Consideration of Other Regulatory Revisions in Support of the Third Six-Year Review of the National Primary Drinking Water Regulations

Office of Water (4607M)
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Acronyms

ASDWA	Association of State Drinking Water Administrators
CFR	Code of Federal Regulations
CWS	Community Water System
EPA	United States Environmental Protection Agency
FR	Federal Register
GWUDI	Ground Water under the Direct Influence of Surface Water
IRIS	Integrated Risk Information System
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
mg/L	Milligrams per Liter
MRL	Minimum Reporting Level
NCWS	Non-community Water System
NPDWR	National Primary Drinking Water Regulation
NTNCWS	Non-transient, Non-community Water System
OGWDW	Office of Ground Water and Drinking Water
PN	Public Notification
PWS	Public Water System
SDWA	Safe Drinking Water Act
SMCL	Secondary Maximum Contaminant
SOC	Synthetic Organic Chemical
TNCWS	Transient Non-Community Water System
VOC	Volatile Organic Compound

1 Introduction and Background

Under the Safe Drinking Water Act (SDWA), as amended in 1996, the U.S. Environmental Protection Agency (EPA) must periodically review existing National Primary Drinking Water Regulations (NPDWRs) and, if appropriate, revise them. Section 1412(b)(9) of SDWA states:

> The Administrator shall, not less often than every 6 years, review and revise, as appropriate, each national primary drinking water regulation promulgated under this title. Any revision of a national primary drinking water regulation shall be promulgated in accordance with this section, except that each revision shall maintain, or provide for greater, protection of the health of persons.

EPA completed and published the results of its first Six-Year Review (Six-Year Review 1) on July 18, 2003 (68 FR 42908, USEPA, 2003) after developing a systematic approach, or protocol, for the review of NPDWRs. EPA has applied the same protocol with some refinements to the second Six-Year Review (Six-Year Review 2) (USEPA, 2009) and third Six-Year Review (Six-Year Review 3) (USEPA, 2016a) of NPDWRs.

To facilitate the regulatory review of a large number of NPDWRs, EPA performs a series of analyses at the beginning of each review cycle, intended to target those NPDWRs that are the most appropriate candidates for revision. During each review cycle, EPA reviews the following key information and/or factors to determine whether regulatory revisions are possible and appropriate: health risk assessments; analytical methods and treatment technology assessments; occurrence and exposure analyses; and other regulatory revisions (such as implementation-related issues).

This document focuses on implementation issues related to Chemical Phase Rules and Radionuclide Rules reviewed as part of the Six-Year Review 3. The considerations of implementation issues associated with the Disinfection Byproducts Rules are documented in the *Six-Year Review 3 Technical Support Document for Disinfectants/Disinfection Byproducts Regulations* (USEPA, 2016b).

1.1 Purpose of the Review of "Other Regulatory Revisions"

In addition to the review of the maximum contaminant level goals (MCLGs), maximum contaminant levels (MCLs), and treatment techniques components of the NPDWRs, EPA considers whether other regulatory revisions might be needed, such as system monitoring and reporting requirements, as part of Six-Year Review process. For the Six-Year Review 3, EPA utilized the Six-Year Review 3 Protocol (USEPA, 2016a) for evaluating which implementation issues to consider. EPA's protocol first focused on identifying items that were not already being addressed, or had not been addressed, through alternative mechanisms (e.g., as a part of a recent or ongoing

rulemaking). In addition to this limitation, EPA also considered potential implementation-related revisions if they:

1. Represented a potential change to an NPDWR, as defined under section 1401 of SDWA[1];
2. Were "ready" for rulemaking – that is, the problem to be resolved had been clearly defined and specific option(s) had been formulated to address the problem under the current regulatory framework; and
3. Would clearly improve the level of public health protection; and/or provide a meaningful opportunity for cost savings (either monetary or burden reduction) while not lessening public health protection.

[1] The subject of the Six-Year-Review, as specified in section 1412(b)(9) of the SDWA, is "each national primary drinking water regulation," as defined under section 1401 of SDWA.

