

SUMMARY OF EXPRESS TERMS

This notice of proposed rulemakings amends 10 NYCRR Subpart 5-1 to include maximum contaminant levels (MCL) of 10 parts per trillion (ppt) of Perfluorooctanesulfonic acid (PFOS), 10 ppt for Perfluorooctanoic acid (PFOA) and 1 part per billion (ppb) for 1,4-dioxane. Additionally, a new subdivision was added to allow water systems to request a deferral from the MCL for PFOS, PFOA and 1,4-dioxane and updates to additional tables and Appendix 5-C to ensure clarity with implementation of the MCLs.

Pursuant to the authority vested in the Public Health and Health Planning Council and the Commissioner of Health by section 225 of the Public Health Law, Subpart 5-1 of Title 10 (Health) of the Official Compilation of Codes, Rules and Regulations of the State of New York is amended, to be effective upon publication of a Notice of Adoption in the New York State Register, to read as follows:

A new subdivision (p) is added to Section 5-1.51 to read as follows:

(p) A system implementing corrective actions to comply with the MCL for Perfluorooctanesulfonic acid (PFOS), Perfluorooctanoic acid (PFOA), and 1,4-dioxane listed in section 5-1.52 table 3 of this subpart may request that the State defer actions for determining MCL violations prescribed in section 5-1.52 table 3 of this subpart for up to 24 months past the effective date of the PFOS, PFOA or 1,4-dioxane MCL. The system shall make such requests in writing within 90 days of the effective date of such MCL. Requests shall document that a deferral period is necessary for a system to implement corrective actions to achieve compliance with the MCL for PFOS, PFOA or 1,4-dioxane and include a timeline with specific milestones for State review and approval. A public notice shall be distributed within 30 days of receiving notification from the State that a deferral has been granted. Systems operating with a deferral approved by the State shall comply with any interim monitoring, public notification or other conditions required by the State, including but not limited to a timeline for implementation of a corrective action plan. Deferrals granted under this subdivision may be renewed, upon request, for up to an additional twelve months if the system establishes to the satisfaction of the State that it is taking all practical steps to meet the corrective action plan on which the initial deferral was conditioned. Failure to meet any deferral conditions shall constitute a violation of this section and may result in immediate deferral revocation. Notice of revocation of a deferral shall will be issued in writing by the State.

Section 5-1.52, Table 3 is amended to read as follows:

Table 3. Organic Chemicals Maximum Contaminant Level Determination

Contaminants	MCL (mg/L)	Type of water system	Determination of MCL violation
General organic chemicals		Community, NTNC and Noncommunity	If the results of a monitoring sample analysis exceed the MCL, the supplier of water shall collect one to three more samples from the same sampling point, as soon as practical, but within 30 days. An MCL violation occurs when at least one of the confirming samples is positive ¹ and the average of the initial sample and all confirming samples exceeds the MCL.
Principal organic contaminant (POC)	0.005		
Unspecified organic contaminant (UOC)	0.05		
Total POCs and UOCs	0.1		
Disinfection byproducts ^{2,3}		Community and NTNC	For systems required to monitor quarterly, the results of all analyses at each monitoring location per quarter shall be arithmetically averaged and shall be reported to the State within 30 days of the public water system's receipt of the analyses. A violation occurs if the average of the four most recent sets of quarterly samples at a particular monitoring location (12-month locational running annual average (LRAA)) exceeds the MCL. If a system collects more than one sample per quarter at a monitoring location, the system shall average all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation. If a system fails to complete four consecutive quarters of monitoring, compliance with the MCL will be based on an average of the available data from the most recent four quarters. An MCL violation for systems on annual or less frequent monitoring that have been increased to quarterly monitoring as outlined in Table 9A, is determined after four quarterly samples are taken.
Total trihalomethanes	0.080		
Haloacetic acids	0.060		
		Transient noncommunity	Not applicable.

Table 3. Organic Chemicals Maximum Contaminant Level Determination (continued)

Contaminants	MCL (mg/L)	Type of Water System	Determination of MCL violation
Specific Organic Chemicals		Community, NTNC and Noncommunity	If the results of a monitoring sample analysis exceed the MCL, the supplier of water shall collect one to three more samples from the same sampling point, as soon as practical, but within 30 days. An MCL violation occurs when at least one of the confirming samples is positive ¹ and the average of the initial sample and all confirming samples exceeds the MCL.
Alachlor	0.002		
Aldicarb	0.003		
Aldicarb sulfone	0.002		
Aldicarb sulfoxide	0.004		
Atrazine ⁴	0.003		
Benzo(a)pyrene	0.0002		
Carbofuran	0.04		
Chlordane	0.002		
Di(2-ethylhexyl)phthalate	0.006		
Dibromochloropropane (DBCP)	0.0002		
2,4-D	0.05		
Dinoseb	0.007		
<u>1,4-Dioxane</u>	<u>0.0010</u>		
Diquat	0.02		
Endrin	0.0020.0000		
Ethylene dibromide (EDB)	5		
Heptachlor	0.0004		
Heptachlor epoxide	0.0002		
Hexachlorobenzene	0.001		
Lindane	0.0002		
Methoxychlor	0.04		
Methyl-tertiary-butyl-ether (MTBE)	0.010		
Pentachlorophenol	0.001		
<u>Perfluorooctanesulfonic acid (PFOS)</u>	<u>0.0000100</u>		
<u>Perfluorooctanoic acid (PFOA)</u>	<u>0.0000100</u>		
Polychlorinated biphenyls (PCBs) ⁵	0.0005		
Propylene glycol	1.0		
Simazine	0.004		
Toxaphene	0.003		
2,4,5-TP (Silvex)	0.01		
2,3,7,8-TCDD (Dioxin)	0.00000003		
Vinyl chloride	0.002		

Table 3 (continued)

¹ A sample is considered positive when the quantity reported by the State approved laboratory is greater than or equal to the method detection limit.

² For systems monitoring yearly or less frequently, the sample results for each monitoring location is considered the LRAA for that monitoring location. Systems required to conduct monitoring at a frequency that is less than quarterly shall monitor in the calendar month identified in the monitoring plan developed under section 5- 1.51(c). Compliance calculations shall be made beginning with the first compliance sample taken after the compliance date.

³ Systems that are demonstrating compliance with the avoidance criteria in section 5-1.30(c), shall comply with the TTHM and HAA5 LRAA MCLs; however the LRAA MCLs are not considered for avoidance purposes. For avoidance purposes, TTHMs and HAA5s are based on a running annual average of analyses from all monitoring locations.

⁴ Syngenta Method AG-625, "Atrazine in Drinking Water by Immunoassay," February 2001, available from Syngenta Crop Protection, Inc., 410 Swing Road, P.O. Box 18300, Greensboro, NC 27419. Telephone: 336-632-6000, may not be used for the analysis of atrazine in any system where chlorine dioxide is used for drinking water treatment. In samples from all other systems, any result for atrazine generated by Method AG-625 that is greater than one-half the maximum contaminant level (MCL) (in other words, greater than 0.0015mg/L or 1.5 µg/L) must be confirmed using another approved method for this contaminant and should use additional volume of the original sample collected for compliance monitoring. In instances where a result from Method AG-625 triggers such confirmatory testing, the confirmatory result is to be used to determine compliance

⁵ If PCBs (as one of seven Aroclors) are detected in any sample analyzed using EPA Method 505 or 508, the system shall reanalyze the sample using EPA Method 508A to quantitate PCBs (as decachlorobiphenyl). Compliance with the PCB MCL shall be determined based upon the quantitative results of analyses using Method 508A.

Section 5-1.52, Table 9C is repealed and replaced with a new Table 9C to reads as follows:

Table 9C. Additional Organic Chemicals - Minimum Monitoring Requirements

Contaminant		Type of water system	Initial requirement ¹	Continuing requirement where detected ^{1,2,3,4}	Continuing requirement where not detected ¹			
Alachlor Aldicarb Aldicarb sulfone Aldicarb sulfoxide Aldrin Atrazine Benzo(a)pyrene Butachlor Carbaryl Carbofuran Chlordane Dalapon Di(2-ethylhexyl)adipate Di(2-ethylhexyl)phthalate Dibromochloropropane Dicamba 2,4-D Dieldrin Dinoseb 1,4-Dioxane Diquat Endothall Endrin	Ethylene Dibromide	Community and Nontransient Noncommunity serving 3,300 or more persons ³	Quarterly sample per source, for one year ⁵	Quarterly	One sample every eighteen months per source ^{6,7,8}			
	Glyphosate							
	Heptachlor							
	Heptachlor epoxide	Community and Nontransient Noncommunity serving fewer than 3,300 persons and more than 149 service connections	Quarterly samples per entry point, for one year ^{6,7,8}	Quarterly	Once per entry point every three years ^{6,7,8}			
	Hexachlorobenzene							
	Hexachlorocyclopentadiene							
	3-Hydroxycarbofuran							
	Lindane							
	Methomyl							
	Methoxychlor							
	Metolachlor							
	Metribuzin							
	Oxamyl (vydate)							
	Pentachlorophenol							
	Perfluorooctanesulfonicacid (PFOS)					Community and Nontransient Noncommunity serving fewer than 3,300 persons and fewer than 150 service connections	Quarterly samples per entry point for one year ^{6,7,8}	Quarterly
Perfluorooctanoic acid (PFOA)								
Picloram								
Polychlorinated biphenyls								
Propachlor								
Simazine								
2,3,7,8-TCDD (Dioxin)								
2,4,5-TP (Silvex)								
Toxaphene								
	Noncommunity excluding NTNC	State discretion ⁹	State discretion ⁹	State discretion ⁹				

Table 9C (continued)

¹The location for sampling of each ground water source of supply shall be between the individual well and at or before the first service connection and before mixing with other sources, unless otherwise specified by the State to be at the entry point representative of the individual well. Public water systems which take water from a surface water body or watercourse shall sample at points in the distribution system representative of each source or at entry point or points to the distribution system after any water treatment plant.

²The State may decrease the quarterly monitoring requirement to annually provided that system is reliably and consistently below the MCL based on a minimum of two quarterly samples from a ground water source and four quarterly samples from a surface water source. Systems which monitor annually must monitor during the quarter that previously yielded the highest analytical result. Systems serving fewer than 3,300 persons and which have three consecutive annual samples without detection may apply to the State for a waiver in accordance with footnote 6.

³If a contaminant is detected, repeat analysis must include all analytes contained in the approved analytical method for the detected contaminant.

⁴Detected as used in the table shall be defined as reported by the State approved laboratory to be greater than or equal to the method detection limit.

⁵The State may allow a system to postpone monitoring for a maximum of two years, if an approved laboratory is not reasonably available to do a required analysis within the scheduled monitoring period.

⁶The State may waive the monitoring requirement for a public water system that submits information every three years to demonstrate that a contaminant or contaminants was not used, transported, stored or disposed within the watershed or zone of influence of the system.

⁷The State may reduce the monitoring requirement for a public water system that submits information every three years to demonstrate that the public water system is invulnerable to contamination. If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.

- a. Previous analytical results.
- b. The proximity of the system to a potential point or nonpoint source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities. Nonpoint sources include the use of pesticides to control insect and weed pests on agricultural areas, forest lands, home and gardens, and other land application uses.
- c. The environmental persistence and transport of the pesticide, PCBs, PFOA, PFOS or 1,4-dioxane.
- d. How well the water source is protected against contamination due to such factors as depth of the well and the type of soil and the integrity of the well casing.
- e. Elevated nitrate levels at the water supply source.
- f. Use of PCBs in equipment used in production, storage or distribution of water.

⁸The State may allow systems to composite samples in accordance with the conditions in Appendix 5-C of this Title.

⁹State discretion shall mean requiring monitoring when the State has reason to believe the MCL has been violated, the potential exists for an MCL violation or the contaminant may present a risk to public health.

