ILLINOIS POLLUTION CONTROL BOARD
May 3, 2007

IN THE MATTER OF:	)	
	)	
SDWA UPDATE, USEPA AMENDMENTS	)	R07-2
(January 1, 2006 though June 30, 2006)	)	(Identical-in-Substance
	)	Rulemaking - Public Water Supply)
SDWA UPDATE, USEPA AMENDMENTS	)	R07-11
(July 1, 2006 though December 31, 2006)	)	(Identical-in-Substance
	)	Rulemaking - Public Water Supply)
		(Consolidated)

Proposed Rule. Proposal for Public Comment.

ORDER OF THE BOARD (by T.E. Johnson):

The Board today proposes amendments to the Illinois regulations that are "identical in substance" to drinking water regulations adopted by the United States Environmental Protection Agency (USEPA). The USEPA rules implement Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the federal Safe Drinking Water Act (SDWA) (42 U.S.C. §§ 300g-1(a), 300g-3(c), 300g-6(a), and 300j-4(a) (2002)).

The R07-2 docket includes federal SDWA amendments that USEPA adopted in the periods January 1, 2006 though June 30, 2006, and the R07-11 docket includes federal SDWA amendments that USEPA adopted in the periods July 1, 2006 though December 31, 2006. The amendments incorporate into the Illinois regulations three related, significant new federal rules: the Stage 2 Disinfectants and Disinfection Byproducts Rule, the Long Term 2 Enhanced Surface Water Treatment Rule, and the Groundwater Rule.

Sections 7.2 and 17.5 of the Environmental Protection Act (Act) (415 ILCS 5/7.2 and 17.5 (2004)) provide for quick adoption by the Board of regulations that are identical in substance to federal regulations that USEPA adopts to implement Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the federal SDWA. Section 17.5 also provides that Title VII of the Act and Section 5 of the Administrative Procedure Act (APA) (5 ILCS 100/5-35 and 5-40 (2004)) do not apply to the Board's adoption of identical-in-substance regulations. The federal SDWA regulations are found at 40 C.F.R. 141 through 143.

This order is supported by an opinion that the Board also adopts today. The Board will cause the proposed amendments to be published in the *Illinois Register* and will hold the docket open to receive public comments for 45 days after the date of publication. The Board will then adopt and file the final rules, taking into account the public comments received. The rules will be adopted and filed no later than August 6, 2007, pursuant to the extension of the deadline adopted by the Board on April 19, 2007 pursuant to Section 7.2(b) of the Act (415 ILCS 5/7.2(b) (2004)).

The Clerk is directed to cause the filing of the following proposed amendments with the Office of the Secretary of State for their publication in the *Illinois Register*:

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE F: PUBLIC WATER SUPPLIES
CHAPTER I: POLLUTION CONTROL BOARD

PART 611
PRIMARY DRINKING WATER STANDARDS

SUBPART A: GENERAL

Section
611.100 Purpose, Scope, and Applicability
611.101 Definitions
611.102 Incorporations by Reference
611.103 Severability
611.105 Electronic Reporting
611.107 Agency Inspection of PWS Facilities
611.108 Delegation to Local Government
611.109 Enforcement
611.110 Special Exception Permits
611.111 Relief Equivalent to SDWA Section 1415(a) Variances
611.112 Relief Equivalent to SDWA Section 1416 Exemptions
611.113 Alternative Treatment Techniques
611.114 Siting Requirements
611.115 Source Water Quantity
611.120 Effective Dates
611.121 Maximum Contaminant Levels and Finished Water Quality
611.125 Fluoridation Requirement
611.126 Prohibition on Use of Lead
611.130 Special Requirements for Certain Variances and Adjusted Standards
611.131 Relief Equivalent to SDWA Section 1415(e) Small System Variance
611.160 Composite Correction Program
611.161 Case-by-Case Reduced Subpart Y Monitoring for Wholesale and Consecutive Systems

SUBPART B: FILTRATION AND DISINFECTION

Section
611.201 Requiring a Demonstration
611.202 Procedures for Agency Determinations
611.211 Filtration Required
611.212 Groundwater under Direct Influence of Surface Water
611.213 No Method of HPC Analysis
611.220 General Requirements
611.230 Filtration Effective Dates

SUBPART C: USE OF NON-CENTRALIZED TREATMENT DEVICES

SUBPART D: TREATMENT TECHNIQUES

SUBPART F: MAXIMUM CONTAMINANT LEVELS (MCLs) AND MAXIMUM RESIDUAL DISINFECTANT LEVELS (MRDLs)

SUBPART G: LEAD AND COPPER

SUBPART I: DISINFECTANT RESIDUALS, DISINFECTION BYPRODUCTS, AND DISINFECTION BYPRODUCT PRECURSORS

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

SUBPART M: TURBIDITY MONITORING AND ANALYTICAL REQUIREMENTS

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section
611.720 Analytical Methods
611.731 Gross Alpha
611.732 Beta Particle and Photon Radioactivity
611.733 General Monitoring and Compliance Requirements

SUBPART R: ENHANCED FILTRATION AND DISINFECTION: SYSTEMS THAT SERVE 10,000 OR MORE PEOPLE

Section
611.740 General Requirements
611.741 Standards for Avoiding Filtration
611.742 Disinfection Profiling and Benchmarking
611.743 Filtration
611.744 Filtration Sampling Requirements
611.745 Reporting and Recordkeeping Requirements

SUBPART S: GROUNDWATER RULE

Section
611.800 General Requirements and Applicability
611.801 Sanitary Surveys for GWS Suppliers
611.802 Groundwater Source Microbial Monitoring and Analytical Methods
611.803 Treatment Technique Requirements for GWS Suppliers
611.804 Treatment Technique Violations for GWS Suppliers
611.805 Reporting and Recordkeeping for GWS Suppliers

SUBPART T: REPORTING AND RECORDKEEPING

Section
611.830 Applicability
611.831 Monthly Operating Report
611.832 Notice by Agency (Repealed)
611.833 Cross Connection Reporting
611.840 Reporting
611.851 Reporting MCL, MRDL, and other Violations (Repealed)
611.852 Reporting other Violations (Repealed)
611.853 Notice to New Billing Units (Repealed)
611.854 General Content of Public Notice (Repealed)
611.855 Mandatory Health Effects Language (Repealed)
611.856 Fluoride Notice (Repealed)
611.858 Fluoride Secondary Standard (Repealed)
611.860 Record Maintenance
611.870 List of 36 Contaminants (Repealed)

SUBPART U: CONSUMER CONFIDENCE REPORTS

Section
611.881 Purpose and Applicability
611.882 Compliance Dates
611.883 Content of the Reports
611.884 Required Additional Health Information
611.885 Report Delivery and Recordkeeping

SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

Section
611.901 General Public Notification Requirements
611.902 Tier 1 Public Notice: Form, Manner, and Frequency of Notice
611.903 Tier 2 Public Notice: Form, Manner, and Frequency of Notice
611.904 Tier 3 Public Notice: Form, Manner, and Frequency of Notice
611.905 Content of the Public Notice
611.906 Notice to New Billing Units or New Customers
611.907 Special Notice of the Availability of Unregulated Contaminant Monitoring Results
611.908 Special Notice for Exceedence of the Fluoride Secondary Standard
611.909 Special Notice for Nitrate Exceedences above the MCL by a Non-Community Water System
611.910 Notice by the Agency on Behalf of a PWS
611.911 Special Notice for Cryptosporidium

SUBPART W: INITIAL DISTRIBUTION SYSTEM EVALUATIONS

Section
611.920 General Requirements
611.921 Standard Monitoring
611.922 System-Specific Studies
611.923 40/30 Certification
611.924 Very Small System Waivers
611.925 Subpart Y Compliance Monitoring Location Recommendations

SUBPART X: ENHANCED FILTRATION AND DISINFECTION—SYSTEMS SERVING FEWER THAN 10,000 PEOPLE

Section
611.950 General Requirements
611.951 Finished Water Reservoirs
611.952 Additional Watershed Control Requirements for Unfiltered Systems
611.953 Disinfection Profile
611.954 Disinfection Benchmark
611.955 Combined Filter Effluent Turbidity Limits
611.956 Individual Filter Turbidity Requirements
611.957 Reporting and Recordkeeping Requirements

SUBPART Y—STAGE 2 DISINFECTION BYPRODUCTS REQUIREMENTS

SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM

AUTHORITY: Implementing Sections 7.2, 17, and 17.5 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 17, 17.5, and 27].