2 Implementation Issues for Consideration

As part of Six-Year Review 3, EPA requested its regional offices and headquarters staff involved in assisting states with implementing NPDWRs to gather input regarding concerns that are within the scope of the Six-Year Review. Two additional issues were also reconsidered that had been originally identified during Six-Year Review 2. The potential implementation issues were shared with the Association of State Drinking Water Administrators (ASDWA) to obtain feedback from state drinking water agencies concerning the significance of the issues. ASDWA's input is provided in the document entitled "Six-Year Review 3 Implementation & Other Regulatory Issues for Potential Consideration – ASDWA Regulatory Committee feedback," available on the Federal Rulemaking Portal: http://www.regulations.gov, under Docket ID No. EPA-HQ-OW-2016-0627.

The following sections of this document provide background and summary information regarding four issues that are within the scope of an NPDWR review and appear to be the most important. Other issues that were shared with ASDWA and considered are listed and briefly described in Appendix A. Issues that fall within the scope of an NPDWR revision for the current review effort include:

- Section 2.1 – Nitrogen monitoring in the distribution system.
- Section 2.2 – Consider Removal or Further Restricting the Alternative Nitrate-Nitrogen MCL of 20 mg/L for Non-Community Water Systems (NCWS).
- Section 2.3 – Synthetic Organic Chemical (SOC) Detection Limits.
- Section 2.4 – Fluoride

2.1 Nitrogen Monitoring in Consecutive Systems and the Distribution System

2.1.1 Issue Description

The EPA Six-Year Review 3 workgroup identified the potential increase in nitrite and/or nitrate levels at the tap as compared to levels at the point of entry to the distribution system as a potential health concern. Currently, nitrite and nitrate standards are measured at the point of entry to the distribution system. This issue was also identified as a concern by the States/EPA workgroup during Six-Year Review 2. Ammonia may be present in drinking water systems as a result of either naturally-occurring processes or ammonia addition during secondary disinfection to form chloramines. Nitrite and nitrate are produced during nitrification through ammonia utilization by nitrifying bacteria.[2] This process could result in increased total nitrite/nitrate concentrations at the point of use above the MCLs for those contaminants. To protect public health, any system with source water that exceeds the MCLs for nitrate and nitrite must treat the water to a level below the MCL(s). However, if a water system reduces nitrate and nitrite levels to just meet the MCLs, and the water system uses chloramine for disinfection, there is a potential for nitrate and nitrite

[2] Nitrification is a microbial process by which reduced nitrogen compounds (primarily ammonia) are sequentially oxidized to nitrite and nitrate. See http://www.epa.gov/sites/production/files/2015-09/documents/nitrification_1.pdf for additional information on nitrification.

concentrations to exceed the numeric values of their respective MCLs at the point of use if a nitrification event occurs.

2.1.2 Potential Resolution(s)

To address this concern, certain water systems could develop and implement a nitrification monitoring program, which would include adding monitoring locations. Additional monitoring locations to consider could include the point of maximum residence time where disinfection byproducts samples are already collected, or end use collection points.

A nitrification monitoring program would be most effective for water systems: (1) where nitrite and/or nitrate levels at the point of entry to the distribution system are approaching the MCLs, and (2) when trigger levels of ammonia in source water and/or from chloramination are exceeded. Monitoring of ammonia in source water or through treatment additions may also be necessary for those systems with nitrite and/or nitrate levels near the MCL.

EPA does not believe revising the monitoring requirements is appropriate at this time because additional information is needed. For example, research is needed to develop criteria that could be used to identify the specific systems where distribution system monitoring should be targeted to prevent nitrate/nitrate MCL exceedances. This would help avoid additional burden on systems where a potential health concern from nitrite/nitrate would not be likely. After research information is gathered, EPA can reevaluate the possibility of revising the NPDWRs for nitrate/nitrite to address nitrification as part of the next Six-Year Review cycle; or if appropriate, EPA can consider accelerating the review.