Section 5-1.52 Table 13 is amended to read as follows:

Table 13 – REQUIRED NOTIFICATIONS

Contaminant/Situation (Subpart 5-1 citations)	Single sample exceeds MCL/MRDL ¹	MCL/MRDL/TT ¹ violation	Failure to meet monitoring requirements and/or failure to use applicable testing procedure
Public Health Hazard (Section 5-1.1(bz)) ²	Not applicable	State Tier 1	State Tier 1
<i>Escherichia coli</i> (<i>E. coli</i>) in distribution system (Section 5-1.52, Tables 6, 11 and 11B)	State ³ Not applicable, or Tier 1 ⁴	State Tier 1	State Tier 3, or Tier 1 ⁵
<i>E. coli</i> or other fecal indicator detected in ground water source at system not providing both 4- log virus treatment and process compliance monitoring (Section 5-1.52, Tables 6, 11 and 11B)	Tier 1 ^{2,3,5,6}	Tier 1 ⁶	State Tier 3, or Tier 1 ^{2,5,7}
Total coliform in distribution system (Section 5-1.52, Tables 6, 11 and 11B)	Not applicable	State ⁸ Tier 2, or Tier 1 ⁹	State Tier 3, or Tier 2 as directed by State
Entry Point Turbidity monthly average (Section 5-1.52, Tables 4 and 10)	State ¹⁰	State Tier 2	State Tier 3
Entry Point Turbidity two-day average (Section 5-1.52, Tables 4 and 10)	State	State Tier 2, or Tier 1 ¹¹	State Tier 3
Raw Water Turbidity (Subdivision 5-1.30(d) and Section 5-1.52, Table 10A)	State	State Tier 2, or Tier 1 ¹¹	State Tier 3
Filtered Water Turbidity Single exceedance of the maximum allowable Turbidity level (Section 5-1.52, Tables 4A and 10A)	State	State Tier 2, or Tier 1 ¹¹	State Tier 3
Filtered Water Turbidity Treatment Technique violation (Section 5-1.52, Tables 4A and 10A)	Not applicable	State Tier 2	State Tier 3

Table 13 (cont.)

Contaminant/Situation (Subpart 5-1 citations)	Single sample exceeds MCL/MRDL¹	MCL/MRDL/TT¹ violation	Failure to meet monitoring requirements and/or failure to use applicable testing procedure
Distribution Point Turbidity (Section 5-1.52, Tables 5, 10 and 10A)	Not applicable	State Tier 2	State Tier 3
Treatment Technique violations other than turbidity ^{12,13} (Sections 5-1.12, 5-1.30, 5-1.32, 5-1.81, and 5-1.83 and Subdivision 5- 1.71(d))	Not applicable	State Tier 2, or Tier 1 ^{2,13}	State Tier 3 ¹³ , or Tier 2 ¹²
Free chlorine residual less than 0.2 mg/L at the entry point ¹⁴ (Subdivision 5-1.30(d))	Not applicable	State	Not applicable
Free chlorine residual less than required minimum for a ground water system or ground water source required to provide 4-log virus treatment ¹⁵ (Subdivision 5- 1.30(a))	Not applicable	State Tier 2, or Tier 1 ⁹	Tier 2
Inorganic chemicals and physical characteristics listed in Tables 8A and 8B (Section 5-1.52, Tables 1, 8A, and 8B)	State	State Tier 2	State Tier 3
Chloride, iron, manganese, silver, sulfate, and zinc (Section 5-1.52, Tables 1 and 8D)	Not applicable	State Tier 3	State Tier 3
Sodium (Section 5-1.52, Tables 1 and 8D)	State if the level exceeds 20 mg/L	Tier 2 if the level exceeds 270 mg/L	Tier 3
Nitrate, Nitrite, Total Nitrate and Nitrite (Section 5-1.52, Tables 2 and 8C)	State	State Tier 1	State Tier 1, or Tier 3 ¹⁶
Lead and Copper (Sections 5- 1.40 to 1.48)	Not applicable	State Tier 2	State Tier
Organic Chemicals Group 1 and 2 (Section 5-1.52, Table 9C)	State	State Tier 2	State Tier 3

Table 13 (cont.)

Contaminant/Situation (Subpart 5-1 citations)	Single sample exceeds MCL/MRDL¹	MCL/MRDL/TT₁ violation	Failure to meet monitoring requirements and/or failure to use applicable testing procedure
Acrylamide and Epichlorohydrin (Subdivision 5-1.51(m))	Not applicable	State Tier 2	Not applicable
Operation under a variance [or], exemption or deferral (sections 5- 1.90 to 5-1.96 and section 5- 1.51(p))	Not applicable	Tier 3	Not applicable
Violation of conditions of a variance [or], exemption or deferral (sections 5-1.90 to 5-1.96 and section 5-1.51(p))	Not applicable	State Tier 2	Not applicable
Disruption of water service of four hours or more (Subdivision 5-1.23(b))	Not applicable	State ¹⁹	Not applicable

¹MCL-maximum contaminant level, MRDL-maximum residual disinfectant level, TT-treatment technique

²Community systems must describe in their annual water supply statement (see section 5-1.72(e) and (f)) any Public Health Hazard that is determined to be a violation, and any uncorrected significant deficiency, and must indicate whether corrective action has been completed. This notice must be repeated every year until the annual report documents that corrective action has been completed in accordance with section 5-1.22 of this Subpart.

³State notification must be made by the supplier of water within 24 hours of learning of an *E. coli* positive sample.

⁴Public notification normally does not have to be issued for an *E. coli* positive sample prior to the results of the repeat samples. However, there may be situations where the State determines that a Tier 1 notification is necessary to protect the public health. The supplier of water must provide the Tier 1 notification no later than 24 hours after learning of the State's determination.

⁵Failure to test for *E. coli* requires a Tier 1 notification if testing is not performed after any repeat sample tests positive for coliform. All other *E. coli* monitoring and testing procedure violations require Tier 3 notification.

⁶At a ground water system, Tier 1 notification is required after initial detection of *E. coli* or other fecal indicator in raw source water, if the system does not provide 4-log virus treatment and process compliance monitoring. Confirmation of *E. coli* or other fecal indicator in the source water requires Tier 1 notification. Failure to take confirmatory samples may be a public health hazard requiring Tier 1 notification.

⁷Notice of the fecal indicator positive raw water sample must be made in the annual water supply statement (see section 5-1.72(e)), until the annual report documents that corrective action has been completed.

⁸State notification must be made by the supplier of water within 24 hours of learning of the violation.

Table 13 (cont)

⁹Tier 2 notification is normally required; however, there may be situations where the State determines that a Tier 1 notification is necessary to protect the public health. The supplier of water must provide the Tier 1 notification no later than 24 hours after learning of the State's determination.

¹⁰If the daily entry point analysis exceeds one NTU, a repeat sample must be taken as soon as practicable, and preferably within one hour. If the repeat sample exceeds one NTU, the supplier of water must make state notification.

¹¹Systems must consult with the State within 24 hours after learning of the violation. Based on this consultation, the State may subsequently decide to elevate the violation from a Tier 2 to a Tier 1 notification. If consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notification no later than 48 hours after the system learns of the violation.

¹²These violations include the following: failure to comply with the treatment technique or monitoring requirements in section 5-1.30(a), (b), (c), and (g) of this Subpart; failure to comply with the avoidance criteria in section 5-1.30(c) of this Subpart; failure to cover a finished water storage facility or treat its discharge required in section 5-1.32 of this Subpart; failure to report to the state information required in section 5-1.72(c)(3) of this Subpart; failure to maintain records required in section 5-1.72(d)(7) of this Subpart; and failure to meet the treatment and bin classification requirements associated with *Cryptosporidium* in section 5-1.83 of this Subpart. Failure to collect three or more samples for *Cryptosporidium* analysis as required in section 5-1.81 of this Subpart is a Tier 2 violation requiring public notification. Failure to perform any other monitoring and testing procedure as required in section 5-1.81 of this Subpart is a Tier 3 violation.

¹³Any significant deficiency that is not corrected, or where correction has not begun according to a State-approved corrective action plan within 120 days, or as directed by the State, is a TTV and must be addressed in accordance with section 5-1.12. If the deficiency is a public health hazard, the deficiency must be addressed as directed by the State and Tier 1 notification is required.

¹⁴Applies to systems that have surface water or groundwater directly influenced by surface water as a source and use chlorine. The system must make State notification whether the residual was restored to at least 0.2 mg/L within four hours.

¹⁵Required minimum chlorine residual at point that demonstrates adequate CT for disinfected water from ground water sources at first customer.

¹⁶Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL requires a Tier 1 notification. Other monitoring violations for nitrate or nitrite require a Tier 3 notification.

¹⁷Failure to monitor for chlorine dioxide at the entrance to the distribution system the day after exceeding the MRDL at the entrance to the distribution system requires a Tier 2 notification. Other monitoring violations for chlorine dioxide at the entrance to the distribution system require a Tier 3 notification.

¹⁸If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and one or more samples taken in the distribution system the next day exceed the MRDL, Tier 1 notification is required. Failure to take the required samples in the distribution system the day after the MRDL is exceeded at the entry point also triggers Tier 1 notification.

¹⁹Tier 1 notification is required if the situation meets the definition of a public health hazard.

Section 5-1.91 (d) is amended to read as follows:

(d) The technologies listed in this section are the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for organic chemicals listed in section 5-1.52 table 3 of this Subpart:

BEST AVAILABLE TECHNOLOGIES (BATs)

Contaminant	Best Available Technologies		
	PTA ¹	GAC ²	OX ³
Alachlor		X	
Aldicarb		X	
Aldicarb sulfone		X	
Aldicarb sulfoxide		X	
Atrazine		X	
Benzene	X	X	
Benzo(a)pyrene		X	
Carbofuran		X	
Carbon tetrachloride	X	X	
Chlordane		X	
Dalapon		X	
Di(2-ethylhexyl)adipate	X	X	
Di(2-ethylhexyl)phthalate		X	
2,4-D		X	
Dibromochloropropane	X	X	
1,1-Dichloroethylene	X	X	
para-Dichlorobenzene	X	X	
o-Dichlorobenzene	X	X	
1,2-Dichloroethane	X	X	
cis-1,2-Dichloroethylene	X	X	
trans-1,2-Dichloroethylene	X	X	
Dichloromethane	X		
1,2-Dichloropropane	X	X	
Dinoseb		X	
<u>1,4-Dioxane</u>			<u>X</u>
Endothal		X	
Endrin		X	

Ethylbenzene	X	X	
Ethylene dibromide	X	X	
Glyphosate			X
Heptachlor		X	
Heptachlor epoxide		X	
Hexachlorobenzene		X	
Hexachlorocyclopentadiene	X	X	
Lindane		X	
Methoxychlor		X	
Monochlorobenzene	X	X	
Oxamyl (Vydate)		X	
PCBs		X	
Pentachlorophenol		X	
Perfluorooctanesulfonic acid (PFOS)		X	
Perfluorooctanoic acid (PFOA)		X	
Picloram		X	
Simazine		X	
Styrene	X	X	
2,3,7,8-TCDD (Dioxin)		X	
Tetrachloroethylene	X	X	
Toluene	X	X	
Toxaphene		X	
2,4,5-TP		X	
1,2,4-Trichlorobenzene	X	X	
1,1,1-Trichloroethane	X	X	
1,1,2-Trichloroethane	X	X	
Trichloroethylene	X	X	
Vinyl chloride	X		
Xylenes (total)	X	X	
TTHM, HAA5, Bromate, Chlorite ⁴			

¹Packed Tower Aeration

²Granular Activated Carbon

³Oxidation (Chlorination or Ozonation) and Advanced Oxidation Process (AOP)

⁴For surface water systems or ground water systems influenced by surface water, GAC10, as defined in section 5-1.1 of this Subpart, is the BAT for compliance with the TTHM and HAA5 MCL as a Running Annual Average (RAA). The other BAT for RAA compliance is enhanced coagulation for TTHM and HAA5 precursor removal, as described in section 5-1.60 of this Subpart. For compliance with the MCLs for TTHM and HAA5 as LRAAs, the following are the BATs: enhanced coagulation or enhanced softening, plus GAC10; GAC20, as defined in section 5-1.1 of this Subpart; or nanofiltration with a molecular weight cutoff less than or equal to 100 Daltons. Refer to section 5-1.65 of this Subpart for BATs for TTHM, HAA5, Bromate, and Chlorite.

The title of subdivision (B) of section (II) of Appendix 5-C is amended to read as follows:

B. Water Sample Compositing Requirements for Pesticides, Dioxin, [and] PCBs, PFOA, PFOS, and 1,4-Dioxane

SUMMARY OF REGULATORY IMPACT STATEMENT

Statutory Authority:

The statutory authority for the proposed revisions is set forth in Public Health Law (PHL) sections 201 and 225. Section 201(1)(l) of the PHL establishes the powers and duties of the New York State Department of Health (Department), which include the supervision and regulation of the sanitary aspects of public water systems. Section 225 of the PHL sets forth the powers and duties of the Public Health and Health Planning Council (PHHPC), which include the authority to establish, amend and repeal sanitary regulations to be known as the State Sanitary Code (SSC), subject to the approval of the Commissioner of Health. Further, section 225(5)(a) of the PHL allows the SSC to deal with any matter affecting the security of life or health, or the preservation or improvement of public health, in New York State.