SOURCE: Adopted in R88-26 at 14 Ill. Reg. 16517, effective September 20, 1990; amended in R90-21 at 14 Ill. Reg. 20448, effective December 11, 1990; amended in R90-13 at 15 Ill. Reg. 1562, effective January 22, 1991; amended in R91-3 at 16 Ill. Reg. 19010, effective December 1, 1992; amended in R92-3 at 17 Ill. Reg. 7796, effective May 18, 1993; amended in R93-1 at 17 Ill. Reg. 12650, effective July 23, 1993; amended in R94-4 at 18 Ill. Reg. 12291, effective July 28, 1994; amended in R94-23 at 19 Ill. Reg. 8613, effective June 20, 1995; amended in R95-17 at 20 Ill. Reg.

14493, effective October 22, 1996; amended in R98-2 at 22 Ill. Reg. 5020, effective March 5, 1998; amended in R99-6 at 23 Ill. Reg. 2756, effective February 17, 1999; amended in R99-12 at 23 Ill. Reg. 10348, effective August 11, 1999; amended in R00-8 at 23 Ill. Reg. 14715, effective December 8, 1999; amended in R00-10 at 24 Ill. Reg. 14226, effective September 11, 2000; amended in R01-7 at 25 Ill. Reg. 1329, effective January 11, 2001; amended in R01-20 at 25 Ill. Reg. 13611, effective October 9, 2001; amended in R02-5 at 26 Ill. Reg. 3522, effective February 22, 2002; amended in R03-4 at 27 Ill. Reg. 1183, effective January 10, 2003; amended in R03-15 at 27 Ill. Reg. 16447, effective October 10, 2003; amended in R04-3 at 28 Ill. Reg. 5269, effective March 10, 2004; amended in R04-13 at 28 Ill. Reg. 12666, effective August 26, 2004; amended in R05-6 at 29 Ill. Reg. 2287, effective January 28, 2005; amended in R06-15 at 30 Ill. Reg. 17004, effective October 13, 2006; amended in R07-2/R07-11 at 31 Ill. Reg. _____, effective _____.

SUBPART A: GENERAL

Section 611.101 Definitions

As used in this Part, the following terms have the given meanings:

"Act" means the Environmental Protection Act [415 ILCS 5].

"Agency" means the Illinois Environmental Protection Agency.
BOARD NOTE: The Department of Public Health (Public Health or DPH) regulates non-community water supplies ("non-CWSs," including non-transient, non-community water supplies ("NTNCWSs") and transient non-community water supplies ("transient non-CWSs")). For the purposes of regulation of supplies by Public Health by reference to this Part, "Agency" will mean the Department of Public Health.

~~"Ai" means "inactivation ratio."~~

"Approved source of bottled water," for the purposes of Section 611.130(d)(4), means a source of water and the water therefrom, whether it be from a spring, artesian well, drilled well, municipal water supply, or any other source, that has been inspected and the water sampled, analyzed, and found to be a safe and sanitary quality according to applicable laws and regulations of State and local government agencies having jurisdiction, as evidenced by the presence in the plant of current certificates or notations of approval from each government agency or agencies having jurisdiction over the source, the water it bottles, and the distribution of the water in commerce.
BOARD NOTE: Derived from 40 CFR 142.62(g)(2) and 21 CFR 129.3(a) ~~(2003)~~ (2006). The Board cannot compile an exhaustive listing of all federal, State, and local laws to which bottled water and bottling water may be subjected. However, the statutes and regulations of which the Board is aware are the following: the Illinois Food, Drug and Cosmetic Act [410 ILCS 620], the Bottled Water Act [815 ILCS 310], the DPH Water Well Construction Code (77 Ill. Adm. Code 920), the DPH

Water Well Pump Installation Code (77 Ill. Adm. Code 925), the federal bottled water quality standards (21 CFR 103.35), the federal drinking water processing and bottling standards (21 CFR 129), the federal Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Human Food (21 CFR 110), the federal Fair Packaging and Labeling Act (15 USC 1451 et seq.), and the federal Fair Packaging and Labeling regulations (21 CFR 201).

"Bag filters" means pressure-driven separation devices that remove particulate matter larger than one micrometer using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to outside.

"Bank filtration" means a water treatment process that uses a well to recover surface water that has naturally infiltrated into groundwater through a river bed or banks. Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other wells.

"Best available technology" or "BAT" means the best technology, treatment techniques, or other means that USEPA has found are available for the contaminant in question. BAT is specified in Subpart F of this Part.

"Board" means the Illinois Pollution Control Board.

"Cartridge filters" means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.

"CAS No." means "Chemical Abstracts Services Number."

"CT" or "CT_{calc}" is the product of "residual disinfectant concentration" (RDC or C) in mg/ℓ determined before or at the first customer, and the corresponding "disinfectant contact time" (T) in minutes. If a supplier applies disinfectants at more than one point prior to the first customer, it must determine the CT of each disinfectant sequence before or at the first customer to determine the total percent inactivation or "total inactivation ratio." In determining the total inactivation ratio, the supplier must determine the RDC of each disinfection sequence and corresponding contact time before any subsequent disinfection application points. (See "$CT_{99.9}$.")

"$CT_{99.9}$" is the CT value required for 99.9 percent (3-log) inactivation of Giardia lamblia cysts. $CT_{99.9}$ for a variety of disinfectants and conditions appear in Tables 1.1-1.6, 2.1 and 3.1 of Appendix B of this Part. (See "Inactivation Ratio.")
BOARD NOTE: Derived from the definition of "CT" in 40 CFR 141.2 ~~(2003)~~

(2006).

"Coagulation" means a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.

"Combined distribution system" means the interconnected distribution system consisting of the distribution systems of wholesale systems and of the consecutive systems that receive finished water.

"Community water system" or "CWS" means a public water system (PWS) that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.
BOARD NOTE: This definition differs slightly from that of Section 3.05 of the Act.

"Compliance cycle" means the nine-year calendar year cycle during which public water systems (PWSs) must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar cycle began January 1, 1993, and ended December 31, 2001; the second began January 1, 2002, and ends December 31, 2010; the third begins January 1, 2011, and ends December 31, 2019.

"Compliance period" means a three-year calendar year period within a compliance cycle. Each compliance cycle has three three-year compliance periods. Within the first compliance cycle, the first compliance period ran from January 1, 1993 to December 31, 1995; the second from January 1, 1996 to December 31, 1998; the third from January 1, 1999 to December 31, 2001.