2.2 Alternative Nitrate-Nitrogen MCL of 20 mg/L for Non-Community Water Systems

2.2.1 Issue Description

The EPA Six-Year Review 3 workgroup discussed concerns about the appropriate use of an alternative nitrate-nitrogen MCL allowing up to 20 mg/L for Non-Community Water Systems (NCWS) under specific conditions. If certain conditions are met, 40 CFR 141.11 provides states with the discretion to allow NCWSs to use an alternative nitrate-nitrogen MCL above the NPDWR of 10 mg/L but not exceeding 20 mg/L. The four conditions that must be met are as follows:

1. Such water will not be available to children under six months of age;
2. The NCWS is meeting the public notification requirements under §141.209, including continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effects of exposure;
3. Local and state public health authorities will be notified annually of nitrate levels that exceed 10 mg/L; and
4. No adverse health effects shall result.

Other provisions related to this issue are included in 40 CFR 141.23 which states:

> "Community water systems shall conduct monitoring to determine compliance with the maximum contaminant levels specified in § 141.62 in accordance with this section. Non-transient, non-community water systems shall conduct monitoring to determine compliance with the maximum contaminant levels specified in § 141.62 in accordance with this section. Transient, non-community water systems shall conduct monitoring to determine compliance with the nitrate and nitrite maximum contaminant levels in §§ 141.11 and 141.62 (as appropriate) in accordance with this section." [emphasis added]

Two concerns were identified with the current rule provisions:

- First, there may be potential health concerns other than methemoglobinemia associated with the ingestion of nitrate-nitrogen, such as possible effects on fetal development.
- Second, the monitoring provisions in 40 CFR 141.23 imply that Transient Non-Community Water Systems (TNCWS), a subcategory of NCWSs, are eligible for use of the alternative MCL, but Non-Transient Non-Community Water Systems (NTNCWS) are not. However, consistent with 40 CFR 141.11(d) the alternative MCL does apply to entities such as industrial plants, generally considered to be a NTNCWS, that do not deliver water to children under six months of age (44 FR 42254, USEPA, 1979).

2.2.2 Potential Resolution(s)

EPA acknowledges that both, nitrate and nitrite, are included in the Integrated Risk Information System (IRIS) Multi-Year Agenda (USEPA, 2015) and believes that nitrates and nitrites should remain a priority for reassessment per the outcome results of the Six-Year Review Protocol. It is important that a reassessment focuses not only on infant methemoglobinemia, but also on other potential health effects in populations such as the possible effects on fetal development. Additionally, any effects of nitrate-nitrogen levels, specifically between 10 and 20 mg/L, should be requested to be evaluated in the IRIS assessment. EPA will reevaluate the possibility of revising the nitrate NPDWR to clarify the appropriate use of the alternative MCL as part of the next Six-Year Review cycle; or at any time, if appropriate, EPA can consider accelerating the review.

2.3 Synthetic Organic Chemical (SOC) Method Detection Limits

2.3.1 Issue Description

EPA and states indicated that some laboratories have reported difficulty in consistently achieving the detection limits for a number of s synthetic organic chemicals (SOCs). Section 40 CFR 141.24(h)18 of the NPDWRs lists detection limits for the SOCs, including certain pesticides. These detection limits serve as triggers for determining whether the compliance monitoring frequency for SOCs may be reduced. Public water systems that do not detect a SOC contaminant above the detection limit may qualify for reduced monitoring frequency of that contaminant. It was reported that detection limits of several SOCs may be lower than what can economically and efficiently be achieved by laboratories using approved methods. As a result, water systems may not be able to

qualify for reduced monitoring if the laboratories cannot achieve the listed detection limits. This issue was also identified as a concern by the states during Six-Year Review 2.