Legislative Objective:

The legislative objective of sections 201 and 225 of the PHL is to ensure that PHHPC, in conjunction with the Commissioner of Health, protect public health by adopting drinking water sanitary standards. In accordance with that objective, this regulation amends the SSC by revising Part 5 to enhance current protections governing public water systems. Furthermore, this amendment will update the SSC in accordance with the recommendations of the Drinking Water Quality Council, by establishing specific maximum contaminant levels (MCLs) for perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS) and 1,4-dioxane.

Needs and Benefits:

In 2017, New York State (NYS) identified PFOA, PFOS and 1,4-dioxane as emerging contaminants in drinking water. That same year, the Drinking Water Quality Council (DWQC) was created, with direction to recommend MCLs for these emerging contaminants. After discussions and deliberations, the DWQC recommended MCLs to the Department for PFOA, PFOS and 1,4-dioxane. Specifically, the DWQC recommended: an MCL of 10.0 parts per trillion (ppt) (or, expressed in different units, 0.0000100 milligrams per liter (mg/L)) for PFOA; 10.0 ppt (or 0.0000100 mg/L) for PFOS; and 1.0 part per billion (ppb) (or 0.0010 mg/L) for 1,4-dioxane.

From 2015 through 2018, the Department coordinated targeted sampling of 278 public water systems for PFOA and PFOS. The 278 public water systems were mainly medium (serving 3,300 to 10,000 persons) to small (serving less than 3,300 persons) community water systems and non-transient noncommunity systems typically with a groundwater source located near a potential source of PFOA and/or PFOS. The results of this testing are shown in Figures 1A and 1B.

Figure 1A.

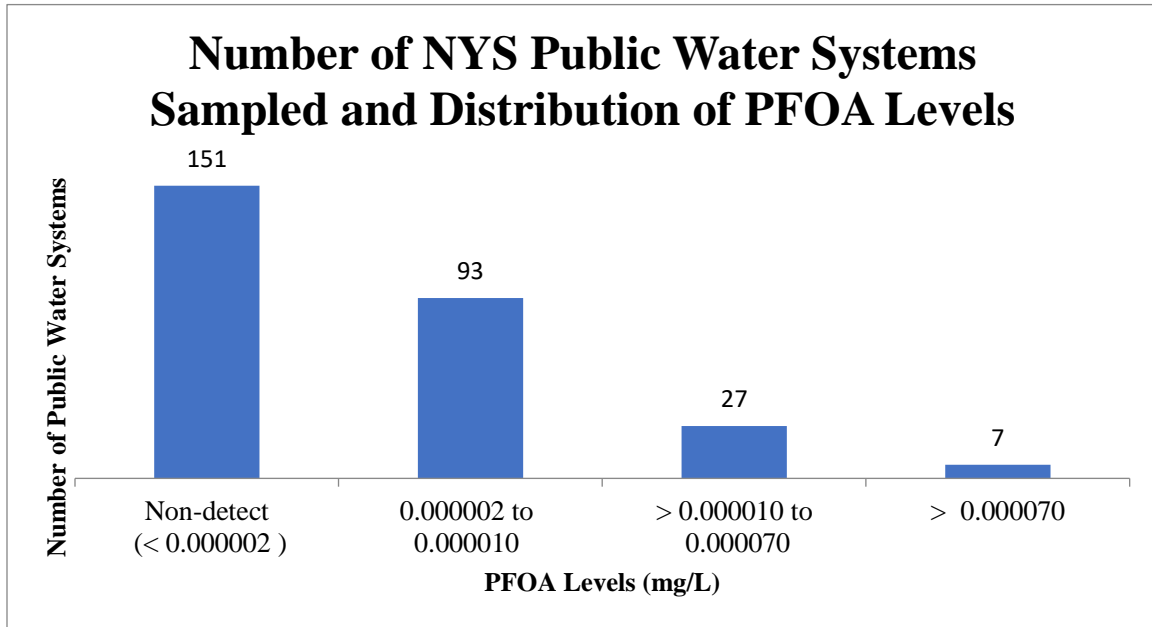
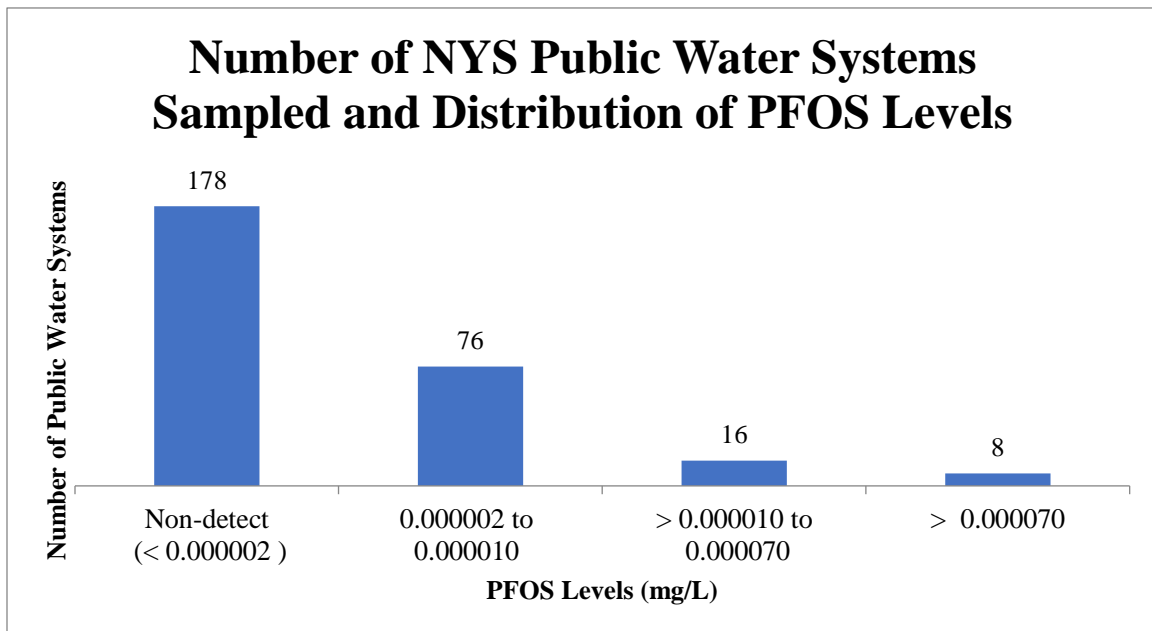


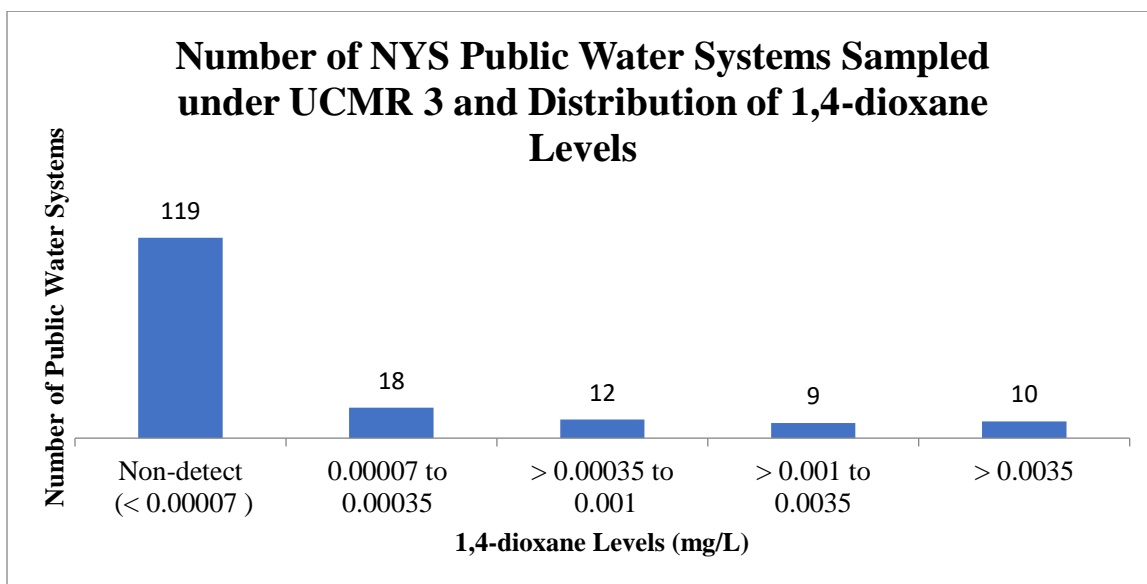
Figure 1B.



From 2013 through 2015 public water systems across NYS, under the United States Environmental Protection Agency (US EPA) Unregulated Contaminant Monitoring Rule

3 (UCMR 3), tested for 1,4-dioxane. All large public water systems (serving 10,000 persons or more) and 32 randomly selected medium and small water systems (serving less than 10,000 persons) in NYS conducted testing. Figure 2 shows that 11 percent (%) of the water systems tested had 1,4-dioxane levels above the DWQC’s recommended MCL of 0.0010 mg/L.

Figure 2.



Based on the UCMR3 data, 51% of the samples from Long Island public water systems had levels of 1,4-dioxane above the reporting level of 0.00007 mg/L compared to 6% for NYS excluding Long Island.

The Department provided the DWQC with technical information on a range of health-based drinking water values for PFOA, PFOS and 1,4-dioxane after an evaluation of the available health effects information on the chemicals from toxicological studies. These values included current national and state guidelines and advisory levels, as well as

potential health based values developed by the Department. Based on their review of this information, the DWQC recommended an MCL of 0.0000100 mg/L for PFOA and PFOS as individual compounds, which is within the range of the potential health based water values presented to the DWQC by the Department (0.000006 to 0.000070 mg/L for PFOA and 0.000008 to 0.000070 mg/L for PFOS). The DWQC recommended an MCL of 0.0010 mg/L for 1,4-dioxane, which is within the range of current national and state guidelines and advisory levels presented by the Department (0.00035 to 0.2 mg/L).

In the absence of federal regulations governing PFOA, PFOS and 1,4-dioxane in drinking water, and after consideration of the recommendations provided by the DWQC, the Department is proposing to amend 10 NYCRR Part 5 to establish MCLs for these contaminants. The Department is proposing an MCL of 0.0000100 mg/L for PFOA and PFOS as individual contaminants, and 0.0010 mg/L for 1,4-dioxane. These MCLs will apply to all public water supplies regulated by the Department and provide a sufficient margin of protection against adverse health effects in the most sensitive populations, including fetuses during pregnancy, breastfed infants, and infants bottle fed with formula reconstituted using tap water. In addition, the MCLs provide a sufficient margin of protection for lifetime exposure through drinking water for the general population.

Compliance Costs

Cost to Private Regulated Parties:

There are approximately 7,200 privately owned public water systems in NYS. Of these, an estimated 2,100 systems serve residential suburban areas, manufactured housing communities and apartment buildings, residential and non-residential health care

facilities, industrial and commercial buildings, private schools and colleges, and other facilities. The remaining 5,100 privately owned public water systems serve restaurants, convenient stores, motels, campsites and other transient systems. Costs will include initial monitoring, continued routine monitoring and treatment in the event of a MCL exceedance for PFOS, PFOA and/or 1,4-dioxane.

Monitoring and treatment costs for privately-owned public water systems is dependent upon the system size, the number of affected entry points/sources and the concentration of each contaminant. The exact costs for monitoring and treatment of PFOS, PFOA and 1,4-dioxane for public water systems, including privately-owned public water systems, cannot be determined due to several variables. The cost for a single PFOA/PFOS analysis is between \$200-\$300 per sample. The cost of a single 1,4-dioxane analysis is between \$100-\$250.

It is estimated that approximately 21% of all public water systems, including privately-owned public water systems, will have levels of PFOA or PFOS above the proposed MCLs of 0.0000100 mg/L. For small systems serving less than 3,300 persons, capital and annual maintenance costs are estimated to be approximately \$400,000 and \$25,000, respectively. For medium systems (serving 3,300 or more persons but less than 10,000 persons), capital and annual maintenance costs are estimated to be approximately \$2,400,000 and \$125,000, respectively. For large systems (serving 10,000 persons or more), capital and annual maintenance costs are estimated to be approximately \$15,000,000 and \$725,000, respectively.

It is estimated that eighty-nine (89) public water *facilities*, (a single public water system may be comprised of multiple public water facilities), will have a detection of 1,4-dioxane above the proposed MCL of 0.0010 mg/L. The average cost of treatment for 1,4-dioxane is estimated to be \$3,570,000 per system, with an estimated average annual operation and maintenance cost of approximately \$150,000 per system.