"Comprehensive performance evaluation" or "CPE" is a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation, and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements.
BOARD NOTE: The final sentence of the definition of "comprehensive performance evaluation" in 40 CFR 141.2 is codified as Section 611.160(a)(2), since it contains substantive elements that are more appropriately codified in a substantive provision.

"Confluent growth" means a continuous bacterial growth covering the entire filtration area of a membrane filter or a portion thereof, in which bacterial colonies are not discrete.

"Consecutive system" means a public water system that receives some or all of its finished water from one or more wholesale systems. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

"Contaminant" means any physical, chemical, biological, or radiological substance or matter in water.

"Conventional filtration treatment" means a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.

"Diatomaceous earth filtration" means a process resulting in substantial particulate removal in which the following occur:

A precoat cake of diatomaceous earth filter media is deposited on a support membrane (septum); and

While the water is filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

"Direct filtration" means a series of processes including coagulation and filtration but excluding sedimentation resulting in substantial particulate removal.

"Disinfectant" means any oxidant, including but not limited to chlorine, chlorine dioxide, chloramines, and ozone added to water in any part of the treatment or distribution process, that is intended to kill or inactivate pathogenic microorganisms.

"Disinfectant contact time" or "T" means the time in minutes that it takes for water to move from the point of disinfectant application or the previous point of RDC measurement to a point before or at the point where RDC is measured.

Where only one RDC is measured, T is the time in minutes that it takes for water to move from the point of disinfectant application to a point before or at the point where RDC is measured.

Where more than one RDC is measured, T is as follows:

For the first measurement of RDC, the time in minutes that it takes for water to move from the first or only point of disinfectant application to a point before or at the point where the first RDC is measured; and

For subsequent measurements of RDC, the time in minutes that it takes for water to move from the previous RDC measurement point to the RDC measurement point for which the particular T is being calculated.

T in pipelines must be calculated based on "plug flow" by dividing the internal volume of the pipe by the maximum hourly flow rate through that

pipe.

T within mixing basins and storage reservoirs must be determined by tracer studies or an equivalent demonstration.

"Disinfection" means a process that inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

"Disinfection byproduct" or "DBP" means a chemical byproduct that forms when disinfectants used for microbial control react with naturally occurring compounds already present in source water. DBPs include, but are not limited to, bromodichloromethane, bromoform, chloroform, dichloroacetic acid, bromate, chlorite, dibromochloromethane, and certain haloacetic acids.

"Disinfection profile" is a summary of daily Giardia lamblia inactivation through the treatment plant. The procedure for developing a disinfection profile is contained in Section 611.742.

"Distribution system" includes all points downstream of an "entry point" to the point of consumer ownership.

"Domestic or other non-distribution system plumbing problem" means a coliform contamination problem in a PWS with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken.

"Dose equivalent" means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).

"Dual sample set" means a set of two samples collected at the same time and same location, with one sample analyzed for TTHM and the other sample analyzed for HAA5. Dual sample sets are collected for the purposes of conducting an IDSE under Subpart W of this Part and determining compliance with the TTHM and HAA5 MCLs under Subpart Y of this Part.

"Enhanced coagulation" means the addition of sufficient coagulant for improved removal of disinfection byproduct (DBP) precursors by conventional filtration treatment.

"Enhanced softening" means the improved removal of disinfection byproduct (DBP) precursors by precipitative softening.

"Entry point" means a point just downstream of the final treatment operation, but upstream of the first user and upstream of any mixing with other water. If raw water

is used without treatment, the "entry point" is the raw water source. If a PWS receives treated water from another PWS, the "entry point" is a point just downstream of the other PWS, but upstream of the first user on the receiving PWS, and upstream of any mixing with other water.

"Filter profile" is a graphical representation of individual filter performance, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed.

"Filtration" means a process for removing particulate matter from water by passage through porous media.

"Finished water" means water that is introduced into the distribution system of a public water system which is intended for distribution and consumption without further treatment, except that treatment which is necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals, etc.).

"Flocculation" means a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means.

"Flowing stream" means a course of running water flowing in a definite channel.

"40/60 certification" means the certification, submitted by the supplier to the Agency pursuant to Section 611.923, that the supplier had no TTHM or HAA5 monitoring violations, and that no individual sample from its systemexceeded 0.040 mg/ℓ TTHM or 0.030 mg/ℓ HAA5 during eight consecutive calendar quarters.
BOARD NOTE: Derived from 40 CFR 141.603(a) (2006).

"GAC10" means granular activated carbon (GAC) filter beds with an empty-bed contact time of 10 minutes based on average daily flow and a carbon reactivation frequency of every 180 days, except that the reactivation frequency for GAC10 that is used as a best available technology for compliance with the MCLs set forth in Subpart Y of this Part pursuant to 611.312(b)(2) is 120 days.

"GAC20" means granular activated carbon filter beds with an empty-bed contact time of 20 minutes based on average daily flow and a carbon reactivation frequency of every 240 days.

"GC" means "gas chromatography" or "gas-liquid phase chromatography."

"GC/MS" means gas chromatography (GC) followed by mass spectrometry (MS).

"Gross alpha particle activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

"Gross beta particle activity" means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

"Groundwater system" or "GWS" means a public water supply (PWS) that uses only groundwater sources, including a consecutive system that receives finished groundwater.
BOARD NOTE: Derived from 40 CFR 141.23(b)(2) and 141.24(f)(2) note (2006) and 40 CFR 141.400(b), as added at 71 Fed. Reg. 65576 (Nov. 8, 2006).

"Groundwater under the direct influence of surface water" means any water beneath the surface of the ground with significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens, such as Giardia lamblia or Cryptosporidium, or significant and relatively rapid shifts in water characteristics, such as turbidity, temperature, conductivity, or pH, that closely correlate to climatological or surface water conditions. "Groundwater under the direct influence of surface water" is as determined in Section 611.212.

~~"GWS" means "groundwater system," a public water supply (PWS) that uses only groundwater sources.~~
~~BOARD NOTE: Drawn from 40 CFR 141.23(b)(2) & 141.24(f)(2) note (2003).~~

"Haloacetic acids (five)" or "HAA5" means the sum of the concentrations in milligrams per liter (mg/ℓ) of five haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two significant figures after addition.

"Halogen" means one of the chemical elements chlorine, bromine, or iodine.

"HPC" means "heterotrophic plate count," measured as specified in Section 611.531(c).

"Hydrogeologic sensitivity assessment," for the purposes of Subpart S of this Part, means a determination of whether a GWS supplier obtains water from a hydrogeologically sensitive setting.
BOARD NOTE: Derived from 40 C.F.R. 141.400(c)(5), as added at 71 Fed. Reg. 65574 (Nov. 8, 2006).

"Inactivation ratio" or "~~(~~Ai~~)~~" means as follows:

$$Ai = CT_{calc}/CT_{99.9}$$

The sum of the inactivation ratios, or "total inactivation ratio" (B) is calculated by adding together the inactivation ratio for each disinfection

sequence as follows:

$B = \sum(Ai)$

A total inactivation ratio equal to or greater than 1.0 is assumed to provide a 3-log inactivation of Giardia lamblia cysts.

BOARD NOTE: Derived from the definition of "CT" in 40 CFR 141.2 ~~(2003)~~ (2006).

"Initial compliance period" means the three-year compliance period that begins January 1, 1993, except for the MCLs for dichloromethane, 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, benzo(a)pyrene, dalapon, di(2-ethylhexyl)adipate, di(2-ethyl-hexyl)phthalate, dinoseb, diquat, endothall, endrin, glyphosate, hexachlorobenzene, hexachlorocyclopentadiene, oxamyl, picloram, simazine, 2,3,7,8-TCDD, antimony, beryllium, cyanide, nickel, and thallium, as they apply to a supplier whose system has fewer than 150 service connections, for which it means the three-year compliance period that began on January 1, 1996.

