may be involved in determining the criteria for repeat monitoring locations and selecting repeat monitoring locations, all of whom may have no "operating" responsibilities, or be certified operators. Water systems need to have the authority and flexibility to determine what personnel are best utilized in making the best selection of repeat monitoring locations that best protect public health. **(8)**

Response:

See response to Comment #9.

76. Comment:

WWOAP Responses to the Board's request for Comments on the following Questions:

Question - "Whether alternative repeat monitoring locations must be submitted under the seal of a professional engineer"

WWOAP Response: WWOAP strongly disagrees with requiring a professional engineer to submit the alternative repeat monitoring locations. WWOAP believes that the best interests of public health protection are served when the water systems have the authority and flexibility to utilize the most appropriate personnel to identify repeat alternative sample monitoring locations. Every water system does not have an engineer on staff nor does every engineer have the expertise and distribution system familiarity needed to assess the most valid alternative repeat monitoring site locations. WWOAP recommends that alternate repeat sampling locations be submitted and approved by personnel deemed qualified by the water system. Requiring a professional engineer to submit alternative repeat sampling locations puts unjustified time and financial burdens on water systems with no qualitative benefit to public health. **(8)**

Response:

See response to Comment #10.

77. Comment:

WWOAP Responses to the Board's request for Comments on the following Questions:

Question - "Whether alternate locations should only be allowed for systems serving greater than 9,999 people"

WWOAP Response: WWOAP as stated in Comment # [65] and as noted above, strongly recommend that water systems, regardless of size, have the authority and flexibility to assess the real-time situation and then utilize alternative repeat sampling plans and/or default to +/- 5 upstream and downstream service connections, whichever is appropriate and will best identify any contamination and/or any sanitary defect. Water systems should be able to utilize available resources, including personnel with varying expertise, to best determine the selection of repeat monitoring locations to protect public health. **(8)**

Response:

See response to Comment #11.

78. Comment:

PA DEP: 109.301(3)(ii)(E) A community water system serving 1,000 people or fewer or a noncommunity water system may be required to begin monitoring on an alternate schedule established by the Department. This determination will be made based on the results of a special monitoring evaluation performed during a sanitary survey. The system shall continue monitoring on the alternate schedule until otherwise notified by the Department.

LCA: The summary of regulatory requirements notes that this proposed addition reflects 40 CRF 141.854(c)(2), however this is what is written in 40 CFR, § 141.854 *Routine monitoring requirements for non-community water systems serving 1,000 or fewer people using only ground water*. As you can see, the federal regulation does not apply to community water systems. We suggest the federal rule be followed. **(9)**

Response:

This language is consistent with the federal language for community water systems. The Department inadvertently missed providing the additional federal citation that applies to community water systems serving 1,000 people or fewer. The federal citation that should have been included as part of this reference is: 40 CFR 141.855(c)(2).

79. Comment:

PA DEP: 109.701(a)(5) Siting Plan.

LCA: There is no mention of flexibility or allowing a standard operating procedure to determine the best location for check samples. In large water systems with multiple sources and storage facilities, the most representative upstream and downstream sample locations may not be as simple as counting five connections on either side of the original sample site. The federal rule allows the states to accept alternate repeat sample locations. We urge PA

DEP to grant water suppliers this option, if they have the capability *to best verify and determine the extent of potential contamination of the distribution system area based on specific situations (from 141.853(a)(5)(i)*. **(9)**

Response:

See responses to Comment #5, #15, #24, #26 and #97.

80. Comment:

Response to EQB Questions

Why alternative repeat monitoring locations should be allowed.

We are in favor of plan flexibility, including the use of an SOP. We support the utilization of available technology to determine the most representative check sample locations for larger water systems with more complex distribution systems. **(9)**

Response:

See responses to Comment #5, #15 and #97.

81. Comment:

Response to EQB Questions

How a PWS would demonstrate that an alternative repeat monitoring location represents the pathway for contamination that led to the original coliform-positive sample in the distribution system.

LCA: Proof would be a positive check sample or data that demonstrate a compromised system at the collection time of the positive sample. **(9)**

Response:

The Department appreciates the commentator's response.

82. Comment:

Response to EQB Questions

Whether only fixed alternative repeat monitoring locations should be allowed or if a standard operating procedure for choosing locations may also be allowed and why.

LCA: We believe a standard operating procedure should be allowed for repeat monitoring location selection. It would allow the flexibility needed by suppliers to find the most representative sample site locations. **(9)**

Response:

See responses to Comment #5, #15 and #97.

83. Comment:

Response to EQB Questions

Whether alternative repeat monitoring locations must be submitted under the signature of a certified operator.

LCA: We suggest a qualified system official typically responsible for ensuring the proper collection of samples. That person could be an operator, system manager, engineer, laboratory manager or quality manager. **(9)**

Response:

See response to Comment #9.

84. Comment:

Response to EQB Questions - Whether alternative repeat monitoring locations must be submitted under the seal of a professional engineer.