Public water systems will likely make rate adjustments to accommodate these additional capital and operational costs.

Cost to State Government:

State agencies that operate public water systems will be required to comply with the proposed amendments. There are approximately 250 State-owned or operated facilities with a public water system. Examples of such facilities are State-owned schools, buildings, correctional facilities, Thruway services areas, and any other State-owned structure or property that serves an average of at least 25 individuals daily at least 60 days out of the year.

Costs will include initial monitoring for PFOA, PFOS and/or 1,4-dioxane, continued routine monitoring, and treatment in the event of a MCL exceedance. These potential costs will be the same as the costs to private regulated parties.

The proposed regulation will also impose administrative costs to the Department relating to implementation and oversight of the drinking water monitoring requirements including

review and approval of sampling schedules; review and reporting of sample results; providing technical assistance to the public water suppliers; review and approval of plans (i.e., treatment plans); and activities associated with enforcement and public notification of MCL exceedances.

Additionally, the Department and NYS Department of Environmental Conservation (NYSDEC) will incur costs associated with the investigation, remediation, and long-term monitoring associated with the release of these contaminants.

Although the proposed regulations do not apply to private wells, costs will be incurred by NYSDEC, as the lead agency for investigating, remediating, and monitoring of contaminated sites, as the MCLs will be used by the NYSDEC as guidance to determine whether a private well in NYS is contaminated by PFOA, PFOS and/or 1,4-dioxane. There are an estimated 800,000 private water supply wells in NYS. At this time, it is not possible to estimate the number of private wells that might be affected by contamination and, therefore, associated costs to NYSDEC cannot be determined.

Cost to Local Government:

The regulations will apply to local governments—including towns, villages, counties, cities, and authorities or area wide improvement districts—which own or operate a public water system subject to this regulation. There are approximately 1,500 public water systems that are owned or operated by local governments.

Costs will include initial monitoring for PFOA, PFOS and/or 1,4-dioxane, continued routine monitoring, and treatment in the event of a MCL exceedance. These potential costs will be the same as the costs to private regulated parties.

Local health departments that regulate drinking water will also incur administrative costs related to local implementation and oversight of the drinking water monitoring requirements including review and approval of sampling schedules; review and reporting of sample results; providing technical assistance to the public water suppliers; review and approval of plans (i.e., treatment plans); review and approval of MCL deferrals; and activities associated with enforcement and public notification.

Local Government Mandates:

Local governments will be required to comply with this regulation as noted above.

Paperwork:

The additional monitoring, reporting, recordkeeping and paperwork needed for PFOA, PFOS and 1,4-dioxane is expected to be minimal because operators of public water supplies are currently required to keep such records for existing MCLs, and these regulations only add three additional chemicals. The reporting and recordkeeping requirements will increase if MCLs are exceeded and/or treatment is required.

Duplication:

There will be no duplication of existing State or federal regulations.

Alternatives:

One alternative is to maintain the existing MCL of 0.05 mg/L that applies to all unspecified organic chemicals when no chemical-specific MCL exists. Another alternative is to wait for the US EPA to issue a federal MCL. Based on DWQC deliberations and the additional analysis done by the Department it was determined that the current MCL of 0.05 mg/L, which is a generic standard for a broad class of organic chemicals is not protective of public health for these three specific chemicals. Waiting for the US EPA to set a new MCL was impractical due to the prevalence and concerns surrounding PFOA, PFOS and 1,4-dioxane. Therefore, the Department determined that adoption of the DWQC MCL recommendations for PFOA, PFOS and 1,4-dioxane is in the best interest of protecting the public health of NYS residents.

Federal Standards:

There is no federal MCL for PFOA, PFOS or 1,4-dioxane.

Compliance Schedule:

The MCLs will be immediately effective upon publication of a Notice of Adoption in the New York State Register. Public water systems serving 10,000 persons or more must begin monitoring within 60 days of adoption. Water systems serving 3,300 to 9,999 people must begin monitoring within 90 days of adoption and water systems serving less than 3,300 must begin monitoring within 6 months of adoption.

Based on public comments received, the Department has included a provision for a public water system to defer an MCL violation. A public water system can request, from the State, a deferral within 90 days of the effective date of the MCL if the public water system has sample results that exceed the MCL for PFOA, PFOS or 1,4-dioxane, and they have a plan in place to achieve compliance with the MCL; the deferral may be issued for up to two years with the potential for a one-year extension based on a demonstrated need.

Contact Person: Katherine Ceroalo
New York State Department of Health
Bureau of Program Counsel, Regulatory Affairs Unit
Corning Tower Building, Rm. 2438
Empire State Plaza
Albany, New York 12237
(518) 473-7488
(518) 473-2019 (FAX)
REGSQNA@health.ny.gov

REGULATORY IMPACT STATEMENT

Statutory Authority:

The statutory authority for the proposed revisions is set forth in Public Health Law (PHL) sections 201 and 225. Section 201(1)(l) of the PHL establishes the powers and duties of the New York State Department of Health (Department), which include the supervision and regulation of the sanitary aspects of public water systems. Section 225 of the PHL sets forth the powers and duties of the Public Health and Health Planning Council (PHHPC), which include the authority to establish, amend and repeal sanitary regulations to be known as the State Sanitary Code (SSC), subject to the approval of the Commissioner of Health. Further, section 225(5)(a) of the PHL allows the SSC to deal with any matter affecting the security of life or health, or the preservation or improvement of public health, in New York State.

Legislative Objective:

The legislative objective of sections 201 and 225 of the PHL is to ensure that PHHPC, in conjunction with the Commissioner of Health, protect public health by adopting drinking water sanitary standards. In accordance with that objective, this regulation amends the SSC by revising Part 5 to enhance current protections governing public water systems. Furthermore, this amendment will update the SSC in accordance with the recommendations of the Drinking Water Quality Council by establishing specific maximum contaminant levels (MCLs) for perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS) and 1,4-dioxane.

Needs and Benefits:

In 2017, New York State (NYS) identified PFOA, PFOS and 1,4-dioxane as emerging contaminants in drinking water. That same year, the Drinking Water Quality Council (DWQC) was created, with direction to recommend MCLs for these emerging contaminants. After discussions and deliberations, the DWQC recommended MCLs to the Department for PFOA, PFOS and 1,4-dioxane. Specifically, the DWQC recommended: an MCL of 10.0 parts per trillion (ppt) (or, expressed in different units, 0.0000100 milligrams per liter (mg/L)) for PFOA; 10.0 ppt (or 0.0000100 mg/L) for PFOS; and 1.0 part per billion (ppb) (or 0.0010 mg/L) for 1,4-dioxane.

PFOA, PFOS and 1,4-dioxane are anthropogenic chemicals that have been manufactured or used throughout the United States. PFOA and PFOS have been used for their emulsifier and surfactant properties in fire-fighting foam, polishes, and cleaners. PFOA has also been used in fluoropolymers (e.g. Teflon), cosmetics, lubricants, paints, coatings, laminates, adhesives and photographic films. 1,4-dioxane has been used as a stabilizer for chlorinated solvents, as a laboratory reagent and as a solvent in the manufacture of other chemicals. 1,4-dioxane is also found in paint strippers, antifreeze, dyes, greases, detergents, cosmetics and other consumer products.

PFOA and PFOS are no longer manufactured in the United States, but there may be some limited ongoing uses of these chemicals. The use of 1,4-dioxane as a solvent and solvent stabilizer has decreased because of the phase out of many chlorinated solvents, but it is

still used as a chemical intermediate and laboratory solvent, and can be found in some consumer products.

From 2015 through 2018, the Department coordinated targeted sampling of 278 public water systems for PFOA and PFOS. The 278 public water systems were mainly medium (serving 3,300 to 10,000 persons) to small (serving less than 3,300 persons) community water systems and non-transient noncommunity systems typically with a groundwater source located near a potential source of PFOA and/or PFOS. The results of this testing are shown in Figures 1A and 1B.

Figure 1A.

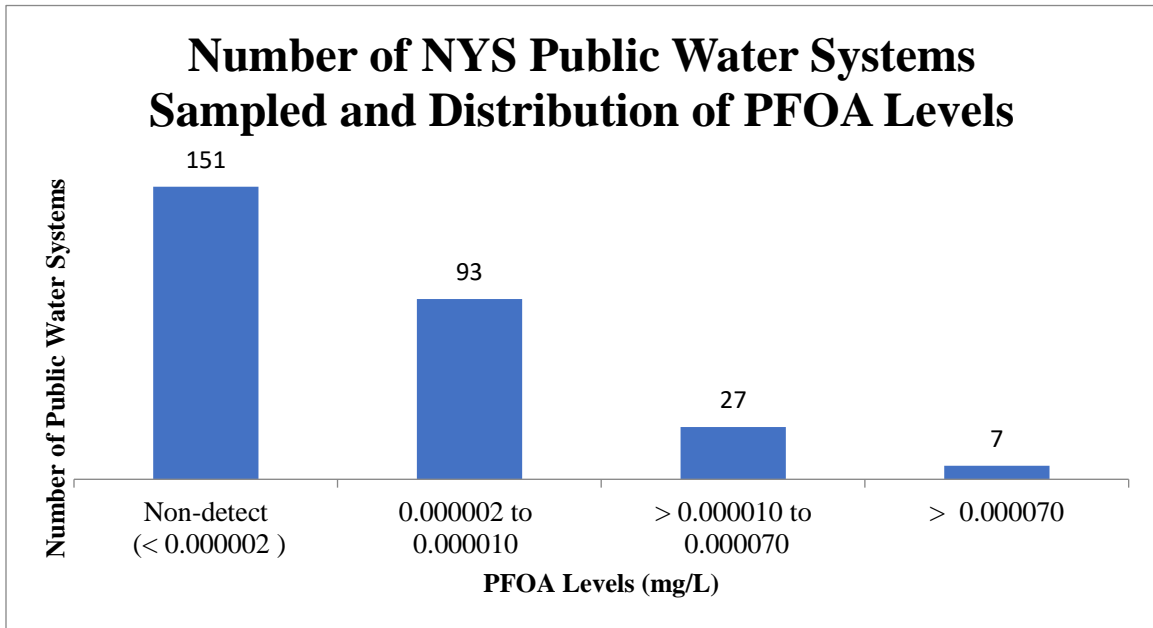
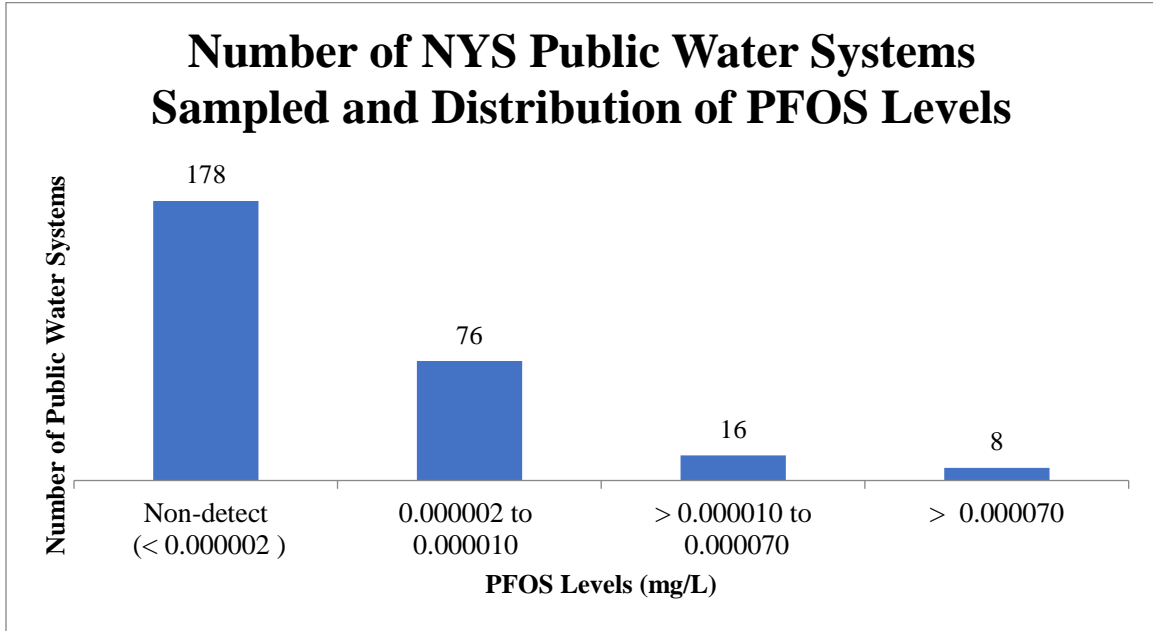
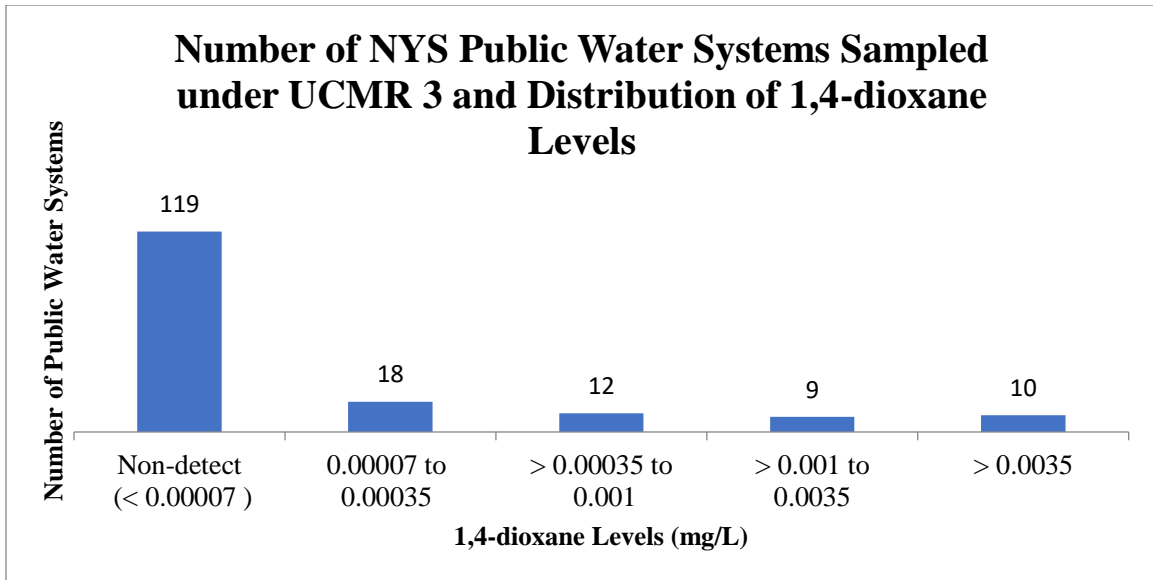