"Initial distribution system evaluation" or "IDSE" means the evaluation, performed by the supplier pursuant to Section 611.921(c), to determine the locations in a distribution system that are representative of high TTHM and HAA5 concentrations throughout the distribution system. An IDSE is used in conjunction with, but is distinct from the compliance monitoring undertaken to identify and select monitoring locations used to determine compliance with Subpart X.

BOARD NOTE: Derived from 40 CFR 611.921(c) (2006).

"Inorganic contaminants" or "IOCs" refers to that group of contaminants designated as such in United States Environmental Protection Agency (USEPA) regulatory discussions and guidance documents. IOCs include antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, mercury, nickel, nitrate, nitrite, selenium, and thallium.

BOARD NOTE: The IOCs are derived from 40 CFR 141.23(a)(4) ~~(2003)~~ (2006).

"ℓ" means "liter."

"Lake or reservoir" means a natural or man made basin or hollow on the Earth's surface in which water collects or is stored that may or may not have a current or single direction of flow.

"Legionella" means a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.

"Locational running annual average" or "LRAA" means the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

"Man-made beta particle and photon emitters" means all radionuclides emitting beta particles or photons listed in "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," NCRP Report Number 22, incorporated by reference in Section 611.102, except the daughter products of thorium-232, uranium-235 and uranium-238.

"Maximum contaminant level" or "MCL" means the maximum permissible level of a contaminant in water that is delivered to any user of a public water system. (See Section 611.121.)

"Maximum contaminant level goal" or "MCLG" means the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MCLGs are nonenforceable health goals.
BOARD NOTE: The Board has not routinely adopted the regulations relating to the federal MCLGs because they are outside the scope of the Board's identical-in-substance mandate under Section 17.5 of the Act [415 ILCS 5/17.5].

"Maximum residual disinfectant level" or "MRDL" means the maximum permissible level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. MRDLs are enforceable in the same manner as are MCLs. (See Section 611.313 and Section 611.383.)

"Maximum residual disinfectant level goal" or "MRDLG" means the maximum level of a disinfectant added for water treatment at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MRDLGs are nonenforceable health goals and do not reflect the benefit of the addition of the chemical for control of waterborne microbial contaminants.

"Maximum total trihalomethane potential" or "MTP" means the maximum concentration of total trihalomethanes (TTHMs) produced in a given water containing a disinfectant residual after seven days at a temperature of 25° C or above.

"Membrane filtration" means a pressure or vacuum driven separation process in which particulate matter larger than one micrometer is rejected by an engineered barrier, primarily through a size exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

"MFL" means millions of fibers per liter larger than 10 micrometers.
BOARD NOTE: Derived from 40 CFR 141.23(a)(4)(i) ~~(2003)~~ (2006).

"mg" means milligrams (1/1000 of a gram).

"mg/ℓ" means milligrams per liter.

"Mixed system" means a PWS that uses both groundwater and surface water sources.
BOARD NOTE: Drawn from 40 CFR 141.23(b)(2) and 141.24(f)(2) note ~~(2003)~~ (2006).

"MUG" means 4-methyl-umbelliferyl-beta-d-glucuronide.

"Near the first service connection" means at one of the 20 percent of all service connections in the entire system that are nearest the public water system (PWS) treatment facility, as measured by water transport time within the distribution system.

"nm" means nanometer (1/1,000,000,000 of a meter).

"Non-community water system" or "NCWS" or "non-CWS" means a public water system (PWS) that is not a community water system (CWS). A non-community water system is either a "transient non-community water system (TWS)" or a "non-transient non-community water system (NTNCWS)."

"Non-transient non-community water system" or "NTNCWS" means a public water system (PWS) that is not a community water system (CWS) and that regularly serves at least 25 of the same persons over six months per year.

"NPDWR" means "national primary drinking water regulation."

"NTU" means "nephelometric turbidity units."

"Old MCL" means one of the inorganic maximum contaminant levels (MCLs), codified at Section 611.300, or organic MCLs, codified at Section 611.310, including any marked as "additional State requirements."
BOARD NOTE: Old MCLs are those derived prior to the implementation of the USEPA "Phase II" regulations. The Section 611.640 definition of this term, which applies only to Subpart O of this Part, differs from this definition in that the definition does not include the Section 611.300 inorganic MCLs.

"P-A Coliform Test" means "Presence-Absence Coliform Test."

"Paired sample" means two samples of water for Total Organic Carbon (TOC). One sample is of raw water taken prior to any treatment. The other sample is taken after the point of combined filter effluent and is representative of the treated water. These samples are taken at the same time. (See Section 611.382.)

"Performance evaluation sample" or "PE sample" means a reference sample provided to a laboratory for the purpose of demonstrating that the laboratory can successfully analyze the sample within limits of performance specified by the Agency; or, for bacteriological laboratories, Public Health; or, for radiological laboratories, the Illinois Department of Nuclear Safety. The true value of the concentration of the reference material is unknown to the laboratory at the time of the analysis.

"Person" means an individual, corporation, company, association, partnership, state, unit of local government, or federal agency.

"Phase I" refers to that group of chemical contaminants and the accompanying regulations promulgated by USEPA on July 8, 1987, at 52 Fed. Reg. 25712.

"Phase II" refers to that group of chemical contaminants and the accompanying regulations promulgated by USEPA on January 30, 1991, at 56 Fed. Reg. 3578.

"Phase IIB" refers to that group of chemical contaminants and the accompanying regulations promulgated by USEPA on July 1, 1991, at 56 Fed. Reg. 30266.

"Phase V" refers to that group of chemical contaminants promulgated by USEPA on July 17, 1992, at 57 Fed. Reg. 31776.

"Picocurie" or "pCi" means the quantity of radioactive material producing 2.22 nuclear transformations per minute.

"Plant intake" means the works or structures at the head of a conduit through which water is diverted from a source (e.g., a river or lake) into the treatment plant.

"Point of disinfectant application" is the point at which the disinfectant is applied and downstream of which water is not subject to recontamination by surface water runoff.

"Point-of-entry treatment device" or "POE" is a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.

"Point-of-use treatment device" or "POU" is a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.

"Presedimentation" means a preliminary treatment process used to remove gravel, sand, and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant.

"Public Health" or "DPH" means the Illinois Department of Public Health.
BOARD NOTE: The Department of Public Health ("Public Health") regulates non-community water supplies ("non-CWSs," including non-transient, non-community water supplies ("NTNCWSs") and transient non-community water supplies ("transient non-CWSs")). For the purposes of regulation of supplies by Public Health by reference to this Part, "Agency" must mean Public Health.

"Public water system" or "PWS" means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. A PWS is either a community water system (CWS) or a non-community water system (non-CWS). A PWS does not include any facility defined as "special irrigation district." Such term includes the following:

> Any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and
>
> Any collection or pretreatment storage facilities not under such control that are used primarily in connection with such system.

BOARD NOTE: Where used in Subpart F of this Part, "public water supply" means the same as "public water system."

"Radioactive contaminants" refers to that group of contaminants designated "radioactive contaminants" in USEPA regulatory discussions and guidance documents. "Radioactive contaminants" include tritium, strontium-89, strontium-90, iodine-131, cesium-134, gross beta emitters, and other nuclides.
BOARD NOTE: Derived from 40 CFR 141.25(c) Table B ~~(2003)~~ (2006). These radioactive contaminants must be reported in Consumer Confidence Reports under Subpart U of this Part when they are detected above the levels indicated in Section 611.720(c)(3).