LCA: No, we do not believe this is necessary. However, if a system has the resources, a PE's seal of approval would be a plus. In addition, if a system has a model, undoubtedly engineers were involved with the creation and use of the model. In essence, their approval has already been given for the accuracy of the model. **(9)**

Response:

The Department appreciates the commentator's response. See response to Comment #10.

85. Comment:

Response to EQB Questions - Whether alternative locations should only be allowed for systems serving greater than 9,999 people.

LCA: Perhaps a limitation isn't needed. Logic dictates that larger systems would have the reason—complex distribution systems—and the resources to obtain technology to assist in the selection of best possible locations to collect repeat samples which may be out of the realm of the typical 5 upstream/5 downstream locations. These samples would be alternate repeat sample locations. **(9)**

Response:

The Department appreciates the commentator's response. See response to Comment #11.

86. Comment:

Response to EQB Questions - Electronic reporting of assessment forms

Section 109.705(b)(2) is proposed to be replaced with language requiring a PWS to complete a Level 1 or a Level 2 assessment and submit it to the Department within 30 days of triggering the assessment. This proposed amendment reflects 40 CFR 141.859(b)(3)(i). The Board would like to receive comments regarding interest in submitting these forms electronically.

LCA: Electronic submission of assessment forms would be preferred because it can speed up the process and provide easy access to data for all parties. Greenport is fast becoming a much utilized vehicle for managing data requiring submission to the Department. Adding the assessment forms through Greenport seems like a logical decision that would allow for efficient tracking. **(9)**

Response:

The Department appreciates the commentator's response.

87. Comment:

Comments on Regulatory Analysis Form, Paragraph 9. Should be amended to include reference to the FDA Final Coliform Rule as the FDA has expressed its intent that certain portions of the Rule, specifically Sec.165.110(b)(2), Preempts state regulations for bottled water. **(10)**

Response:

The Food and Drug Administration regulations do not preempt the Department from regulating bottled water systems in the manner set forth in these regulations. As noted in testimony presented to a Congressional Subcommittee by a Deputy Commissioner of the FDA, "[i[n addition to FDA, state and local governments also regulate bottled water. FDA relies on state and local government agencies to approve water sources for safety and sanitary quality, as specified in [21 CFR] 129.3(a)." See Statement of Joshua M. Sharfstein, M.D., Principal Deputy Commissioner of Food and Drugs, Food and Drug Administration before the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce, July 8, 2009. The cited regulation, 21 CFR 129.3(a), provides that an "[a]pproved source . . . means a source of water and the water therefrom , , , that has been inspected and the water sampled, analyzed, and found to be of a safe and sanitary quality according to applicable laws and regulations of State and local government jurisdictions having jurisdiction." The Department has, over the years, worked closely with the FDA and the Pennsylvania Department of Agriculture in the administration and enforcement of laws and regulations relating to the provision of bottled water.

The Pennsylvania Safe Drinking Water Act, 35 P.S. 721.1 *et seq.*, authorizes the Department to regulate public water systems within the Commonwealth. The Act defines a "public water system" as including "a system which provides water for bottling or bulk hauling for human

consumption." As stated in the Preamble to the April 24, 1999 Permit by Rule for Bottled Water Systems, systems providing water for bottling include:

1. Bottled water systems, which provide water for bottling in sealed containers.
2. Vended water systems, which provide water for bottling through the use of water vending machines.
3. Retail water facilities which provide water for bottling by dispensing, at a store, unit servings of water in a customer's or the system's containers.

See 29 Pa.B. 2231 (April 24, 1999).

Bottled water is regulated at the Federal level as a food product by the Food and Drug Administration (FDA) under the Federal Food, Drug and Cosmetic Act (FFDCA) (21 U.S.C.A. §§ 301 – 397). The FDA requirements applicable to bottled water include: food adulteration and misbranding provisions, general food and specific Current Good Manufacturing Practice (CGMP) regulations and standards of identity and quality for bottled water. *Id*.

88. Comment:

Comments on Regulatory Analysis Form, Paragraph 12. Appears inconsistent when applied to the bottled water industry. No other state is required to adopt the RTCR for the bottled water industry. **(10)**

Response:

Bottled water is regulated differently in each state. In Pennsylvania, bottled water is regulated under the Safe Drinking Water Act. See response to Comment #87.

89. Comment:

Comments on Regulatory Analysis Form, Paragraph 14. Please note that the bottled water industry is not represented at the TAC Board. **(10)**

Response:

So noted. The make-up of the TAC Board was established by law. The Board is organized pursuant to the Pennsylvania Small Water Systems Assistance Act (35 P.S. § 724.6). The TAC Board allowed, and actively solicited, comments from members of the public that attended the meetings. The dates, agendas and supplemental materials for each meeting are posted on DEP's website at the following link and in accordance with Sunshine Act requirements.

http://www.dep.pa.gov/PublicParticipation/AdvisoryCommittees/WaterAdvisory/TAC/Pages/default.aspx#.Vry_FfMo69K

90. Comment:

Comments on Regulatory Analysis Form, Paragraph 15. The NAICS Code for Bottled Water is 312112, and the definition is 500 employees. **(10)**

Response:

The Department acknowledges this comment.