Figure 1B.



From 2013 through 2015 public water systems across NYS, under the United States Environmental Protection Agency (US EPA) Unregulated Contaminant Monitoring Rule 3 (UCMR 3), tested for 1,4-dioxane. All large public water systems (serving 10,000 persons or more) and 32 randomly selected medium and small water systems (serving less than 10,000 persons) in NYS conducted testing. Figure 2 shows that 11 percent (%) of the water systems tested had 1,4-dioxane levels above the DWQC's recommended MCL of 0.0010 mg/L.

Figure 2.



Based on the UCMR3 data, 51% of the samples from Long Island public water systems had levels of 1,4-dioxane above the reporting level of 0.00007 mg/L compared to 6% for NYS excluding Long Island.

The toxicity of PFOA has been extensively reviewed, evaluated and summarized by several authoritative bodies, including the US EPA, the Agency for Toxic Substances and Disease Registry (ATSDR), Health Canada, and the states of New Jersey and Minnesota. These evaluations indicate associations between increased PFOA exposure in humans and an increased risk for several types of health effects. These include effects on the liver, kidney, immune system, thyroid gland, cholesterol levels, uric acid levels, pre-eclampsia (a complication of pregnancy that includes high blood pressure), ulcerative colitis, development effects, and kidney and testicular cancer. Exposure to PFOA has also been shown to cause several adverse health effects in laboratory animals. PFOA caused cancer of the liver, pancreas, and testis in rats exposed for their lifetimes. Noncancer health effects caused by PFOA exposure in animals include liver toxicity, kidney toxicity,

developmental toxicity and immune system toxicity. The US EPA considers PFOA to have suggestive evidence of carcinogenic potential.

The toxicity of PFOS has also been extensively reviewed, evaluated and summarized by several authoritative bodies, including the US EPA, ATSDR, Health Canada, European Food Safety Authority, the Organization for Economic Co-operation and Development and the states of New Jersey and Minnesota. These evaluations indicate associations between increased PFOS exposure in humans and an increased risk for several health effects, including increases in total serum cholesterol, triglycerides, and uric acid, altered immune response, and effects on reproduction and development. PFOS exposure has also been shown to cause several adverse health effects in laboratory animals including liver and thyroid cancer in rats exposed for their lifetimes. Noncancer effects caused by PFOS in animals include effects on the liver, immune system, cholesterol levels, and the developing nervous system, and reduced survival in offspring born to rats. The US EPA considers PFOS to have suggestive evidence of carcinogenic potential.

The toxicity of 1,4-dioxane has been extensively reviewed, evaluated and summarized by the US EPA and ATSDR. 1,4-dioxane causes liver cancer in several species of laboratory animals (rats, mice and guinea pigs) exposed to high levels for their lifetimes. Other cancers caused by 1,4-dioxane in laboratory animals include breast cancer and cancer of the peritoneum and nasal cavity. Laboratory animals exposed to large amounts of 1,4-dioxane in drinking water for long periods of time also had noncancer health effects on the liver, kidney, nasal cavity and respiratory system. Based on sufficient evidence for

carcinogenicity in animals, the USEPA classifies 1,4-dioxane as likely to be carcinogenic to humans by all routes of exposure, and the United States Department of Health and Human Services includes 1,4-dioxane in its list of chemicals that are reasonably anticipated to be human carcinogens.

The Department provided the DWQC with technical information on a range of health-based drinking water values for PFOA, PFOS and 1,4-dioxane after an evaluation of the available health effects information on the chemicals from toxicological studies. These values included current national and state guidelines and advisory levels, as well as potential health based values developed by the Department. Based on their review of this information, the DWQC recommended an MCL of 0.0000100 mg/L for PFOA and PFOS as individual compounds, which is within the range of the potential health based water values presented to the DWQC by the Department (0.000006 to 0.000070 mg/L for PFOA and 0.000008 to 0.000070 mg/L for PFOS). The DWQC recommended an MCL of 0.0010 mg/L for 1,4-dioxane, which is within the range of current national and state guidelines and advisory levels presented by the Department (0.00035 to 0.2 mg/L).

In the absence of federal regulations governing PFOA, PFOS and 1,4-dioxane in drinking water, and after consideration of the recommendations provided by the DWQC, the Department is amending 10 NYCRR Part 5 to establish MCLs for these contaminants. The Department is proposing an MCL of 0.0000100 mg/L for PFOA and PFOS as individual contaminants, and 0.0010 mg/L for 1,4-dioxane. These MCLs will apply to all public water supplies regulated by the Department and provide a sufficient margin of

protection against adverse health effects in the most sensitive populations, including fetuses during pregnancy, breastfed infants, and infants bottle fed with formula reconstituted using tap water. In addition, the MCLs provide a sufficient margin of protection for lifetime exposure through drinking water for the general population.

These regulations will amend 10 NYCRR 5-1.52, Table 3, to list PFOA, PFOS and 1,4-dioxane and their proposed MCLs. In addition, these regulations will amend 10 NYCRR 5-1.52, Table 9C, to include these three contaminants in the current minimum monitoring requirements for additional organic chemicals. Table 9C was also amended to remove references to “Group 1” and “Group 2” chemicals as these groupings are outdated and no longer relevant. The MCLs apply to finished water. Initial monitoring for community and non-transient noncommunity public water systems will be quarterly for one year depending on system size. Monitoring at transient noncommunity public water systems will be at the Department’s discretion. Previous testing conducted using an Environmental Laboratory Approval Program (ELAP) approved method and laboratory may satisfy some or all of the initial monitoring requirements at the Department’s discretion, or the local health department’s discretion in consultation with the Department. Specifically, sample results for PFOA and PFOS analyzed after June 1, 2016 may be used to satisfy the initial monitoring requirements for 2019-20. Sample results for 1,4-dioxane analyzed after June 14, 2017 may be used to satisfy the initial monitoring requirements for 2019-20.

Compliance Costs

Cost to Private Regulated Parties:

There are approximately 7,200 privately owned public water systems in NYS. Of these, an estimated 2,100 systems serve residential suburban areas, manufactured housing communities and apartment buildings, residential and non-residential health care facilities, industrial and commercial buildings, private schools and colleges, and other facilities. The remaining 5,100 privately owned public water systems serve restaurants, convenient stores, motels, campsites and other transient systems. Costs will include initial monitoring, continued routine monitoring and treatment in the event of a MCL exceedance for PFOS, PFOA and/or 1,4-dioxane.

Monitoring and treatment costs for privately-owned public water systems is dependent upon the system size, the number of affected entry points/sources and the concentration of each contaminant. The exact costs for monitoring and treatment of PFOS, PFOA and 1,4-dioxane for public water systems, including privately-owned public water systems, cannot be determined due to several variables. The cost for a single PFOA/PFOS analysis is between \$200-\$300 per sample. The cost of a single 1,4-dioxane analysis is between \$100-\$250.

It is estimated that approximately 21% of all public water systems, including privately-owned public water systems, will have levels of PFOA or PFOS above the MCLs of 0.0000100 mg/L. For small systems serving less than 3,300 persons, capital and annual maintenance costs are estimated to be approximately \$400,000 and \$25,000, respectively.

For medium systems (serving 3,300 or more persons but less than 10,000 persons), capital and annual maintenance costs are estimated to be approximately \$2,400,000 and \$125,000, respectively. For large systems (serving 10,000 persons or more), capital and annual maintenance costs are estimated to be approximately \$15,000,000 and \$725,000, respectively.

It is estimated that eighty-nine (89) public water *facilities*, (a single public water system may be comprised of multiple public water facilities), will have a detection of 1,4-dioxane above the MCL of 0.0010 mg/L. The average cost of treatment for 1,4-dioxane is estimated to be \$3,570,000 per system, with an estimated average annual operation and maintenance cost of approximately \$150,000 per system.

Public water systems will likely make rate adjustments to accommodate these additional capital and operational costs.

Cost to State Government:

State agencies that operate public water systems will be required to comply with the proposed amendments. There are approximately 250 State-owned or operated facilities with a public water system. Examples of such facilities are State-owned schools, buildings, correctional facilities, Thruway services areas, and any other State-owned structure or property that serves an average of at least 25 individuals daily at least 60 days out of the year.

Costs will include initial monitoring for PFOA, PFOS and/or 1,4-dioxane, continued routine monitoring, and treatment in the event of a MCL exceedance. These potential costs will be the same as the costs to private regulated parties.

The proposed regulation will also create administrative costs to the Department relating to implementation and oversight of the drinking water monitoring requirements including review and approval of sampling schedules; review and reporting of sample results; providing technical assistance to the public water suppliers; review and approval of plans (i.e., treatment plans); and activities associated with enforcement and public notification.

Additionally, the Department and NYS Department of Environmental Conservation (NYSDEC) will incur costs associated with the investigation, remediation, and long-term monitoring associated with the release of these contaminants.

Although the proposed regulations do not apply to private wells, costs will be incurred by NYSDEC, as the lead agency for investigating, remediating, and monitoring of contaminated sites, as the MCLs will be used by the NYSDEC as guidance to determine whether a private well in NYS is contaminated by PFOA, PFOS and/or 1,4-dioxane. There are an estimated 800,000 private water supply wells in NYS. At this time, it is not possible to estimate the number of private wells that might be affected by contamination and therefore costs to NYSDEC cannot be determined.

Cost to Local Government:

The regulations will apply to local governments—including towns, villages, counties, cities, and authorities or area wide improvement districts—which own or operate a public water system subject to this regulation. There are approximately 1,500 public water systems that are owned or operated by local governments.

Costs will include initial monitoring for PFOA, PFOS and/or 1,4-dioxane, continued routine monitoring, and treatment in the event of a MCL exceedance. These potential costs will be the same as the costs to private regulated parties.

Local health departments that regulate drinking water will also incur administrative costs related to local implementation and oversight of the drinking water monitoring requirements including review and approval of sampling schedules; review and reporting of sample results; providing technical assistance to the public water suppliers; review and approval of plans (i.e., treatment plans); and activities associated with enforcement and public notification of MCL exceedances and deferrals.

Local Government Mandates:

Local governments will be required to comply with this regulation as noted above.