"Reliably and consistently" below a specified level for a contaminant means an Agency determination based on analytical results following the initial detection of a contaminant to determine the qualitative condition of water from an individual sampling point or source. The Agency must base this determination on the consistency of analytical results, the degree below the MCL, the susceptibility of source water to variation, and other vulnerability factors pertinent to the contaminant detected that may influence the quality of water.
BOARD NOTE: Derived from 40 CFR 141.23(b)(9), 141.24(f)(11)(ii), and 141.24(f)(11)(iii) ~~(2003)~~ (2006).

"Rem" means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A "millirem (mrem)" is 1/1000 of a rem.

"Repeat compliance period" means a compliance period that begins after the initial compliance period.

"Representative" means that a sample must reflect the quality of water that is delivered to consumers under conditions when all sources required to supply water under normal conditions are in use and all treatment is properly operating.

"Residual disinfectant concentration" ("RDC" or "C" in CT calculations) means the concentration of disinfectant measured in mg/ℓ in a representative sample of water. For purposes of the requirement of Section 611.241(d) of maintaining a detectable RDC in the distribution system, "RDC" means a residual of free or combined chlorine.

"Safe Drinking Water Act" or "SDWA" means the Public Health Service Act, as amended by the Safe Drinking Water Act, Pub. L. 93-523, 42 USC 300f et seq.

"Sanitary survey" means an onsite review of the water sources (identifying sources of contamination by using results of source water assessments or other relevant information where available), facilities, equipment, operation, ~~and~~ maintenance, and monitoring compliance of a public water system (PWS) ~~for the purpose of evaluating~~ to evaluate the adequacy of ~~such source, facilities, equipment, operation, and maintenance for producing~~ the system, its sources, and operations and the distributing safe drinking water.
BOARD NOTE: Derived from 40 CFR 141.2 (2006) and 40 CFR 142.16(o)(2), as added at 71 Fed. Reg. 65574 (Nov. 8, 2006).

"Sedimentation" means a process for removal of solids before filtration by gravity or separation.

"SEP" means special exception permit (Section 611.110).

"Service connection," as used in the definition of public water system, does not include a connection to a system that delivers water by a constructed conveyance other than a pipe if any of the following is true:

The water is used exclusively for purposes other than residential use (consisting of drinking, bathing, and cooking, or other similar uses);

The Agency determines by issuing a SEP that alternative water for residential use or similar uses for drinking and cooking is provided to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulations; or

The Agency determines by issuing a SEP that the water provided for residential use or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the provider, a

pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.

BOARD NOTE: See sections 1401(4)(B)(i)(II) and (4)(B)(i)(III) of SDWA (42 USC 300f(4)(B)(i)(II) and (4)(B)(i)(III) (2000)).

"Significant deficiency" means a deficiency identified by the Agency in a groundwater system pursuant to Section 611.803. A significant deficiency might include, but is not limited to, a defect in system design, operation, or maintenance or a failure or malfunction of the sources, treatment, storage, or distribution system that the Agency determines to be causing or have potential for causing the introduction of contamination into the water delivered to consumers.
BOARD NOTE: Derived from 40 CFR 142.16(o)(2)(iv), as added at 71 Fed. Reg. 65574 (Nov. 8, 2006). The Agency must submit to USEPA a definition and description of at least one significant deficiency in each of the eight sanitary survey elements listed in Section 611.801(c) as part of the federal primacy requirements. The Board added the general description of what a significant deficiency might include in non-limiting terms, in order to provide this important definition within the body of the Illinois rules. No Agency submission to USEPA can provide definition within the context of Board regulations.

"Slow sand filtration" means a process involving passage of raw water through a bed of sand at low velocity (generally less than 0.4 meters per hour (m/h)) resulting in substantial particulate removal by physical and biological mechanisms.

"SOC" or "Synthetic organic chemical contaminant" refers to that group of contaminants designated as "SOCs," or "synthetic organic chemicals" or "synthetic organic contaminants," in USEPA regulatory discussions and guidance documents. "SOCs" include alachlor, aldicarb, aldicarb sulfone, aldicarb sulfoxide, atrazine, benzo(a)pyrene, carbofuran, chlordane, dalapon, dibromoethylene (ethylene dibromide or EDB), dibromochloropropane (DBCP), di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate, dinoseb, diquat, endothall, endrin, glyphosate, heptachlor, heptachlor epoxide, hexachlorobenzene, hexachlorocyclopentadiene, lindane, methoxychlor, oxamyl, pentachlorophenol, picloram, simazine, toxaphene, poly-chlorinated biphenyls (PCBs), 2,4-D, 2,3,7,8-TCDD, and 2,4,5-TP.
BOARD NOTE: See the Board note appended to Section 611.311 for information relating to implementation of requirements relating to aldicarb, aldicarb sulfone, and aldicarb sulfoxide.

"Source" means a well, reservoir, or other source of raw water.

"Special irrigation district" means an irrigation district in existence prior to May 18, 1994 that provides primarily agricultural service through a piped water system with only incidental residential use or similar use, where the system or the residential users or similar users of the system comply with either of the following exclusion conditions:

The Agency determines by issuing a SEP that alternative water is provided for residential use or similar uses for drinking or cooking to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulations; or

The Agency determines by issuing a SEP that the water provided for residential use or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.

BOARD NOTE: Derived from 40 CFR 141.2 ~~(2003)~~ (2006) and sections 1401(4)(B)(i)(II) and (4)(B)(i)(III) of SDWA (42 USC 300f(4)(B)(i)(II) and (4)(B)(i)(III) (2000)).

"Standard monitoring" means the monitoring, performed by the supplier pursuant to Section 611.921(a) and (b), at various specified locations in a distribution system including near entry points, at points that represent the average residence time in the distribution system, and at points in the distribution system that are representative of high TTHM and HAA5 concentrations throughout the distribution system.

BOARD NOTE: Derived from 40 CFR 141.601(a) and (b) (2006).

"Standard sample" means the aliquot of finished drinking water that is examined for the presence of coliform bacteria.

"Subpart B system" means a public water system that uses surface water or groundwater under the direct influence of surface water as a source and which is subject to the requirements of Subpart B of this Part and the analytical and monitoring requirements of Sections 611.531, 611.532, 611.533, Appendix B of this Part, and Appendix C of this Part.

"Subpart I system" means a public water system that uses surface water or groundwater as a source and which is subject to the disinfectant residuals, disinfection byproducts, and disinfection byproduct precursors requirements of Subpart I of this Part.

"Subpart I compliance monitoring" means monitoring required to demonstrate compliance with disinfectant residuals, disinfection byproducts, and disinfection byproduct precursors requirements of Subpart I of this Part.

"Subpart Y compliance monitoring" means monitoring required to demonstrate compliance with Stage 2 disinfection byproducts requirements of Subpart Y of this Part.

"Supplier of water" or "supplier" means any person who owns or operates a public

water system (PWS). This term includes the "official custodian."

"Surface water" means all water that is open to the atmosphere and subject to surface runoff.

"SUVA" means specific ultraviolet absorption at 254 nanometers (nm), which is an indicator of the humic content of water. It is a calculated parameter obtained by dividing a sample's ultraviolet absorption at a wavelength of 254 nm (UV_{254}) (in m^{-1}) by its concentration of dissolved organic carbon (in mg/ℓ).