91. Comment:

Comments on Revisions to Subchapter J

Generally, the department inadvertently cites 40 CFR 141 et al. as a federal mandate for the regulation of bottled water. Since FDA sets the regulatory mandates for bottled water, the reference would likely be 21 CFR 165 or 210. **(10)**

Response:

See response to Comment #87.

92. Comment:

Comments on Revisions to Subchapter J

Specifically, Section 109.1003 (a)(1) should be amended to be consistent with the FDA's preemptive language for bottled water systems. Entry point sampling, currently interpreted by the department as at the filler; is not the same as a representative sample of primary containers of product. See generally 165.110(b)(2) **(10)**

Response:

The definition of an entry point for bottled water systems is not the subject of this rulemaking. Section 109.1003(b)(1)(i) of the regulations states that "[f]or bottled water systems, each entry point means each finished bottled water product." This provision has been in effect since at least 1992. No amendments or changes to Section 109.1003(b)(1)(i) were proposed during this rulemaking.

93. Comment:

Comments on Revisions to Subchapter J. Section 109.1003(a)(3) appears to be inconsistent with FDA regulations. **(10)**

Response:

Section 109.1003(a)(3) is consistent with 40 CFR Part 141, Subpart Y. In addition, see the response to Comment #87.

94. Comment:

Comments on Revisions to Subchapter J

109.1008(g) perhaps the Department would consider including licensed Geologists, engineers and hydrogeologists to perform assessments, particularly as it relates to watershed evaluations and source construction and protection. Experience indicates these fields of expertize provide the best insight into risk and failure in these two areas. NSF and related entities provide second to none value in the facility operation and sanitation arenas. **(10)**

Response:

Section 109.1008(g) establishes the minimum requirement for conducting assessments. As noted in the response to Comment #16, public water systems are encouraged to have other knowledgeable persons assist in completion of assessments.

95. Comment:

Background and Purpose Section (Section D)

In this section of the Preamble, DEP includes "the lack of a disinfection residual" as a sanitary defect, referencing the EPA RTCR Assessment and Corrective Action Manual. However, the referenced manual does not identify lack of disinfection residual alone as being a pathway for contamination, which is the requirement for a sanitary defect. Aqua recommends that this inaccurate language be corrected or deleted. **(11)**

Response:

See response to Comment #1.

96. Comment:

Alternative Repeat Sample Locations

Consistent with the TAC recommendation, Aqua believes that alternative sites should be allowed when selecting repeat sample locations. Having specific repeat/check samples locations identified in advance for each routine TCR site ignores the practical realities of collecting bacteriological samples in many water systems. Having alternative check sample locations provides the flexibility that water systems need to adequately comply with the RTCR.

Because no two water systems are exactly alike, the Revised Total Coliform Rule should allow a range of options to account for those variations and for the possibility of unusual circumstances that might affect compliance sampling.

Justifications for allowing flexibility include two major themes; logistics and hydraulics:

Logistics

- Specific conditions on a given day. Things change. Because most TCR samples are negative for coliform bacteria, chances are high that check samples would be needed infrequently at a given location. Plans that were made initially might have changed in the months or years since they were developed.

- Access to sample location. In the case of distribution system samples, many of the coliform samples are collected on private property. Unlike municipal water systems, Aqua is a private water company, without special access to public buildings such as libraries, fire houses, police stations, etc. In systems with little or no commercial structures, water samples are often collected at private homes. This makes for the possibility of complicated access to the home or hose bib at a private residence.

- Homes are sold and agreements with a homeowner may not be known to a new homeowner.

- Treatment, such as a softener or filter, could be installed a homeowner.

- Plumbing fixtures or pipe within the premise could be changed without the knowledge of the water system. Although treatment devices and/or plumbing modification has the potential to affect coliform samples, homeowners are under no obligation to inform the water utility.

Hydraulic flow considerations

- Because of the dynamic nature of water distribution systems, flow in a given pipe is not always consistent. The filling or draining of storage tanks, valve operations, main breaks, maintenance of valves, use of hydrants, alternate water sources and flow rates, etc. all affect the flow of water in a given length of pipe. What is considered "upstream" one day may actually be "downstream" on another day or set of conditions. A distribution sample point near a tee might flow one way on a given day, and the other the next. The water system needs the flexibility in check sample locations to allow for the possibility of changing conditions.

- Some of the hydraulic features to be considered are under the control of the water system. However, for a larger utility, coordination between departments may be relevant so that routine maintenance or inspection does not alter flow in the area of check sample locations.