Paperwork:

The additional monitoring, reporting, recordkeeping and paperwork needed for PFOA, PFOS and 1,4-dioxane is expected to be minimal because operators of public water

supplies are currently required to keep such records for existing MCLs, and these regulations only add three additional chemicals. The reporting and recordkeeping requirements will increase if MCLs are exceeded and/or treatment is required.

Duplication:

There will be no duplication of existing State or federal regulations.

Alternatives:

One alternative is to maintain the existing MCL of 0.05 mg/L that applies to all unspecified organic chemicals when no chemical-specific MCL exists. Another alternative is to wait for the US EPA to issue a federal MCL. Based on DWQC deliberations and the additional analysis done by the Department it was determined that the current MCL of 0.05 mg/L, which is a generic standard for a broad class of organic chemicals is not protective of public health for these three specific chemicals. Waiting for the US EPA to set a new MCL was impractical due to the prevalence and concerns surrounding PFOA, PFOS and 1,4-dioxane. Therefore, the Department determined that adoption of the DWQC MCL recommendations for PFOA, PFOS and 1,4-dioxane is in the best interest of protecting the public health of NYS residents.

Federal Standards:

There is no federal MCL for PFOA, PFOS or 1,4-dioxane.

Compliance Schedule:

The MCLs will be immediately effective upon publication of a Notice of Adoption in the New York State Register. Public water systems serving 10,000 persons or more must begin monitoring within 60 days of adoption. Water systems serving 3,300 to 9,999 people must begin monitoring within 90 days of adoption and water systems serving less than 3,300 must begin monitoring within 6 months of adoption.

Based on public comments received, the Department has included a provision for a public water system to defer an MCL violation. A public water system can request, from the State, a deferral within 90 days of the effective date of the MCL if the public water system has sample results that exceed the MCL for PFOA, PFOS or 1,4-dioxane, and they have a plan in place to achieve compliance with the MCL; the deferral may be issued for up to two years with the potential for a one-year extension based on a demonstrated need.

Contact Person: Katherine Ceroalo
New York State Department of Health
Bureau of Program Counsel, Regulatory Affairs Unit
Corning Tower Building, Rm. 2438
Empire State Plaza
Albany, New York 12237
(518) 473-7488
(518) 473-2019 (FAX)
REGSQNA@health.ny.gov

REGULATORY FLEXIBILITY ANALYSIS FOR SMALL BUSINESS AND LOCAL GOVERNMENTS

Effect on Small Business and Local Governments:

Many of the public water systems affected by the new regulations are owned or operated by either small businesses or local governments. The Department does not maintain information on the exact number of the public water systems owned by small businesses. There are approximately 1500 water systems owned by local governments.

Reporting and Recordkeeping and Other Compliance Requirements:

The obligations on small businesses and local governments are the same as for all owners or operators of public water systems. The regulations require additional monitoring, reporting, recordkeeping and public notification requirements for three additional contaminants, PFOA, PFOS and 1,4-dioxane. These requirements will increase if MCLs are exceeded and/or treatment is required.

Local health departments that regulate drinking water will also incur administrative costs related to local implementation and oversight of the drinking water monitoring requirements including review and approval of sampling schedules; review and reporting of sample results; providing technical assistance to the public water suppliers; review and approval of plans (i.e., treatment plans); and activities associated with enforcement and public notification of MCL exceedances and deferrals.

Professional Services:

Public water systems impacted by the amended regulations will require the services of a laboratory to analyze samples for PFOA, PFOS and 1,4-dioxane. The laboratory must be approved by the Department under its Environmental Laboratory Approval Program (ELAP). Sufficient laboratory capability and capacity is anticipated to be available to process the initial staggered testing demands and future testing. If an MCL is exceeded, a licensed professional will be required to design changes to the public water system to meet the MCL.

Compliance Costs:**Cost to Private Regulated Parties and Local Governments:**

A small business or local government will incur the same costs as other regulated parties. Costs will include initial monitoring, continued routine monitoring, and treatment in the event of a MCL exceedance for PFOS, PFOA and 1,4-dioxane.

Monitoring and treatment costs for small businesses and local government owned public water systems is dependent upon the system size, the number of affected entry points/sources and the concentration of each contaminant. The exact costs for monitoring and treatment of PFOS, PFOA and 1,4-dioxane for public water systems, including privately-owned public water systems, cannot be determined due to several variables. The cost for a single PFOA/PFOS analysis is between \$200-\$300 per sample. The cost of a single 1,4-dioxane analysis is between \$100-\$250. For small systems serving less than 3,300 persons, capital and annual maintenance costs are estimated to be approximately \$400,000 and \$25,000, respectively. For medium systems (serving 3,300 or more persons

but less than 10,000 persons), capital and annual maintenance costs are estimated to be approximately \$2,400,000 and \$125,000, respectively. For large systems (serving 10,000 persons or more), capital and annual maintenance costs are estimated to be approximately \$15,000,000 and \$725,000, respectively.

It is estimated that eighty-nine (89) public water *facilities*, (a single public water system may be comprised of multiple public water facilities), will detect 1,4-dioxane above the MCL of 0.0010 mg/L. The average cost of treatment for 1,4-dioxane is estimated to be \$3,570,000 per system, with an estimated average annual operation and maintenance cost of approximately \$150,000 per system.

Public water systems will likely make rate adjustments to accommodate these additional capital and operational costs.

Local health departments that regulate drinking water will also incur administrative costs related to local implementation and oversight of the drinking water monitoring requirements including review and approval of sampling schedules; review and reporting of sample results; providing technical assistance to the public water suppliers; review and approval of plans (i.e., treatment plans), and activities associated with enforcement, including public notification of MCL exceedances and deferrals.

Economic and Technological Feasibility:

These regulations are economically and technologically feasible for small businesses and local governments. Analytical methods exist for accurate sample analysis to detect PFOA, PFOS and 1,4-dioxane. There are also technologically feasible treatment solutions for all three contaminants. Treatment may present a greater challenge to smaller systems that typically have less resources including financial and technical expertise than larger systems.

Minimizing Adverse Impact:

The Department has included several provisions that minimize the impacts on regulated parties. Previous testing conducted using an ELAP approved method and laboratory may satisfy some or all of the initial monitoring requirements at the Department's discretion, or the local health department's discretion in consultation with the Department; sampling frequency will decrease after the first year if a contaminant (or the contaminants) is/are not detected at a public water system; the start of initial sampling is proposed to be staggered, requiring large systems to test first (within 60 days of adoption) and providing more time for smaller systems such that water systems serving between 3,300 to 10,000 persons should sample within 90 days of adoption and water systems serving less than 3,300 persons must begin sampling within 6 months of adoption.

In addition, New York State offers programs to support public water systems with infrastructure investments including but not limited to treatment and development/connection to alternate sources of water. Programs include the Drinking

Water State Revolving Fund which provides market rate, low to no interest loans and grants available to many municipally and privately-owned public water systems based on need and financial hardship. In addition, the New York State Clean Water Infrastructure Act of 2017 invests \$2.5 billion in clean and drinking water infrastructure projects and water quality protection across the State. It provides funding to the New York State Water Infrastructure Improvement Act of 2017 (WIIA) for grants to assist municipalities with water quality infrastructure. A separate \$200 million has been provided to support grants for drinking water projects that will address emerging contaminants such as PFOA, PFOS or 1,4-dioxane.

Small Business and Local Government Participation:

Small business and local governments were not specifically consulted on this proposal, however the MCLs set forth in this proposed rule were recommendations from the Drinking Water Quality Council (DWQC) which met numerous times in a public forum and were also recorded. The recordings are publicly available on the Department's website. During each DWQC meeting, members of the public were allowed to comment, and comments were provided to the Department outside of the meetings. Based on the information available it is not possible to determine the number of small businesses that participated during the meetings or provided comments, but from sign in sheets at the meetings some businesses did participate in the meetings. All comments provided by the public were made available to the DWQC for their consideration.

RURAL AREA FLEXABILITY ANALYSIS

Types and Estimated Numbers of Rural Areas:

These regulations apply to rural areas of the state, where approximately 6,400 small public water systems are located, in the same manner as the rest of the state.

Reporting, Record keeping and Other Compliance Requirements

Reporting and Recordkeeping:

The obligations imposed on rural area public water systems are the same as for all owners or operators of public water systems. The regulations require additional monitoring, reporting, recordkeeping and public notification requirements for three additional contaminants, PFOA, PFOS and 1,4-dioxane. These requirements will increase if MCLs are exceeded and/or treatment is required.

Professional Services:

Like all public water systems, rural area public water systems impacted by the amended regulations will require the services of a laboratory to analyze samples for PFOA, PFOS and 1,4-dioxane. The laboratory must be approved by the Department under its Environmental Laboratory Approval Program (ELAP). Sufficient laboratory capability and capacity is anticipated to be available to process the initial staggered testing demands and future testing. If an MCL is exceeded, a licensed professional will be required to design changes to the public water system to meet the MCL.

Compliance Costs:

Rural area public water systems will incur the same costs as other regulated parties. Costs will include initial monitoring, continued routine monitoring, and treatment in the event of a MCL exceedance for PFOS, PFOA and 1,4-dioxane. There are approximately 7,200 privately-owned water systems. Of these, an estimated 2,100 systems serve residential suburban areas, manufactured housing communities and apartment buildings, residential and non-residential health care facilities, industrial and commercial buildings, private schools and colleges, and other facilities. The remaining 5,100 privately-owned systems, such as those at restaurants, motels and campsites, serve transient populations.

Monitoring and treatment costs for rural area public water systems is dependent upon the system size, the number of affected entry points/sources and the concentration of each contaminant. The exact costs for monitoring and treatment of PFOS, PFOA and 1,4-dioxane for public water systems, including rural area public water systems, cannot be determined due to several variables. The cost for a single PFOA/PFOS analysis is between \$200-\$300 per sample. The cost of a single 1,4-dioxane analysis is between \$100-\$250. For small systems serving less than 3,300 persons, capital and annual maintenance costs are estimated to be approximately \$400,000 and \$25,000, respectively. For medium systems (serving 3,300 or more persons but less than 10,000 persons), capital and annual maintenance costs are estimated to be approximately \$2,400,000 and \$125,000, respectively. For large systems (serving 10,000 persons or more), capital and annual maintenance costs are estimated to be approximately \$15,000,000 and \$725,000, respectively.

It is estimated that eighty-nine (89) public water *facilities*, (a single public water system may be comprised of multiple public water facilities), will have a detection of 1,4-dioxane above the MCL of 0.0010 mg/L. The average cost of treatment for 1,4-dioxane is estimated to be \$3,570,000 per system, with an estimated average annual operation and maintenance cost of approximately \$150,000 per system.

Economic and Technological Feasibility:

These regulations are economically and technologically feasible for rural area public water systems. Analytical methods exist for accurate sample analysis to detect PFOA, PFOS and 1,4-dioxane. There are also technologically feasible treatment solutions for all three contaminants. Treatment may present a greater challenge to smaller systems that typically have less resources including financial and technical expertise than larger systems.

Minimizing Adverse Economic Impact on Rural Areas:

The Department has included several provisions that minimize the impacts on regulated parties. Previous testing conducted using an ELAP approved method and laboratory may satisfy some or all of the initial monitoring requirements at the Department's discretion, or the local health department's discretion in consultation with the Department; sampling frequency will decrease after the first year if a contaminant (or the contaminants) is/are not detected at a public water system; the start of initial sampling is proposed to be staggered, requiring large systems to test first (within 60 days of adoption) and providing more time for smaller systems such that water systems serving between 3,300 to 10,000

persons should sample within 90 days of adoption and water systems serving less than 3,300 persons must begin sampling within 6 months of adoption.

In addition, New York State offers programs to support public water systems with infrastructure investments including but not limited to treatment and development/connection to alternate sources of water. Programs include the Drinking Water State Revolving Fund which provides market rate, low to no interest loans and grants available to many municipally and privately-owned public water systems based on need and financial hardship. In addition, the New York State Clean Water Infrastructure Act of 2017 invests \$2.5 billion in clean and drinking water infrastructure projects and water quality protection across the State. It provides funding to the New York State Water Infrastructure Improvement Act of 2017 (WIIA) for grants to assist municipalities with water quality infrastructure. A separate \$200 million has been provided to support grants for drinking water projects that will address emerging contaminants such as PFOA, PFOS or 1,4-dioxane.