"SWS" means "surface water system," a public water supply (PWS) that uses only surface water sources, including "groundwater under the direct influence of surface water."
BOARD NOTE: Derived from 40 CFR 141.23(b)(2) and 141.24(f)(2) note ~~(2003)~~ (2006).

"System-specific study plan" means the plan, submitted by the supplier to the Agency pursuant to Section 611.922, for studying the occurrence of TTHM and HAA5 in a supplier's distribution system based on either monitoring results or modelling of the system.
BOARD NOTE: Derived from 40 CFR 141.602 (2006).

"System with a single service connection" means a system that supplies drinking water to consumers via a single service line.

"Too numerous to count" means that the total number of bacterial colonies exceeds 200 on a 47-mm diameter membrane filter used for coliform detection.

"Total organic carbon" or "TOC" means total organic carbon (in mg/ℓ) measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two significant figures.

"Total trihalomethanes" or "TTHM" means the sum of the concentration of trihalomethanes (THMs), in milligrams per liter (mg/ℓ), rounded to two significant figures.
BOARD NOTE: See the definition of "trihalomethanes" for a listing of the four compounds that USEPA considers TTHMs to comprise.

"Transient, non-community water system" or "transient non-CWS" means a non-CWS that does not regularly serve at least 25 of the same persons over six months of the year.
BOARD NOTE: The federal regulations apply to all "public water systems," which are defined as all systems ~~having~~ that has at least 15 service connections or which regularly ~~serving~~ serves water to at least 25 persons. (See 42 USC 300f(4).) The Act mandates that the Board and the Agency regulate "public water supplies," which it

defines as having at least 15 service connections or regularly serving 25 persons daily at least 60 days per year. (See Section 3.28 of the Act [415 ILCS 5/3.28].) The Department of Public Health regulates transient, non-community water systems.

"Treatment" means any process that changes the physical, chemical, microbiological, or radiological properties of water, is under the control of the supplier, and is not a point-of-use treatment device or a point-of-entry treatment device as defined in this Section. Treatment includes, but is not limited to, aeration, coagulation, sedimentation, filtration, activated carbon treatment, disinfection, and fluoridation.

"Trihalomethane" or "THM" means one of the family of organic compounds, named as derivatives of methane, in which three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure. The THMs are the following compounds:

Trichloromethane (chloroform),

Dibromochloromethane,

Bromodichloromethane, and

Tribromomethane (bromoform)

"Two-stage lime softening" means a process in which chemical addition and hardness precipitation occur in each of two distinct unit clarification processes in series prior to filtration.

"µg" means micrograms (1/1,000,000 of a gram).

"USEPA" means the U.S. Environmental Protection Agency.

"Uncovered finished water storage facility" is a tank, reservoir, or other facility that is used to store water which will undergo no further treatment to reduce microbial pathogens except residual disinfection and which is directly open to the atmosphere ~~and which is used to store water that will undergo no further treatment except residual disinfection~~.

"Very small system waiver" means the conditional waiver from the requirements of Subpart W of this Part applicable to a supplier that serves fewer than 500 persons and which has taken TTHM and HAA5 samples pursuant to Subpart I of this Part.
BOARD NOTE: Derived from 40 CFR 141.604 (2006).

"Virus" means a virus of fecal origin that is infectious to humans by waterborne transmission.

"VOC" or "volatile organic chemical contaminant" refers to that group of contaminants designated as "VOCs," "volatile organic chemicals," or "volatile organic contaminants," in USEPA regulatory discussions and guidance documents. "VOCs" include benzene, dichloromethane, tetrachloromethane (carbon tetrachloride), trichloroethylene, vinyl chloride, 1,1,1-trichloroethane (methyl chloroform), 1,1-dichloroethylene, 1,2-dichloroethane, cis-1,2-dichloroethylene, ethylbenzene, monochlorobenzene, o-dichlorobenzene, styrene, 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, tetrachloroethylene, toluene, trans-1,2-dichloroethylene, xylene, and 1,2-dichloropropane.

"Waterborne disease outbreak" means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system (PWS) that is deficient in treatment, as determined by the appropriate local or State agency.

"Wellhead protection program" means the wellhead protection program for the State of Illinois, approved by USEPA under Section 1428 of the SDWA, 42 USC 300h-7. BOARD NOTE: Derived from 40 CFR 141.71(b) ~~(2003)~~ (2006). The wellhead protection program includes the "groundwater protection needs assessment" under Section 17.1 of the Act [415 ILCS 5/17.1] and 35 Ill. Adm. Code 615-617.

"Wholesale system" means a public water system that treats source water as necessary to produce finished water, which then delivers some or all of that finished water to another public water system. Delivery by a wholesale system may be through a direct connection or through the distribution system of one or more consecutive systems.

BOARD NOTE: Derived from 40 CFR 141.2 ~~(2003)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.102 Incorporations by Reference

a) Abbreviations and short-name listing of references. The following names and abbreviated names, presented in alphabetical order, are used in this Part to refer to materials incorporated by reference:

"ASTM Method" means a method published by and available from the American Society for Testing and Materials (ASTM).

"Colisure Test" means "Colisure Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia Coli in Drinking Water," available from Millipore Corporation, Technical Services Department.

"Colitag® Test" means "Colitag® Product as a Test for Detection and Identification of Coliforms and E. coli Bacteria in Drinking Water and Source Water as Required in National Primary Drinking Water Regulations," available from CPI International.

"Determination of Inorganic Oxyhalide" means "Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis," available from NTIS.

"Dioxin and Furan Method 1613" means "Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope-Dilution HRGC/HRMS," available from NTIS.

"E*Colite Test" means "Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Drinking Water," available from Charm Sciences, Inc. and USEPA, Water Resource Center.

"EC-MUG" means "Method 9221 F: Multiple-Tube Fermentation Technique for Members of the Coliform Group, Escherichia Coli Procedure (Proposed)," available from American Public Health Association and American Waterworks Association.

"Enterolert" means "Evaluation of Enterolert for Enumeration of Enterococci in Recreational Waters," available from American Society for Microbiology.

"GLI Method 2" means GLI Method 2, "Turbidity," Nov. 2, 1992, available from Great Lakes Instruments, Inc.

"Hach FilterTrak Method 10133" means "Determination of Turbidity by Laser Nephelometry," available from Hach Co.

"HASL Procedure Manual" means HASL Procedure Manual, HASL 300, available from ERDA Health and Safety Laboratory.

"Kelada 01" means "Kelada Automated Test Methods for Total Cyanide, Acid Dissociable Cyanide, And Thiocyanate," Revision 1.2, August 2001, ~~EPA # 821–B–01–009~~ EPA 821/B–01/009, available from the National Technical Information Service (NTIS).

"m-ColiBlue24 Test" means "Total Coliforms and E. coli Membrane Filtration Method with m-ColiBlue24® Broth," available from Hach Company and USEPA, Water Resource Center.

"Membrane Filter Technique using Chromocult Doliform Agar" means "Chromocult Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters," available from EMD Chemicals Inc.

"NA-MUG" means "Method 9222 G: Membrane Filter Technique for Members of the Coliform Group, MF Partition Procedures," available from American Public Health Association and American Waterworks Association.

"NCRP" means "National Council on Radiation Protection."

"NTIS" means "National Technical Information Service."

"New Jersey Radium Method" means "Determination of Radium 228 in Drinking Water," available from the New Jersey Department of Environmental Protection.

"New York Radium Method" means "Determination of Ra-226 and Ra-228 (Ra-02)," available from the New York Department of Public Health.