2.3.2 Potential Resolution(s)

To address the concern about the SOC method detection limits, EPA investigated the minimum reporting level (MRL) values for SOCs from the Six-Year Review 3 Information Collection Request (ICR). Using the MRL values, EPA evaluated the percentage of records in the ICR database that were at or below the detection limit. This percentage gave EPA an indication of whether and to what extent laboratories are able to detect contaminant concentrations at or below detection limits. EPA found that for most of the SOCs, nearly half of the concentrations reported for each of the contaminants were at or below the appropriate detection level stated in the regulation. Four SOCs (dalapon, dinoseb, picloram and endrin) had more modest results, but each showed a sufficient number of records below the detection limit, demonstrating that there are approved analytical methods that can be used to measure below the detection limits. Through this investigation EPA found there was an existing approved analytical method for each SOC that laboratories could use to achieve the appropriate detection limits in order to qualify for reduced monitoring requirements and thus, EPA determined it is not warranted at this time to revise the regulation to address this issue.

2.4 Fluoride Public Notification Requirements

2.4.1 Issue Description

Currently, community water systems are required to notify their customers within 12 months if a single sample fluoride concentration exceeds the fluoride Secondary MCL (SMCL) of 2.0 mg/L (Tier 3 Notice) or within 30 days if their yearly average fluoride concentration exceeds the MCL of 4 mg/L (Tier 2 Notice). The SMCL, although not an NPDWR, is tied to enforceable action (i.e., public notification) and could be considered for revision if the MCLG is revised. EPA identified the following potential concerns with the current public notifications for fluoride.

- Some systems found it confusing to have two different public notification requirements for the MCL and the SMCL exceedances. (See 40 CFR Subpart Q, §141.208).
- Both of the public notices could be revised to provide consumers with more timely and practical advice on how to manage fluoride exposure, particularly in teething infants and children who are vulnerable to severe dental fluorosis during the critical stage of tooth enamel development for the primary teeth. According to public notice requirements, PWSs could have up to one year to notify customers of an exceedance of the MCL and SMCL.
- The updated health assessments (NRC, 2006a; USEPA, 2010a) indicate that severe dental fluorosis is an adverse health effect, not simply a cosmetic effect. According to health assessments, the adverse health effect can occur at drinking water concentrations ≥2 mg/L. The standard public notification language on adverse health effects of fluoride does not reflect the information in the health assessments (USEPA, 2010a; 2010b). For example, the public notification for an MCL exceedance identifies severe skeletal fluorosis as the adverse health effect of concern for concentrations exceeding 4.0 mg/L. The SMCL notification identifies moderate and severe dental fluorosis as the health effect of concern for concentrations exceeding 2.0 mg/L.

EPA will continue to monitor the evolving science, and, when appropriate, will reconsider the fluoride NPDWR's relative priority for revision and take any other available and appropriate action to address fluoride risks under the SDWA.

2.4.2 Potential Resolution(s)

EPA will continue to monitor the evolving science and take any other available and appropriate action to address fluoride risks under SDWA.

3 References

ASDWA. 2016. Six-Year Review 3 Implementation & Other Regulatory Issues for Potential Consideration – ASDWA Regulatory Committee feedback. Available on the Federal Rulemaking Portal: http://www.regulations.gov under Docket ID No. EPA-HQ-OW-2016-0627.

National Research Council. 2006. Fluoride in drinking-water: A Scientific Review of EPA's Standards. The National Academies Press, Washington D.C.

USEPA. 1979. Interim Primary Drinking Water Regulations; Amendments. Federal Register. Vol. 44, No. 140, p. 42254. July 19, 1979.

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USEPA. 2009. EPA Protocol for the Second Review of Existing National Primary Drinking Water Regulations (Updated). EPA Report 815-B-09-002. October 2009.

USEPA. 2010a. Fluoride: Dose Response Analysis for Non-Cancer Effects. EPA 820-R-10-019. December 2010.

USEPA. 2010b. Fluoride: Exposure and Relative Source Contribution Analysis. EPA 820-R-10-015. December 2010.

USEPA. 2015. IRIS Agenda. https://www.epa.gov/iris/iris-agenda

USEPA. 2016a. EPA Protocol for the Third Review of Existing National Primary Drinking Water Regulations. EPA Report 810-R-16-007.