- Some hydraulic features, such as the operation of storage tanks and pressure zones, may have a direct impact on the collection of repeat samples. Tanks that are draining during a certain time of the day may be filling while check samples are being collected. Being locked into fixed check sample sites would not allow the flexibility that is needed to collect appropriate repeat samples.

These provisions for alternative repeat sample locations should extend to systems of all sizes- not just for systems serving greater than 9,999 people. **(11)**

Response:

See responses to Comment #5, #6, #11 and # 85.

97. Comment:

Use of Standard Operating Procedure for Selection of Repeat Sample Locations

A requirement for the use of only fixed repeat sample sites ignores the practical realities of water system operation. Having alternative methods to define repeat sample locations provides the flexibility that water systems need to adequately comply with the RTCR. Justifications for allowing flexibility include two major themes: logistics and hydraulics. An SOP approach represents a scenario that best demonstrates an ability to seek pathways for contamination. Reliance only on fixed repeat sample locations would ignore the possibility of variation in operations and/or customer base.

It has been Aqua's experience that the predefined locations are rarely available the day they are needed. Utilizing an SOP for identifying repeat sample locations as they are needed reduces the burden of identifying and maintaining fixed repeat sample locations for all sample points. Most locations are not likely to ever require a set of repeat samples. While Aqua has historically defined repeat locations, we have found that more often than not, we had to follow the criteria below to identify a new point. This is particularly true for samples in a residential community where most people are at work during the day.

Aqua recommends that the Department allow the use of an SOP to assist with the selection of sample locations, including repeat sample locations that are supposed to represent a "pathway for contamination." Such an SOP developed by the water system would allow staff to use their professional judgement to determine appropriate sample sites for repeat samples. For example, water utility personnel could consider the following items when confronted with the need for collecting check samples.

<u>Criteria for Selection of Repeat Sample Locations</u>

- Site-specific information from sample person in the field
- Confirmation that site is a customer and is on an appropriate length of pipe relative to the Total Coliform positive site.
- Configuration of pipes after review of GIS / plate book
- Confirmation that the customer has been contacted and has approved collection of sample(s)
- Information on treatment within site; do not select sites with any type of treatment within the premise (filter, softener, etc.)
- Direction of flow / hydraulics of system in the area
- Proximity to dead end(s)

- Proximity to storage tank(s)
- Pressure zone(s)
- Access to potential sites
- Sanitary conditions of site and tap.
- Preference for single tap served by cold water only; preference to avoid blended taps (hot & cold water flowing through the same spigot)
- Avoid leaky faucet.
- Preference to avoid outside hose bibs **(11)**

Response:

See response to Comment #5. In addition, the Department agrees that all of the listed items are important when selecting an adequate tap for repeat monitoring. The Department encourages systems to provide a range of available sample locations within 5 service locations on either side of the routine location. Then, when faced with collecting check samples, the system should employ an SOP as outlined above in selecting from the available range listed in the sample siting plan. The Department intends to add these recommendations to the RTCR Technical Guidance document.

It should also be noted that because a system only has 24 hours in which to conduct repeat monitoring, the advanced planning required to identify locations within 5 service connections on either side of the routine sample in the sample siting plan helps for that deadline to be met.

98. Comment:

Qualifications for Submitting Alternative Sample Locations

The Department requested comment on whether alternative repeat monitoring locations must be submitted under the signature of either a certified operator or professional engineer.

Aqua recommends that the Department allow for flexibility by not requiring that either a certified operator or PE must sign a submittal to DEP. Although Aqua is blessed with many certified operators and a number of Professional Engineers on staff, the same is not true for all water systems. Many smaller water systems may not have access to such personnel on a daily basis. Aqua recommends that the Department allow qualified people to submit plans for alternative sample locations but not require specific accreditation, such as being a certified operator or PE.

Aqua has had many meetings to discuss the RTCR and distribution system issues over the last few years. While people attending those meetings have a variety of backgrounds and areas of expertise, some of the people that are most knowledgeable about these systems do not hold either a PE or operator license.

Although the possibility of allowing a person that is "acceptable to the Department" or by "competent personnel" may make it more difficult for DEP to implement, that provision appears to be consistent with existing rules and/or guidance. **(11)**

Response:

See responses to Comment #9 and #10.

99. Comment:

Electronic Submission of Level 1 and Level 2 Assessments

In general, Aqua supports the concept of electronic reporting. The assessment forms will need to be uploaded in a convenient format. This format or DEP form needs to be accessible to a wide variety of water systems as well as to appropriate personnel within DEP. However, we have questions with the intent of the electronic reporting. The Department should provide an explanation as to the purpose of electronic reporting. Is the purpose to provide easy upload for the water systems, easy review by the regional offices, or to provide public information available to anyone?

Aqua feels that the Level 1 and 2 assessments should not be made publically available since there are likely to be security-sensitive topics detailed in the assessments. Our feeling is that the assessments should be made available to anyone in the Department that needs to know the content. The Department should then have the ability to review, critique, and document that the assessment took place within the prescribed time frame.