"~~ONGP-MUG~~ ONPG-MUG Test" (meaning "minimal medium ortho-nitrophenyl-beta-d-galactopyranoside-4-methyl-umbelliferyl-beta-d-glucuronide test"), also called the "Autoanalysis Colilert System," is Method 9223, available in "Standard Methods for the Examination of Water and Wastewater," 18th, 19th, 20th, or 21st ed., from American Public Health Association and the American Water Works Association.

"Palintest Method 1001" means "Method Number 1001," available from Palintest, Ltd. or the Hach Company.

"QuikChem Method 10–204–00–1-X" means "Digestion and distillation of total cyanide in drinking and wastewaters using MICRO DIST and determination of cyanide by flow injection analysis," available from Lachat Instruments.

"Readycult Coliforms 100 Presence/Absence Test" means "Readycult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters," available from EMD Chemicals Inc.

"SimPlate Method" means "IDEXX SimPlate TM HPC Test Method for Heterotrophs in Water," available from IDEXX Laboratories, Inc.

"Radiochemical Methods" means "Interim Radiochemical Methodology for Drinking Water," available from NTIS.

"Standard Methods" means "Standard Methods for the Examination of Water and Wastewater," available from the American Public Health Association or the American Waterworks Association.

"Syngenta AG-625" means "Atrazine in Drinking Water by Immunoassay," February 2001 is available from Syngenta Crop Protection, Inc.

"Technical Bulletin 601" means "Technical Bulletin 601, Standard Method of Testing for Nitrate in Drinking Water," July 1994, available from Analytical Technology, Inc.

"Technicon Methods" means "Fluoride in Water and Wastewater," available from Bran & Luebbe.

"USDOE Manual" means "EML Procedures Manual," available from the United State Department of Energy.

"USEPA Asbestos Methods-100.1" means Method 100.1, "Analytical Method for Determination of Asbestos Fibers in Water," September 1983, available from NTIS.

"USEPA Asbestos Methods-100.2" means Method 100.2, "Determination of Asbestos Structures over 10-mm in Length in Drinking Water," June 1994, available from NTIS.

"USEPA Environmental Inorganics Methods" means "Methods for the Determination of Inorganic Substances in Environmental Samples," August 1993, available from NTIS.

"USEPA Environmental Metals Methods" means "Methods for the Determination of Metals in Environmental Samples," available from NTIS.

"USEPA Inorganic Methods" means "Methods for Chemical Analysis of Water and Wastes," March 1983, available from NTIS.

"USEPA Interim Radiochemical Methods" means "Interim Radiochemical Methodology for Drinking Water," ~~EPA 600/4-75-008~~ EPA 600/4-75/008 (revised), March 1976. Available from NTIS.

"USEPA Method 1600" means "Method 1600: Enterococci in Water by Membrane Filtration Using membrane-Enterococcus Indoxyl–b–D–Glucoside Agar (mEI)," available from USEPA, Water Resource Center.

"USEPA Method 1601" means "Method 1601: Male-specific (F^{+}) and Somatic Coliphage in Water by Two-step Enrichment Procedure," available from USEPA, Water Resource Center.

"USEPA Method 1602" menas "Method 1602: Male-specific (F^{+}) and Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure," available from USEPA, Water Resource Center.

"USEPA Method 1604" means "Method 1604: Total Coliforms and Escherichia coli in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium)," available from USEPA Water Resource Center.

"USEPA Method 1622 (05)" means "Method 1622: Cryptosporidium in Water by Filtration/IMS/FA," December 2005, available from the USEPA, Office of Ground Water and Drinking Water, a listed in subsection (b) of this Section.

"USEPA Method 1622 (01)" means "Method 1622: Cryptosporidium in Water by Filtration/IMS/FA," April 2001, available from the USEPA, Office of Ground Water and Drinking Water, a listed in subsection (b) of this Section.

"USEPA Method 1622 (99)" means "Method 1622: Cryptosporidium in Water by Filtration/IMS/FA," January 1999, available from the USEPA, Office of Ground Water and Drinking Water, a listed in subsection (b) of this Section.

"USEPA Method 1623 (05)" means "Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA," December 2005, available from the USEPA, Office of Ground Water and Drinking Water, a listed in subsection (b) of this Section.

"USEPA Method 1623 (01)" means "Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA," April 2001, available from the USEPA, Office of Ground Water and Drinking Water, a listed in subsection (b) of this Section.

"USEPA Method 1623 (99)" means "Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA," April 1999, available from the USEPA, Office of Ground Water and Drinking Water, a listed in subsection (b) of this Section.

"USEPA OGWDW Methods" means one of the methods listed as available from the USEPA, Office of Ground Water and Drinking Water, a listed in subsection (b) of this Section (Methods 317.0 (rev. 2.0), 326.0

(rev. 1.0), 327.0 (rev. 1.1), 515.4 (rev. 1.0), 531.2 (rev. 1.0), and 552.3 (rev. 1.0)).

"USEPA Organic Methods" means "Methods for the Determination of Organic Compounds in Drinking Water," July 1991, for Methods 502.2, 505, 507, 508, 508A, 515.1, and 531.1; "Methods for the Determination of Organic Compounds in Drinking Water—Supplement I," July 1990, for Methods 506, 547, 550, 550.1, and 551; ~~and~~ "Methods for the Determination of Organic Compounds in Drinking Water—Supplement II," August 1992, for Methods 504.1, 508.1, 515.2, 524.2, 525.2, 548.1, 549.1, 552.1, 552.2, and 555~~, available from NTIS. Methods 504.1, 508.1, and 525.2 are available from EPA EMSL; "Methods for the Determination of Organic Compounds" in Drinking Water—Supplement II, August 1992, for Method 552.1~~; and "Methods for the Determination of Organic Compounds in Drinking Water—Supplement III," August 1995, for Methods 502.2, 524.2, 551.1, and 552.2. Method 515.4, "Determination of Chlorinated Acids in Drinking Water by Liquid-Liquid Microextraction, Derivatization and Fast Gas Chromatography with Electron Capture Detection," Revision 1.0, April 2000, EPA 815/B–00/001, and Method 531.2, "Measurement of N-methylcarbamoyloximes and N-methylcarbamates in Water by Direct Aqueous Injection HPLC with Postcolumn Derivatization," Revision 1.0, September 2001, ~~EPA 815/B/01/002~~ EPA 815/B-01/002, are both available on-line from USEPA, Office of Ground Water and Drinking Water.

"USEPA Organic and Inorganic Methods" means "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1," EPA 815/R-00/014, PB2000-106981, August 2000. Available from NTIS.

"USEPA NERL Method 415.3 (rev. 1.1)" means Method 415.3, Revision 1.1, "Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water," USEPA, February 2005, EPA 600/R-05/055. Available from the USEPA, Office of Research and Development.

"USEPA Radioactivity Methods" means "Prescribed Procedures for Measurement of Radioactivity in Drinking Water," ~~EPA 600/4-80-032~~ EPA 600/4-80/032, August 1980. Available from NTIS.

"USEPA Radiochemical Analyses" means "Radiochemical Analytical Procedures for Analysis of Environmental Samples," March 1979. Available from NTIS.

"USEPA Radiochemistry Methods" means "Radiochemistry Procedures Manual," ~~EPA 520/5-84-006~~ EPA 520/5-84/006, December 1987.

Available from NTIS.

"USEPA Technical Notes" means "Technical Notes on Drinking Water Methods," available from NTIS.

"USGS Methods" means "Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of Inorganic and Organic Constituents in Water and Fluvial Sediments," available from NTIS and USGS.