USEPA. 2016b. Six-Year Review 3 Technical Support Document for Disinfectants/Disinfection Byproducts Regulations. EPA Report 810-R-16-012

Appendix A: Third Six-Year Review of National Primary Drinking Water Regulations: Chemical Phase Rule and Radionuclides Rule - Summary of Issues Identified for Phase Rules

Table A-1: Third Six-Year Review of National Primary Drinking Water Regulations: Chemical Phase Rule and Radionuclides Rule - Summary of List of Issues Identified by Work Group to Consider for Possible Revision[1]

Issue[2]	Description of Issue and Potential Rule Modification	Additional Information	Finding
Nitrogen Monitoring in Consecutive Systems and in the Distribution System	The nitrate and nitrite compliance monitoring location should be moved to within the distribution system to more accurately reflect nitrification considerations in public water systems that use chloramines. Nitrification may also occur due to certain source water characteristics including elevated levels of ammonia nitrogen.	The issue would likely be of concern primarily in systems where nitrite or nitrate levels are relatively close to the MCLs for those contaminants. To address this concern, the location of the nitrate/nitrite sampling point could be changed. This change could be targeted to only affect water systems having source water characteristics and disinfection management practices that may result in nitrate/nitrite levels that could exceed their respective MCLs.	This issue is within the scope of Six-Year Review. However, research is needed, as identified in Section 2.1 of this document, to determine whether a revision to the rule would be justified, and if so, ways to target rulemaking to systems where nitrification may be a significant issue.

[1] This chart provides a summary of issues identified during EPA's review. For those issues where immediate revision has been determined not to be appropriate at this time, that determination is based on an evaluation of other, higher priority actions as well as potentially limited benefits of the revision.

Issue[2]	Description of Issue and Potential Rule Modification	Additional Information	Finding
Alternative Nitrate MCL of 20 mg/L for Non-Community Water Systems (NCWS)	Consider removal or further restricting the alternative nitrate MCL of 20 mg/L for NCWS. The regulation in 40 CFR 141.11 provides that States have the discretion to allow NCWSs to use an alternative nitrate (as nitrogen) MCL of up to 20 mg/L if certain conditions are met. A 10 mg/L MCL for nitrate exists for other public water systems. There is concern that these contaminants may also cause adverse health effects to populations other than infants under six months of age. There is a separate concern that the preamble to the rule appears to indicate the intent may have been to allow the alternative MCL of 20 mg/L for non-transient NCWSs but not for transient NCWSs. However, 40 CFR 141.11(d) of the rule clearly applies to all NCWSs, including non-transient ones, and 141.23, which addresses monitoring, should not be interpreted as inconsistent with that provision, which was intended to allow the alternative MCL at locations such as industrial plants (which are non-transient NCWSs) that do not serve water to infants.	ASDWA is collecting data from all states on how often the alternative MCL is used and under what circumstances (ASDWA, 2016).	This issue is within the scope of Six-Year Review. EPA believes the appropriate action is to pursue an updated IRIS health risk assessment as identified in Section 2.2 of this document to determine appropriate actions, if any, concerning the potential revision of the rule.
SOC Method Detection Limits	Revise SOC method detection limits based on newer methodologies (i.e., establish minimum reporting levels (MRLs)). Some compounds have detection limits that may be lower than levels that can be economically and efficiently achieved by laboratories using approved methods. Therefore, monitoring is continued quarterly to make sure the concentration does not exceed the MCL since the lab is not reporting at a concentration low enough to qualify for reduced monitoring.	The concept of incorporating newer methodologies such as MRLs would provide valuable insight into actual analytical capabilities across laboratories and States. With respect to achieving the SOC method detection limits, EPA investigated the MRL values for SOCs from the Six Year Review 3 Information Collection Request (ICR) and found that there was an approved analytical method that laboratories can use to achieve the appropriate detection limits in order to reduce monitoring requirements.	This issue is within the scope of Six-Year Review. Since analytical methods to achieve the detection limits listed in the regulation exist, no change to the rule is appropriate at this time.
Cyanide Total Screen for Free Cyanide	Amend the Phase V Rule in CFR Part 141, Subpart C to allow the use of total cyanide monitoring as a screen for free cyanide, with follow-up monitoring for free cyanide only required if the total cyanide exceeds the MCL for free cyanide.	The concept of using total cyanide as a screening for free cyanide is discussed in the preamble to the Phase V Rule, but there is no enabling language in the body of the rule. There is a footnote in the detection limit table that identifies one method as a "screening method for total cyanides," but the description of the intent is not clear.	This issue is within the scope of Six-Year Review. It does not merit an immediate rule change, but may be addressed when the Phase V Rule or CFR Part 141, Subpart C is revised for other more substantive reasons.