Details of the assessment, however, should remain confidential and would not be made generally available. For security reasons, it is important that exact locations of valves, size of pipes, sample locations, pressure zones, well stations, interconnects, production facilities and monitoring schedules would remain out of the public domain. **(11)**

Response:

The Department appreciates the commentator's response. In addition, regarding sensitive information, see the response to Comment #40.

100. Comment:

Public Notices

As mentioned in our General Comments, Aqua is concerned with the overuse of Public Notices in Pennsylvania for issues that are not in themselves a public health threat. These notices are apparently meant to be punitive to water systems, but they result in the erosion of trust by consumers in the drinking water quality. This erosion of trust is not just limited to a few water systems, but to the entire drinking water community, including the regulatory agencies. An example is here in this proposal: §109.409(a)(3) is requiring a Tier 2 (30 day) Public Notice for a failure to report a single occurrence of a positive E.coli result within I hour to the state. A single occurrence of an E.coli result, absent a preceding or subsequent

total coliform result is not a Safe Drinking Water Act violation. DEP is requiring water systems to inform the state within I hour of an event that is not a violation, with no explanation of why it is necessary. What is DEP going to do with this information other than tell the utility what it is already required to be doing? This has the potential to distract the water system from its own investigation and follow up. In addition, this could result in public notices that erode the public's confidence in their water supply. By contrast, the federal rule allows for notification by the end of the day. We recommend DEP follow the federal requirements for E.coli notification. **(11)**

Response:

See response to Comment #14.

101. Comment:

Sample Site Plans - Section 109.701(a)(5)

The proposed regulation requires that sampling site plans include higher level of detail than required by the federal RTCR which will significantly increase the burden of implementing and administrating this regulation. In addition to revising all sampling site plans to be representative of water throughout the distribution systems per the federal rule, the proposed rule requires PWS to identify all repeat samples on the sample site plans instead of developing a Standard Operating Procedure (SOP) as allowed by the federal rule [40CFR 141.853(a)(5)(i)]. This requirement triples the amount of work required to field survey, identify and validate new sample locations. In addition the proposed rule requires that the PWS provide a description of the accessibility of all sampling sites and a sampling schedule. Suez Water proposes that these items should be addressed through the submittal of an SOP along with the sample site plan which identifies all routine sampling locations. This SOP would identify how repeat samples and alternate repeat sample locations are selected, standards for sampling accessibility, and an explanation of the sample collection schedule.

To give an example of how the proposed regulations create an unnecessary administrative burden, in the Suez Water's Harrisburg System we are required to take 100 samples per month. Since the proposed regulation allows for sample locations to be sampled more than once in a month we currently have 50 sample locations on the proposed RTCR. If we are required to identify the upstream and downstream repeat sample locations for each routine sample location it will triple the number of sample locations that must be located, verified and submitted to by DEP. Each sampling location must be carefully selected and inspected to verify reliable sampling taps and determine accessibility. This is a very time consuming process for a sample location that has a low probability of ever being used. For this one system alone we will be required to maintain a sampling plan with a total of 150 sample locations and each time there is a change due to accessibility we will have to submit a revised sampling plan to DEP. This proposed change will increased both the PWS and DEP's administrative burden for sampling locations burden three fold.

An analysis of the TCR data for the Suez Water Harrisburg system from 2010 through 2014 demonstrated that out of 6,000 required total coliform samples only 19 or 0.32% of the samples were positive for bacti and none of these samples were E.coli positive. This data

demonstrates that the frequency, in which repeat sample locations must be identified, approximately a few times a year, lends itself to an SOP approach rather than detailed sampling location plan that would have a high likelihood of being out of date by the time the sampling location is needed.

An SOP approach is more efficient for both the PWS and the DEP as it would clearly identify the standards for selecting repeat sampling locations while allowing the PWS the flexibility to use to choose the most representative sites available at the point in time that the repeat samples are needed. The SOP would also identify the schedule for collecting routine samples and standards for sampling accessibility. Finally sampling site plans must be flexible and may need to be updated frequently. Therefore, we recommend that the sampling site plans be kept in electronic format to prevent the need to distribute multiple copies of the plan and create unnecessary waste. In addition, we recommend that the word "available' should remain in the regulation language regarding check sample locations, Section 109.701(a)(5).
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Finally any necessary changes made to DWELR to make accommodations for this new rule should not impact existing three digit sample site IDs. Maintaining current sample site IDs is necessary for consistent recordkeeping and analyzing historical data **(12)**

Response:

See responses to Comment #5, #15, #24, #26 and #97.

102. Comment:

Alternate Repeat Sample Locations - Preamble Section I.