Rural Area Participation:

Rural area stakeholders were not specifically consulted on this proposal, however the MCLs set forth in this proposed rule were recommendations from the Drinking Water Quality Council (DWQC) which met numerous times in a public forum and were also recorded. The membership of the DWQC included members from rural areas. The recordings are publicly available on the Department's web-site. During each DWQC meeting, members of the public could comment, and comments were provided to the

Department outside of the meetings. Based on the information available it is not possible to determine the exact number of rural stakeholders that participated during the meetings or provided comments, but from sign in sheets at the meetings rural communities attended DWQC meetings. All comments provided by the public were made available to the DWQC for their consideration.

JOB IMPACT STATEMENT

Nature of the Impact:

The Department expects there to be a positive impact on jobs or employment opportunities. A subset of public water system owners will likely hire firms or individuals to assist with regulatory compliance. Public water systems impacted by this amendment will require the professional services of a certified or approved laboratory to perform the analyses for PFOA, PFOS and 1,4-dioxane, which may create a need for additional laboratory capability and capacity. Additionally, a subset of owners will require the services of a licensed professional engineer to design facilities to meet the MCLs through treatment, or to access an alternate source.

Categories and Numbers Affected:

The Department anticipates no negative impact on jobs or employment opportunities as a result of the proposed regulations.

Regions of Adverse Impact:

The Department anticipates no negative impact on jobs or employment opportunities in any particular region of the state.

Minimizing Adverse Impact:

Not applicable.

SUMMARY OF ASSESSMENT OF PUBLIC COMMENT

The New York State Department of Health (Department) received over 5,000 comments from public water suppliers, local health departments, chemical manufacturers, local and State elected officials, environmental advocacy groups, the New York Section of the American Water Works Association (AWWA), the New York Association of State and County Health Officials (NYSACHO) and members of the public, on the proposed rulemaking amending Subpart 5-1 of Title 10 of the New York State Codes, Rules and Regulations (NYCRR).

A large number of comments requested a lowering of the proposed PFOA and PFOS maximum contaminant levels (MCLs) to less than 2 parts per trillion (ppt) combined for PFOA and PFOS. In addition, these commenters requested that the MCL for 1,4-dioxane be lowered to 0.3 or 0.35 parts per billion (ppb). Additional commenters questioned the science used to develop the MCLs. Several commenters requested that the Department provide up to five years for public water systems to comply with all MCLs or a phased in approach.

Based on the comments received, the Department has made revisions to the proposed rulemaking and will issue a notice of revised rulemaking.

ASSESSMENT OF PUBLIC COMMENT

The New York State Department of Health (Department) received more than 5,000 comments from public water suppliers, local health departments, chemical manufacturers, local and State elected officials, environmental advocacy groups, the New York Section of the American Water Works Association (AWWA), the New York Association of State and County Health Officials (NYSACHO) and members of the public, on the proposed rulemaking amending Subpart 5-1 of Title 10 of the New York State Codes, Rules and Regulations (NYCRR). These comments and the Department's responses are summarized below.

Comment: Commenters requested a combined Maximum Contamination Level (MCL) of <2 parts per trillion (ppt) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA).

Response: The proposed MCL of 10 ppt provides a strong margin of protection against adverse health effects and a large margin of protection for lifetime exposure through drinking water for the general population. Additionally, the approved analytical method for PFOA and PFOS has a detection limit of 2 ppt. Therefore, it would not be technically feasible to set an MCL below the method detection limit. Furthermore, the Department's proposed MCL is consistent with the Drinking Water Quality Council's (DWQC) proposed MCL recommendation. No changes were made to the proposed regulation in response to this comment.

Comment: Commenters requested an MCL of 0.3 parts per billion (ppb) or 0.35 ppb for 1,4-dioxane.

Response: The proposed MCL of 1 ppb provides a strong margin of protection against adverse health effects and a sufficient margin of protection for lifetime exposure through drinking water for the general population. The Department's proposed MCL is consistent with the Drinking Water Quality Council's proposed MCL recommendation. No changes were made to the proposed regulation in response to this comment.

Comment: Commenters suggested a compliance timeline with at least a four-year phase-in time period for compliance with the proposed MCLs.

Response: The Department recognizes this concern. Therefore, the Department is amending the proposed regulations to allow water systems to request that the State defer actions for determining MCL violations for PFOA, PFOS and 1,4-dioxane, while a water system complies with a corrective action plan. Pursuant to the proposed regulation, a deferral could be issued for up to an initial 24 months with the potential for one additional 12-month period. This provision will not delay implementation but recognizes the complex nature of and time needed to make infrastructure improvements to comply with the MCL.

Comment: Commenters requested the public comment period be extended.

Response: In compliance with the State Administrative Procedure Law, public comments regarding the proposed regulations were accepted during a 60-day public comment

period. Due to changes to the proposed regulations in response to public comments received, the proposed regulations will be published as a revised rule making which will include an additional 45-day comment period.

Comment: Several commenters expressed concern regarding the costs necessary to upgrade public water system to comply with the proposed regulations and requested additional grant funding for treatment and funding to support water systems that must respond to exceedances of the new MCLs. Additionally, commenters noted that funding available through the Water Infrastructure Improvement Act (WIIA) is not available to small privately-owned public water supplies and requested the Department revisit eligibility criteria

Response: Governor Cuomo recently announced \$120 million in funding to support 37 projects to install treatment for emerging contaminants including PFOA, PFOS and 1,4-dioxane. In addition, as part of that announcement, the State is committing to pay 60% of the costs of emerging contaminant projects without regard to a \$3 million cap on project costs. A change in statute would be needed to expand the current eligibility criteria for WIIA grant funds to allow private water systems to apply. No changes were made to the proposed regulation in response to this comment.

Comment: Commenters requested clarification on the applicability of Appendix 5-C to PFOA, PFOA and 1,4-Dioxane, and whether composite samples would be acceptable.

Response: The Department clarified the applicability Appendix 5-C and the applicability of composite sampling by modifying Subpart 5-1 Appendix 5-C.II.B to include PFOA, PFOS and 1,4-dioxane.

Comment: Numerous comments were received requesting all systems or all community water systems begin testing within 60 days of adoption of the MCLs.

Response: The proposed regulation allows for a phased in approach for required monitoring by public water systems based on the size of the population they serve. A staggered approach to initial monitoring will provide additional notice to small public water systems and allow them time to budget for initial testing. In addition, laboratory capacity would be significantly strained if all water systems were required to test within 60 days of adoption. No changes were made to the proposed regulation in response to this comment.

Comment: Numerous commenters requested that the Department regulate other PFAS chemicals at levels consistent with science.

Response: The Department will take this comment under advisement. No changes were made to the proposed regulation in response to this comment.

Comment: Commenters requested that financial support for drinking water fluoridation be discontinued.

Response: This comment is outside the scope of the proposed regulation. No changes were made to the proposed regulation in response to this comment.

Comment: A commenter recommended that the state increase Drinking Water Enhancement Grant funding in the 2020-21 State Fiscal Year, to support expanded local health department responsibilities for administration and oversight activities required as part of these revised drinking water monitoring requirements.

Response: The comment is outside the scope of the proposed rulemaking; however, the Department will take this under advisement. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter noted that because of capacity concerns regarding available materials and financing, the Department should consider a phased-in approach to addressing system improvements, such as starting with systems that are the most critical or have the highest number of detections. This phase-in process should include definitive deadlines in regulation for addressing MCLs.

Response: The proposed regulation includes phased in monitoring requirements which provides needed flexibility for systems to begin monitoring and developing compliance timelines. In addition to staggering initial monitoring, project-specific timetables of compliance will be developed by systems needing to install treatment. This schedule will consider the complexity of the project and time required to acquire and install treatment components. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter noted that other state agencies such as the Public Service Commission and Office of the State Comptroller should be consulted to identify ways to expedite any required administrative processes and actions.

Response: The Department will take this comment under advisement. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter asked if the Department plans to include these new parameters in their SOC/POC/IOC Sampling Program Assistance for small water systems.

Response: The Department is working to incorporate the analysis of PFOA, PFOS and 1,4-dioxane into the current sampling assistance program for small water systems. No changes were made to the proposed regulation in response to this comment.

Comment: Several commenters requested new or revised guidance for local health departments and water suppliers, as well as communications tools be made available prior to the adoption of the proposed regulations.

Response: The Department, will provide guidance to local health departments (LHDs) to assist with implementation of the proposed regulation. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter requested that LHDs and water suppliers receive a current and frequently updated list of all NYS ELAP approved environmental testing labs which have been specifically approved to test for 1,4-dioxane, PFOS, and PFOA.

Response: A listing of all NYS Environmental Laboratory Approval Program (ELAP) approved environmental testing laboratories can be obtained by emailing ELAP at: ELAP@health.ny.gov. No changes were made to the proposed regulation as in response to this comment.

Comment: Several commenters expressed concerns that Department staffing is insufficient to address multiple requests for expedited review of design plans. These commenters inquired if plans are in place to recruit additional staff.

Response: The Department acknowledges the comment and has recently recruited additional engineers to assist in the review of design plans for new treatment installations. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter asked if a public water system must test for all Table 9C chemicals upon adoption of the regulation or if only PFOA, PFOS, and 1,4-dioxane must be tested for.

Response: Upon adoption of the regulation, a public water system is only required to conduct initial monitoring for PFOA, PFOS and 1,4-dioxane unless other contaminants on table 9C are scheduled to be completed. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter asked if monitoring waivers can be issued for PFOA, PFOS and 1,4-Dioxane pursuant to Table 9C, Footnote 7 (a-f).

Response: Due to the widespread use of PFOA, PFOS and 1,4-dioxane in household and personal care products, the use of the contaminant is considered unknown, per Table 9C footnote 7. Table 9C Footnote 7 item (c) has been revised to include PFOA, PFOS and 1,4-dioxane. Monitoring waivers may be considered based on the factors in Footnote 7.

Comment: One commenter expressed concerns that as work progresses on the Catskill Aqueduct, there will be periods of time when water from the New York City system will be unavailable to upstate municipalities, and they will be required to use their secondary supplies. Uncertainty as to whether these water sources will comply with the proposed regulations could delay major work on the aqueducts.

Response: The Department acknowledges the comment and will take it under advisement. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter expressed concerns that byproducts from Advance Oxidation Process (AOP) are not well understood and suggests the Department carefully evaluate this treatment.

Response: The potential for byproduct production is assessed through initial pilot testing of each AOP system. In addition, the Department has been working with the University at Stony Brook's Center for Clean Water Technologies, to better understand AOP, which resulted in our knowledge of treatment byproducts increasing over the last several years. No changes were made to the proposed regulation in response to this comment.

Comment: Several commenters expressed concern that misinformation was presented to the DWQC because water suppliers will need to address possible treatment for wells that are more than one-half the MCL.

Response: The proposed MCLs do not impose any requirements on water supplies that have sample results of one-half the MCL. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter stated that there is no justification for the Department's estimate that 21% of all public water systems will have levels of PFOA or PFOS above the proposed MCL.

Response: From 2015 through 2018, the Department coordinated targeted sampling of 278 public water systems for PFOA and PFOS. As shown in Figures 1A and 1B of the regulatory impact statement, there were a total of 58 public water systems from which water samples contained concentrations of either PFOS or PFOA greater than 0.000010 mg/l (10 parts per trillion). These approximately 21% (58/278) of water systems represent the available PFOS and PFOA data with which the Department used to estimate the number of public water systems that could have levels of PFOA or PFOS greater than the proposed MCLs. No changes were made to the proposed regulation in response to this comment.

Comment: A commenter stated that the occurrence data for 1,4-Dioxane is deficient because it only represents Unregulated Contaminant Monitoring Rule 3(UCMR3) data

for systems, only reflects systems serving >10,000 people, and is based on entry points which does not guarantee that it reflects individual well sources.

Response: The Department acknowledges that 1,4-dioxane occurrence will be better understood as a result of testing requirements under the proposed regulation. However, the occurrence of 1,4-dioxane from the UCMR3 data are sufficient to document the need for the establishment of an MCL for 1,4-dioxane. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter stated that the proposed regulation did not assess possible alternative approaches to regulating PFOA, PFOS and 1,4 Dioxane using MCLs, and argued that nothing precludes statewide monitoring for these and other unregulated contaminants to proceed in the absence of establishment of a formal regulation.

Response: Promulgation of an MCL gives the Department clear regulatory authority to require action or treatment above an established level, which is a critical component of public health protection. Monitoring and collecting occurrence data is important but that alone does not preclude the need to establish regulatory limits through the establishment of MCLs. No changes were made to the proposed regulation in response to this comment.