Issue[2]	Description of Issue and Potential Rule Modification	Additional Information	Finding
Monitoring for Ground Water Systems with Low Nitrate-Nitrite	Reduce the frequency of monitoring for public water systems with historically low levels of nitrate/nitrite and the trigger level for increased/decreased monitoring. Frequencies may be changed to be consistent with the Standardized Monitoring Framework or the Alternative Monitoring Guidelines or through waivers.	This issue was considered in Six-Year Review 2. ASDWA suggested that there may be less support for this potential change now than in the past since nitrate levels in water have been increasing nationally (ASDWA, 2016).	This issue is within the scope of Six-Year Review. However, EPA concurs with ASDWA that this may not be a substantive issue at this time due to increasing trends of nitrate levels in ground water (ASDWA, 2016).
Nitrite (NO_2) Monitoring Frequency	Establish a regulatory compliance monitoring repeat frequency for nitrite monitoring. Consider specifying that nitrite must be monitored at least once every compliance cycle (i.e., nine years) when the initial sample was less than 50 percent of the MCL, or require future nitrite monitoring when a total nitrate and nitrate analysis exceeds a certain trigger level.	After an initial nitrite sample is analyzed and found to be less than 50 percent of the MCL, the current rule specifies that future monitoring is at a frequency specified by the state. Some states do not specify a frequency to address these situations, so there are many instances where only one initial nitrite sample has been required. The Agency investigated the possibility of using total nitrate + nitrite nitrogen monitoring as a screening tool to predict elevated nitrite levels, but was unable to derive a valid statistical correlation using currently available finished water datasets.	This issue is within the scope of Six-Year Review. Nitrite (as nitrogen) levels above the MCL of 1 mg/L are extremely rare in source waters. Therefore, any occurrence in finished waters above the MCL would essentially be limited to cases where significant nitrification would occur after source water entered the water system. Further evaluation of this issue can be considered in conjunction with research needs identified in Section 2.1 of this document.
Frequency of Nitrate (NO_3) Monitoring in transient non-community water systems	Establish a regulatory quarterly nitrate compliance monitoring frequency for transient non-community water systems (TNCWSs) when the sample result is less than or equal to 50 percent of the MCL.	Currently, if a TNCWS has a sample result greater than or equal to 50 percent of the MCL for nitrate, monitoring is only required annually, even if the TNCWS has an MCL violation. Requiring TNCWSs to increase nitrate monitoring to quarterly if the sample result was greater than or equal to 50 percent of the MCL would be consistent with other types of public water systems. Seasonal TNCWSs, such as campgrounds, require monitoring only at times of year the system is operational. ASDWA reports that most states already require increased nitrate monitoring for TNCWSs when a sample is at or greater than 50% of the MCL (ASDWA, 2016).	This issue is within the scope of Six-Year Review. Since most states already require increased monitoring, this change does not merit a rule change unless the Phase II Rule or CFR Part 141, Subpart C is amended for other reasons.