As recommended by TAC, we concur that DEP should allow alternate repeat sample locations. Alternate repeat sample locations will allow for more representative repeat sampling plans than the 5 upstream/downstream requirement. As stated in TACs comments, the 5 upstream/downstream rule never had any scientific background and many PWS's have the ability to use technically valid approaches such as hydraulic modeling to identify the most representative sampling location based on real time operation of the system. These tools available to PWS would be able demonstrate that the alternate repeat monitoring location is representative the area of the distribution systems that led to the original coliform-positive sample. Suez Water does not recommend that the submittal of SOPs for alternate repeat monitoring be certified by a professional engineer or a certified operator as the PWS should have the ability to assign their own designee for these situations.

Suez Water proposes that a SOP should be used to identify the location of repeat samples as well as alternate repeat sample locations as needed. An SOP as allowed by the federal rule [40CFR 141.853(a)(5)(i)] will provide a sound framework for public water systems to comply with RTCR without dramatically increasing the time spent on developing sampling sites plans and administrative burden for maintaining these plans. **(12)**

Response:

See responses to Comment #5 and #97.

103. Comment:

Level 1 Assessment Triggers -Section 109.202(4)(iii)

Per federal regulation 40 CFR Section 141.859 Coliform Treatment Technique Triggers and Assessment Requirements for Protection against Potential Fecal Contamination, these assessments have been developed in order to identify the possible presence of sanitary defects and defects in distribution system coliform monitoring practices. However, the proposed regulations 109.202(4)(iii) states that the Department may direct a system to conduct a Level 1 or Level 2 assessment if circumstances exist which may adversely affect drinking water quality. Although examinations of the circumstances surrounding other water quality issues are warranted, it could be confusing for suppliers and possibly regulators to use the same assessments for multiple situations not associated with this regulation. **(12)**

Response:

The Department has deleted proposed subparagraph §109.202(c)(4)(iii).

104. Comment:

Public Notification of MCL Violation -Section 109.409(b)(l)

As recommended by the TAC, we would prefer that the notification requirement to DEP regarding an E. coli positive result reflect the notification by the end of the day requirement in the federal rule. In addition, we would like the ability to use DEP's 24 hour emergency number to meet this notification requirement. **(12)**

Response:

See response to Comment #14.

105. Comment:

Level 1 and Level 2 Assessments - Section 109.705(b)(2)

Suez Water would like to be able to submit level 1 and level 2 assessments to DEP electronically. **(12)**

Response:

The Department appreciates the commentator’s response and agrees that electronic submissions of Assessment forms may be appropriate. The Department will add details for electronic submission of Assessment forms to the RTCR Technical Guidance document.

Until this guidance is finalized, water systems will need to discuss with the local DEP office the preferred method of electronic submission.

106. Comment:

Compliance Cost - Preamble Section F.

As stated in preamble to this rule compliance cost for monitoring requirements are insignificant. However what has not been quantified is the PWS staff time required to implement and maintain the administratively burdensome sampling site plans. **(12)**

Response:

Compliance costs were derived from the EPA's economic analysis. Monitoring costs were one part of EPA's calculation; however, all parts of the RTCR were included in EPA's analysis including assessments and sample siting plans.

107. Comment:

This letter is to provide comments in regards to the proposed rulemaking for 25 PA Code Ch. 109 for Safe Drinking Water; Revised Total Coliform Rule. Mahaffey Laboratory provides coliform analysis for approximately thirty five different drinking water facilities.

Mahaffey Laboratory would like to express concern about the apparent discrepancy between the language in § 109.303.(a)(2) Sampling requirements. which states "Samples…shall be taken at regular intervals throughout the monitoring period" and the sample siting plans requiring that a specific week of the month be designated for sample collection. The intent of this wording appears to ensure that samples are not taken inconsistently, for example, at the end of one month and the beginning of the next. However, the sample siting plans appear to be restricting sampling events to a particular week each month which could become cumbersome for our laboratory due to staff availability, weather, and holidays. The laboratory may provide advice/guidance to Community Water Supply (CWS) clients but will most likely not fill out the sample siting plans for most of our clients. We schedule each of our drinking water sample collection events to coincide with other sampling in the same area. If CWS clients write their sample siting plans so that collection of their sample cannot be coordinated with other sample events, then the CWS may incur addition costs in the amount of $45/hour. This additional cost could become financially burdensome to water suppliers and in turn the general public.

It is not possible or convenient to list all of the things that could potentially prevent samples from being collected and analyzed within a specified time frame, however the sample date +/- 3 days that has been in effect for Stage 2 Disinfection By-Products Rule has proven to be quite challenging and this is reminiscent of those sampling plans. Mahaffey Laboratory would suggest that, for example, it is stated, monthly samples be collected at a minimum of one week apart rather than during a specific week each month. **(13)**

Response:

See response to Comment #39.

108. Comment:

Section 109.1. Definitions. — Clarity.

This rulemaking incorporates regulations adopted by the United States Environmental Protection Agency (EPA) that amended 40 CFR Part 141, relating to National primary drinking water regulation. This federal regulation is referred to as the Revised Total Coliform Rule (RTCR). The rulemaking is necessary for the Commonwealth to retain primacy with respect to EPA's RTCR.