Comment: A commenter noted that regulatory alternative approaches to drinking water unregulated contaminant risk reduction have successfully been utilized in the past in NYS and in other jurisdictions. For example, wells have been voluntarily removed from service based on guidance levels provided by the Department. The commenter also

referenced Notification Levels required by the State of California for PFOA, PFOS and 1,4-dioxane.

Response: The Department is aware of other State’s responses to unregulated contaminants. However, as stated previously, the establishment of MCLs provides a clear regulatory framework and authority for requiring action by public water systems when an MCL is exceeded. No changes were made to the proposed regulation in response to this comment.

Comment: A commenter noted inconsistent use of certain terminology in the proposed regulation. For example, “method detection **limit**” and “method detection **levels**” appeared to be used interchangeably.

Response: This comment is acknowledged, and appropriate changes have been incorporated into the revised rulemaking.

Comment: Commenters requested that blending of water supplies to obtain water with concentrations below MCLs should be considered in the proposed regulations.

Response: The regulations do not outline specific compliance strategies and do not prohibit blending. Water suppliers can propose, and the State may approve, any corrective action that is determined to be appropriate to achieve compliance with the MCL. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter stated that some public water systems have begun to set a precedent by shutting off supplies due to positive detections of PFOA and PFAS when

concentrations are below the proposed MCLs. This has the potential to place an undue burden on secondary water suppliers to provide PFOS and PFOA-free water at the expense of existing water supply operations and critical infrastructure projects.

Response: The Department will take this comment under advisement but notes corrective action, on the part of the water supplier, is only required at levels above the MCL. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter stated that the Regulatory Impact Statement (RIS) fails to recognize the potential impact of the regulations on public water systems that may be unable to afford the improvements, and the impact on the public water system customers who may be exposed to drinking water that does not meet the proposed MCLs.

Response: The RIS presented the estimated the cost of compliance by public water systems. It stated that public water systems will likely make rate adjustments to accommodate these additional capital and operational costs. No changes were made to the proposed regulation in response to this comment.

Comment: A commenter suggested the proposed regulations do not apply to the estimated 800,000 private water supply wells in New York State, but costs will be incurred by the NYSDEC as the lead agency for investigating, remediating and monitoring of contaminated sites as the MCLs will be used as guidance to determine whether a private well is contaminated by PFOA, PFOS or 1,4-dioxane.

Response: The proposed regulations only apply to public water supplies, and not individual wells, and the potential costs incurred by NYSDEC for investigating,

remediating and monitoring contaminated sites are outside the scope of this rule making. No changes were made to the proposed regulation in response to this comment.

Comment: A commenter stated that a public water supplier that cannot meet the proposed 1,4-dioxane MCL due to the unavailability of well-established treatment systems will be forced to implement water use restrictions and reduce operating pressures, which may increase the vulnerability of the water systems to other types of contaminants, impact the economic viability of businesses and reduce taxable revenue.

Response: Advanced Oxidation Process (AOP) is effective at treating 1,4-dioxane in drinking water. The Best Available Technologies table in Section 5-1.91(d) was amended to recognize AOP as an oxidation process for achieving compliance with the MCL for 1,4-dioxane. In addition, there is no regulatory requirement for water systems to implement water use restrictions with the exceedance of the MCL. No changes were made to the proposed regulation in response to this comment.

Comment: Public water systems should investigate alternative technologies for the removal of 1,4-dioxane that may be more effective for 1,4-dioxane removal but, according to their consultants, are constrained from doing so because of the anticipated adoption of the 1,4-dioxane MCL that is proposed to be immediately effective upon adoption of the new MCL.

Response: The Department is amending the proposed regulation to allow water systems to request a deferral while they pursue an agreed upon corrective action plan that includes

an evaluation of the most effective treatment system and associated timetable. A deferral may be issued for up to 24 months with the potential for one additional 12-month period.

Comment: One commenter stated that the Department should identify the procedures that public water suppliers should follow to protect the public from exposure to levels of 1,4-dioxane and PFOA/PFOS that exceed the proposed MCLs. Tier II Public notification is required whenever there is a violation of an Organic Chemical MCL, however guidance on measures to prevent such violations is needed. This guidance should include removing contaminated wells from service, imposing a ban on all non-essential water use including lawn irrigation, opening interconnections with adjacent water systems, distribution of bottled water and other actions recommended by the Department.

Response: The proposed regulation will require Tier II public notification if a public water supplier has an MCL violation of the PFOA, PFOS or 1,4-dioxane standard. In addition, the State must be notified and provided with a plan on what the system is doing to correct the violation. Guidance will be provided based on the specific operational situation and level of exceedance. A time table to return to compliance will be approved by the State. No changes were made to the proposed regulation in response to this comment. This comment is outside of the scope of the proposed regulation. No changes were made to the proposed regulation as a result of this comment.

Comment: Several commenters requested that the Department address the problem of the 1,4-dioxane, PFOA and PFOS contamination of unregulated private wells that are

used for drinking, that may not be tested for compliance with the MCLs unless a funding mechanism and testing program is developed and supported by the State.

Response: The Department acknowledges and will take this comment under consideration; however, private wells are outside the scope of the proposed regulation which is only applicable to public water supplies. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter stated that the RIS should consider the subsequent workload impacts to industry stakeholders needed to implement monitoring and treatment: laboratories to manage the volume and reporting of samples; procurement of consultant services to conduct bench and/or pilot scale studies to develop treatment design criteria, detailed treatment design and preparation of permit applications, development of construction bid documents, procurement of construction contracts, commercial availability of appropriate treatment equipment and media, construction and startup activities, and the associated Health Department and local Planning agency permitting and review processes.

Response: The Department has and will continue to collaborate with industry stakeholders on the availability of both capital and technical resources. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter noted that if a detection of PFOA, PFOS or 1,4-dioxane requires treatment modifications, the MCLs proposed may become the limiting contaminant to design or redesign treatment processes. Providing treatment will be more

complicated than simply adding an additional treatment step, as it will likely require changes to disinfection strategy, additional pumping and electrical requirements, storage, land use, stormwater management and residuals management.

Response: The complexities of treating for these emerging contaminants have been taken into account and are reflected in the range of cost estimates provided, which also accounts for system specific limitations that may impact the overall cost of the project. The treatment process for 1,4-dioxane will necessitate the inclusion of a carbon treatment step, and carbon treatment is a treatment technology for both PFOA and PFOS. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter noted that if a treatment process upgrade is required for a public water system to comply with the proposed MCLs, the design process must take into consideration simultaneous compliance with other regulatory and related requirements to ensure that the full life-cycle cost investments are optimized to minimize the cost to the public water systems and the subsequent impact to water ratepayers.

Response: The Department acknowledges this comment, but it is outside the scope of the proposed regulation. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter noted that public water systems are currently assessing their risks and system resiliency in accordance with the 2018 America's Water Infrastructure Act (AWIA). The need to install new treatment will impact this analysis, as the additional treatment units will require redundancy and impact capacity needs for emergency power.

The commenter noted that in certain cases it may not be cost effective to add treatment to small groundwater sources, leading to abandonment of these sources and a reduction in overall supply capacity and state-wide drought resiliency.

Response: The Department acknowledges this comment. No changes were made to the proposed regulation in response to this comment.

Comment: A commenter stated that the proposed regulation does not address the management of residuals from water and wastewater processing and landfill leachate that may contain PFOA and PFOS, and argued that this will become an issue for public water systems both as a potential source of water contamination and as a by-product of providing treatment for removal of these compounds from drinking water.

Response: This comment is outside the scope of the proposed regulation. No changes were made to the proposed regulation in response to this comment.

Comment: Several commenters questioned the economic impact and financial feasibility for small water systems and businesses complying with the proposed MCL regulations. In addition to the capital costs associated with installing treatment there is ongoing monitoring, operation and maintenance costs. Commenters stated that privately owned public water systems are not eligible for WIAA or Intermunicipal Water Infrastructure Grants (IMG) grants making the regulations even less economically and technologically feasible for small businesses.

Response: The Department addressed the estimated costs to small water systems and privately-owned public water systems in the RIS. Various funding mechanisms to address

compliance issues are available, either through State programs, market-rate financing, or business practices. Any limitations to accessing WIIA or IMG funding are specified in statute and would require a statutory change. No changes were made to the proposed regulation in response to this comment.

Comment: Commenters objected to the lack of detailed scientific information to support a maximum contaminant level of 10 ppt for PFOA and PFOS.

Response: The Department strongly disagrees with these comments. The peer-reviewed scientific data used to support the proposed MCLs for PFOA, PFOS and 1,4-dioxane was current and representative. Furthermore, the Department publicly presented this peer reviewed scientific literature to the Drinking Water Quality Council at several meetings in 2017 and 2018 to assist in their deliberations, and also made these presentations publicly available on the Department web site. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter objected to the use of the linear low-dose mode of action assumption as the basis of the proposed MCL for 1,4-dioxane. The commenter stated that their interpretation of the scientific data is that the mode of action should be considered a threshold process, and therefore, the resulting MCL should be much higher.

Response: The comment focuses on whether the estimate of cancer potency for 1,4-dioxane should assume that the chemical causes cancer by a linear low dose mode of action or by a threshold mode of action. The choice of a linear low dose approach is the US Environmental Protection Agency (EPA) default recommendation when data on

mode-of-action are unavailable, or when a mode-of-action analysis provides evidence of linearity at low doses or does not provide unequivocal evidence of nonlinearity at low doses, (US EPA 2005). The Department may consider new information on the carcinogenic mode of action for 1,4-dioxane as it becomes available in the future. No changes were made to the proposed regulation in response to this comment.

Comment: A commenter stated that the human exposure argument for regulating 1,4-dioxane is weaker than that for PFOS and PFOA, and that the Department did not consider the relative significance of the proposed MCL compared to other sources of significant exposures.

Response: Based on public drinking water sampling data, the DWQC and the Department determined that 1,4-dioxane, PFOA and PFOS have had impacts on certain water systems resulting in past and current exposure, and that setting drinking water standards for these contaminants presents a meaningful opportunity, relative to other exposures, for mitigating exposure and related health risks. The comment appears to be raising the issue of the relative contribution of 1,4-dioxane exposures from non-drinking water sources (e.g., personal care products) to those from drinking water. For carcinogens, a relative source contribution is typically not factored into derivation of health-based guidelines, following generally accepted risk assessment practice. Any additional 1,4-dioxane exposures from other sources could potentially add to the total risk, and therefore, the fact that additional exposure sources or pathways may exist further supports setting the maximum contaminant level as close to the de minimis risk level as possible. With respect to the proposed MCLs for PFOA and PFOS, the health

considerations are based on noncancer health risks, and the derivation of health-based values employs a relative source contribution, again, consistent with generally accepted risk assessment practice. The use of the relative source contribution in the derivation of potential health-based values for PFOA and PFOS acknowledges the importance of consideration of non-drinking water exposures to the chemicals. No changes were made to the proposed regulation in response to this comment.

Comment: One commenter stated that the proposed MCL of 1 ppb for 1, 4-dioxane is at a level that represents a 1 in 800,000 cancer risk based on daily consumption of water over a 70-year lifetime. The commenter argued that proposing limits based on health risk levels that are extremely low sets a dangerous precedent for future regulations, is out of balance with existing regulations (e.g., disinfection by-products cancer risk), and undermines the public confidence in public water supplies. The commenter also suggested that the Department consider establishing both MCLs and MCL goals (MCLG) for the compounds in this proposed action.

Response: The proposed MCL of 1 ppb for 1,4-dioxane represents a lifetime increased cancer risk (based on the US EPA estimate of potency) of about 1 in 350,000 (about 3 in one million), not 1 in 800,000 as asserted in the comment. Current US EPA MCLs for several contaminants (e.g., tetrachloroethene, benzene, dichloromethane, di[2-ethylhexyl]phthalate, ethylene dibromide, polychlorinated biphenyls) are set below, at, or slightly above the risk level of the proposed 1,4-dioxane standard, and the New York State standard for methyl-tert-butyl ether is set at the one in one million cancer risk level. Further, a comparison of the standards for disinfection byproducts and 1,4-dioxane is not

relevant because the cancer risk level for disinfection byproducts is considered against the public health benefit of ridding water of pathogens, while there is no public health benefit related to the presence of 1,4-dioxane in drinking water. Finally, for carcinogenic substances such as 1,4-dioxane, the US EPA policy would set the MCLG at zero, and base the MCL as close as possible to the MCLG taking into consideration detection limits and/or feasibility. The proposed standard for 1,4-dioxane is consistent with this practice and establishing an MCLG would not affect the proposed standard. No changes were made to the proposed regulation in response to this comment.