Issue[2]	Description of Issue and Potential Rule Modification	Additional Information	Finding
Total Nitrate and Nitrite Monitoring	Clarify monitoring requirements for total nitrate and nitrite nitrogen. This would include specifying monitoring frequency, identification of laboratory methods, need for confirmation samples, procedures to make a compliance determination and need for increased monitoring frequency if detected at or above 50 percent of the MCL.	Currently, there are separate MCLs for: (1) nitrate (as nitrogen (N)), (2) nitrite (as N) and (3) total nitrate and nitrite (as N) that public water system (PWS) must comply with. Rule language does not specify monitoring requirements for total nitrate and nitrite. Even if PWSs are monitoring total nitrate and nitrite they are not required to include the results or the health effects language in the consumer confidence report.	This issue is within the scope of Six-Year Review. It does not merit an immediate rule change but should be considered when the Phase II Rule is revised for other more substantive reasons.
IOC Compliance Determination	Establish compliance determination criteria for inorganic contaminants (IOCs) using a running annual average of quarterly samples, consistent with the process used for volatile organic compounds (VOCs), and synthetic organic chemicals (SOCs) and the Arsenic Guidance. 40 CFR 141.23(i)(2) states that if a sampling point is monitored annually or less frequently and the result is greater than the MCL, the site is out of compliance.	When the Arsenic Rule was finalized in 2001, the preamble described the procedure for determining compliance as the same for IOCs, VOCs and SOCs, but the corresponding regulatory section was not revised to apply to all IOCs.	This issue is within the scope of Six-Year Review. However, although it does not merit an immediate rule change, it should be addressed when Chemical Phase Rules are revised for other more substantive reasons.
Significant Figures	Revise MCLs to establish consistent significant digits. Contaminant MCLs in some rules are not expressed to the number of significant figures that are technically feasible.	By example, the nitrite (as N) MCL is specified as 1 mg/L whereas the fluoride MCL is specified as 4.0 mg/L, implying one significant figure for nitrite and two significant figures for fluoride. Rounding of analysis results for MCLs with only one significant figure could lead to an increased risk of adverse health effects for some contaminants.	This issue is within the scope of Six-Year Review. It does not merit an immediate rule change, but should be addressed when Chemical Phase Rules are revised for other more substantive reasons.
Ground Water Under the Direct Influence of Surface Water	Define ground water under the direct influence of surface water (GWUDI) systems in the Chemical Phase Rules. The term GWUDI was first introduced in the Surface Water Treatment Rule published June 29, 1989.	There is no use of the term GWUDI in the Chemical Phase Rules (only ground water or surface water systems), so there is some confusion as to monitoring such systems for Phase II/V contaminants. ASDWA reports that states reported treating all GWUDI as surface waters for the monitoring purposes (ASDWA, 2016).	This issue is within the Scope of Six-Year Review. Monitoring GWUDI as surface water would generally be more protective of consumers due to increased monitoring frequencies as compared to ground water. Since states are reportedly already implementing the rule in this manner, it does not merit an immediate rule change. A clarification could be addressed when Chemical Phase Rules are revised for other more substantive reasons.

Issue[2]	Description of Issue and Potential Rule Modification	Additional Information	Finding
Monitoring Requirements for non-community water systems (NCWS)	Revise the monitoring requirements for non-community water systems (NCWS) to better target the potential health risks associated with chronic contaminants. In light of the health threats, some monitoring requirements for these systems may be insufficient, and others may be excessive.	ASDWA has indicated that many states already do discretionary monitoring of non-community water systems if they feel there is a site specific problem, such as petroleum related chemicals leaking at underground storage tank locations (ASDWA, 2016). For most contaminants, more guidance may be valuable since it may be difficult to prescribe specific monitoring requirements for highly variable site-specific conditions in a rule revision. However, for radionuclide contaminants consideration of a rule modification to include targeted non-transient non-community water systems, based on occurrence, the age distribution of typical customer and other factors, may be appropriate.	This issue is within the scope of Six-Year Review. It does not merit an immediate rule change, but should be addressed when Chemical Phase Rules are revised for other more substantive reasons.

(2) Fluoride issue was identified as a concern by the States/EPA workgroup during Six-Year Review 2 and therefore was not shared with ASDWA during Six-Year Review 3.