According to the Preamble, the proposed definitions of "Level 1 assessment" and "Level 2 assessment" reflect the new definitions of the RTCR. Both of the definitions require evaluations, and "when possible," the likely reason that triggered the required assessment. Does the Department of Environmental Protection (DEP) or the public water system (PWS) determine when something is possible? This should be clarified in the final-form regulation. **(14)**

Response:

PWS are responsible for having assessments conducted; and therefore, PWS are responsible for identifying the likely reason that an assessment is triggered. The rule acknowledges that it's not always possible to identify a likely reason; however, the Department is responsible for reviewing assessments.

When the Department determines that an assessment is not sufficient in accordance with § 109.705(b)(7) consultation occurs and revisions to the assessment by a PWS may be necessary. This review process will help to determine whether an adequate assessment was conducted. If an adequate assessment is conducted and does not identify a likely reason, then that determination stands. If a likely reason is not identified, but an assessment is not sufficient, then a PWS will need to revise the assessment and continue to look for the likely reason. The Department's RTCR Technical Guidance document will provide additional clarification of this process.

109. Comment:

Section 109.202. State MCLs, MRDLs and treatment technique requirements. — Clarity; Implementation procedures.

Subsection (c)(4)(ii) requires a Level 2 assessment if certain conditions occur. Commentators expressed concern with the clarity of Subsection (c)(4)(ii)(B) and how it will be implemented. They suggest that assessments should be limited to reasons associated with the RTCR and note that DEP has the authority to do other investigations as needed. In the Preamble to the final form rulemaking, we ask EQB to explain how it will implement this subsection as it relates to the issue raised by commentators. **(14)**

Response:

In regards to Section 109.202(c)(4)(ii)(B), see the response to Comment #3.

Regarding DEP's authority to conduct other inspections as it relates to the comments on Section 109.202(c)(4)(iii) this subparagraph is being deleted per the response to Comment #4.

110. Comment:

3. Section 109.301. General monitoring requirements. — Clarity; Implementation procedures; Possible conflict with or duplication of statutes or existing regulations.

Paragraph (3)(i)

This paragraph pertains to the frequency of monitoring requirements for coliforms. Commentators have asked for the flexibility to collect more samples than required under Paragraph (3)(i)(D) in unusual circumstances, such as following positive samples. Would the collection of more samples be allowed? If so, what procedures would a PWS have to follow after collection of additional samples? This should be explained in the final-form regulation.

According to the Preamble, Paragraph (3)(i)(E) reflects the requirements of 40 CFR 141 .854(c)(2). A commentator has noted that the first sentence of this paragraph does not accurately reflect the Federal rule because it fails to specify that it applies only to noncommunity water systems "using only groundwater." We suggest that the final-form regulation be amended to include this terminology.

Paragraph (3)(ii)

Repeat monitoring requirements are outlined in this paragraph. This proposed rulemaking deletes existing Paragraph (3)(ii)(B), which required systems collecting only one routine coliform sample per monitoring period to collect four check samples because 40 CFR 141.858(a)(1) requires all PWSs to collect a minimum of three cheek samples instead of four.

According to the Preamble, the RTCR gives states an option to allow alternative sampling locations under certain circumstances. The Small Water Systems Technical Assistance Center (TAC) Advisory Board to DEP recommended EQB allow alternate check sample locations. In the Preamble, EQB is specifically requesting comment on TAC's recommendation and commentators have provided feedback on this topic. We will review EQBs responses to the suggestions of commentators and any changes made to this paragraph in our review of the final form regulation to determine whether it is in the public interest.

Paragraph (3)(iii)

This paragraph pertains to the invalidation of total coliform samples. According to the Preamble, the amendments being made to Paragraph (3)(A)(III) include E. coli MCL and assessment language to clarify how compliance is determined for the RTCR. Commentators have suggested the invalidation procedures outlined in all of Paragraph (3)(iii) should be

applied to both total coliform and E. coil. We ask EQB to review the entirety of this paragraph to ensure all of the changes are consistent with the RTCR. **(14)**

Response:

Regarding Paragraph (3)(i), additional samples are allowed as specified in §109.301(3)(v),but these samples are not to be used to determine whether the coliform treatment technique trigger has been exceeded. This amendment is consistent with and reflects the federal requirement under 40 CFR 141.853(b). Regarding Paragraph (3)(i)(E), the Preamble missed the additional federal citation which supports Paragraph (3)(i)(E) as noted in the response to Comment #78.

Regarding Paragraph (3)(ii), details will be provided in the Order. In addition, see the responses to Comment #5, #9, #10, #11 and #15.

Regarding Paragraph (3)(iii), refer to the response to Comment #22.

111. Comment:

Possible conflict with or duplication of statutes or existing regulations.

A commentator has asked if EQB has reviewed the effect the changes being proposed under this rulemaking will have on EQB's existing regulations on public notification requirements. We ask EQB to review its public notification regulations to ensure that the proposed changes do not create conflicts with existing regulations. **(14)**

Response:

Revisions to the public notification requirements have been made. See the response to Comment #62.

112. Comment:

Section 109.409. Tier 2 public notice — categories, timing and delivery of notice. — Reasonableness; Need; Fiscal impact.

Subsection (a) addresses general violation categories and other situations requiring a Tier 2 public notice. New Subsection (a)(3) will require a Tier 2 public notice for any failure to report an E. coli MCL violation or E. coli-positive routine or check sample. Commentators disagree with the requirement for a notice that does not relate to an MCL violation. They believe additional notification could lead to overuse of public notifications. In the Preamble to the final form rulemaking, we ask EQB to explain why public notification is needed for E. coli-positive samples and why the benefits of such a notice outweigh any potential costs associated with such a notice. **(14)**

Response:

As noted in the response to Comment #14, this violation is a reporting violation. The public notification text has been moved from § 109.409(a)(3) to § 109.410(a)(5) as suggested, which makes failure to report an *E. coli* MCL violation or an *E. coli*-positive routine or check

sample a Tier 3 violation. This change mirrors the federal PN Tier as detailed in 40 CFR § 141.204(a)(6) and 40 CFR § 141.860(d)(2).

113. Comment:

Section 109.701. Reporting and recordkeeping. — Reasonableness; Implementation procedures; Possible conflict with or duplication of statutes or existing regulations.

Subsection (a)(3)

This subsection relates to reporting requirements for PWSs. EQB is adding a requirement that any sample result that is E. coli positive be reported to DEP within one hour of discovery. Commentators have requested that the reporting requirement be changed from one hour to the end of the day. What is the need for the one hour reporting requirement and why is it more reasonable than the suggestion of the commentator? In the Preamble to the final-form rulemaking, we ask EQB to explain its rationale for this provision.

Subsection (a)(5)

This subsection addresses the content of a written sample siting plan, submittal of the plan to DEP and revisions to the plan. According to the Preamble, many of the changes being proposed reflect amendments to the RTCR. Commentators have expressed concern that some of the proposed changes would be difficult to implement and do not provide the flexibility that the RTCR allows. As EQB develops the final-form regulation we ask that it work with the regulated community to provide flexibility, when allowed by the RTCR, while at the same time, ensuring that primacy requirements are met. **(14)**

Response:

Regarding Subsection (a)(3), rationale will be provided in the Order as given in the response to Comment #14.

Regarding Subsection (a)(5), refer to the responses to Comment #5, #9, #10, #11, #15 and #97.

114. Comment:

Section 109.705. System evaluations and assessments. — Clarity; Implementation procedures.

Subsection (b) requires a PWS to conduct Level 1 and Level 2 assessments and to comply with any expedited or additional actions required by DEP in case of an E. coli MCL violation. EQB has asked for input on whether the report required under Subsection (b)(2) should be submitted to DEP electronically. We will review EQBs responses to the suggestions of commentators and any changes made to this paragraph in our review of the final-form regulation to determine whether it is in the public interest.

In addition, Subsection (b)(3) requires a Level 1 assessment to be conducted by "competent personnel qualified to operate and maintain the water system's facilities." We believe the

term "competent personnel" is vague. Who would make the determination that the person conducting the assessment is competent? We recommend that this be clarified in the final-form regulation.

Finally, Subsections (b)(3) and (b)(4) require Level 1 and Level 2 assessments to be "conducted" by certain personnel. Commentators have suggested that instead of the specified personnel conducting the required assessments, the personnel could review and approve the results of the assessments performed by others. This suggestion would provide a cost savings to the regulated community. If this suggestion is reflective of the RTCR and protective of the public health, we ask EQB to adopt it. **(14)**

Response:

"Competent personnel qualified to operate and maintain the water system's facilities" is based on an existing requirement in § 109.704(b). Competent personnel can be further clarified in the Department's RTCR Technical Guidance document. For additional information see the response to Comment #16.

115. Comment:

Possible conflict with or duplication of statutes or existing regulations.

A member of the regulated community that provides spring water to the bottled water community submitted comments stating that the Food and Drug Administration (FDA) sets regulatory mandates for bottled water. The commentator notes that the Regulatory Analysis Form should be amended to include the appropriate federal references and believe that there is a potential conflict between the FDA's regulations found at 21 CFR 165.1 1O(b)(2) and § 109.1003(a)(1) of this proposed rulemaking. We note that EQB's existing Subchapter J regulations on bottled water include references to both EPA and FDA regulations. In the Preamble to the final-form regulation, we ask EQB to explain how DEP's regulation of bottled water fits into the regulatory framework of EPA's RTCR and the FDA's regulations on bottled water. **(14)**

Response:

See the responses to Comment #87, #91, #92 and #93. This framework is also explained in the Preamble to the final rule.