"Waters Method B-1011" means "Waters Test Method for the Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography," available from Waters Corporation, Technical Services Division.

b) The Board incorporates the following publications by reference:

APHA. American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005 ~~(800-645-5476)~~ 202-777-2742.

"Standard Methods for the Examination of Water and Wastewater," 17th Edition, 1989 (referred to as "Standard Methods, 17th ed."). See the methods listed separately for the same references under American Waterworks Association.

"Standard Methods for the Examination of Water and Wastewater," 18th Edition, 1992, including "Supplement to the 18th Edition of Standard Methods for the Examination of Water and Wastewater," 1994 (collectively referred to as "Standard Methods, 18th ed."). See the methods listed separately for the same references under American Waterworks Association.

"Standard Methods for the Examination of Water and Wastewater," 19th Edition, 1995 (referred to as "Standard Methods, 19th ed."). See the methods listed separately for the same references under American Waterworks Association.

"Standard Methods for the Examination of Water and Wastewater," 20th Edition, 1998 (referred to as "Standard Methods, 20th ed."). See the methods listed separately for the same references under American Waterworks Association.

"Standard Methods for the Examination of Water and Wastewater," 21st Edition, 2005 (referred to as "Standard Methods, 21st ed."). See the methods listed separately for the same references under American Waterworks Association.

American Society for Microbiology, 1752 N Street N.W., Washington, DC 20036, 202-737-3600:

"Evaluation of Enterolert for Enumeration of Enterococci in Recreational Waters," Applied and Environmental Microbiology, Oct. 1996, vol. 62, no. 10, p. 3881 (referred to as "Enterolert"), referenced in Section 611.802.

BOARD NOTE: At the table to 40 CFR 141.402(c)(2), USEPA approved the method as described in the above literature review. The method itself is embodied in the printed instructions to the proprietary kit available from IDEXX Laboratories, Inc. (accessible on-line and available by download from www.asm.org, as "Enterolert™ Procedure"). ASTM approved the method as "Standard Test Method for Enterococci in Water Using Enterolert™," which is available in two versions from ASTM: ASTM D 6503-99 (superceded) and ASTM D 6503-99 (2005). While it is more conventional to incorporate the method as presented in the kit instructions or as approved by ASTM by reference, the Board is constrained to incorporate the version that appears in the technical literature by reference, which is the version that USEPA has explicitly approved.

AWWA. American ~~Waterworks~~ Water Works Association et al., 6666 West Quincy Ave., Denver, CO 80235 (303-794-7711).

"National Field Evaluation of a Defined Substrate Method for the Simultaneous Enumeration of Total Coliforms and Escherichia coli for Drinking Water: Comparison with the Standard Multiple Tube Fermentation Method," S.C. Edberg, M.J. Allen & D.B. Smith, Applied Environmental Microbiology, vol. 54, iss. 6, pp 1595-1601 (1988), referenced in Appendix D to this Part.

"Standard Methods for the Examination of Water and Wastewater," 13th Edition, 1971 (referred to as "Standard Methods, 13th ed.").

Method 302, Gross Alpha and Gross Beta Radioactivity in Water (Total, Suspended, and Dissolved), referenced in Section 611.720.

Method 303, Total Radioactive Strontium and Strontium 90 in Water, referenced in Section 611.720.

Method 304, Radium in Water by Precipitation, referenced

in Section 611.720.

Method 305, Radium 226 by Radon in Water (Soluble, Suspended, and Total), referenced in Section 611.720.

Method 306, Tritium in Water, referenced in Section 611.720.

"Standard Methods for the Examination of Water and Wastewater," 17th Edition, 1989 (referred to as "Standard Methods, 17th ed.").

Method 7110 B, Gross Alpha and Gross Beta Radioactivity in Water (Total, Suspended, and Dissolved), referenced in Section 611.720.

Method 7500-Cs B, Radioactive Cesium, Precipitation Method, referenced in Section 611.720.

Method 7500-^{3}H B, Tritium in Water, referenced in Section 611.720.

Method 7500-I B, Radioactive Iodine, Precipitation Method, referenced in Section 611.720.

Method 7500-I C, Radioactive Iodine, Ion-Exchange Method, referenced in Section 611.720.

Method 7500-I D, Radioactive Iodine, Distillation Method, referenced in Section 611.720.

Method 7500-Ra B, Radium in Water by Precipitation, referenced in Section 611.720.

Method 7500-Ra C, Radium 226 by Radon in Water (Soluble, Suspended, and Total), referenced in Section 611.720.

Method 7500-Ra D, Radium, Sequential Precipitation Method (Proposed), referenced in Section 611.720.

Method 7500-Sr B, Total Radioactive Strontium and Strontium 90 in Water, referenced in Section 611.720.

Method 7500-U B, Uranium, Radiochemical Method (Proposed), referenced in Section 611.720.

Method 7500-U C, Uranium, Isotopic Method (Proposed), referenced in Section 611.720.

"Standard Methods for the Examination of Water and Wastewater," 18th Edition, 1992 (referred to as "Standard Methods, 18th ed.").

Method 2130 B, Turbidity, Nephelometric Method, referenced in Section 611.531.

Method 2320 B, Alkalinity, Titration Method, referenced in Section 611.611.

Method 2510 B, Conductivity, Laboratory Method, referenced in Section 611.611.

Method 2550, Temperature, Laboratory and Field Methods, referenced in Section 611.611.

Method 3111 B, Metals by Flame Atomic Absorption Spectrometry, Direct Air-Acetylene Flame Method, referenced in Sections 611.611 and 611.612.

Method 3111 D, Metals by Flame Atomic Absorption Spectrometry, Direct Nitrous Oxide-Acetylene Flame Method, referenced in Section 611.611.

Method 3112 B, Metals by Cold-Vapor Atomic Absorption Spectrometry, Cold-Vapor Atomic Absorption Spectrometric Method, referenced in Section 611.611.

Method 3113 B, Metals by Electrothermal Atomic Absorption Spectrometry, Electrothermal Atomic Absorption Spectrometric Method, referenced in Sections 611.611 and 611.612.

Method 3114 B, Metals by Hydride Generation/Atomic Absorption Spectrometry, Manual Hydride Generation/Atomic Absorption Spectrometric Method, referenced in Section 611.611.

Method 3120 B, Metals by Plasma Emission Spectroscopy, Inductively Coupled Plasma (ICP) Method, referenced in Sections 611.611 and 611.612.

Method 3500-Ca D, Calcium, EDTA Titrimetric Method, referenced in Section 611.611.

Method 3500-Mg E, Magnesium, Calculation Method, referenced in Section 611.611.

Method 4110 B, Determination of Anions by Ion Chromatography, Ion Chromatography with Chemical Suppression of Eluent Conductivity, referenced in Section 611.611.

Method 4500-CN^- C, Cyanide, Total Cyanide after Distillation, referenced in Section 611.611.

Method 4500-CN^- E, Cyanide, Colorimetric Method, referenced in Section 611.611.

Method 4500-CN^- F, Cyanide, Cyanide-Selective Electrode Method, referenced in Section 611.611.

Method 4500-CN^- G, Cyanide, Cyanides Amenable to Chlorination after Distillation, referenced in Section 611.611.

Method 4500-Cl D, Chlorine, Amperometric Titration Method, referenced in Section 611.531.

Method 4500-Cl E, Chlorine, Low-Level Amperometric Titration Method, referenced in Section 611.531.

Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric Method, referenced in Section 611.531.

Method 4500-Cl G, Chlorine, DPD Colorimetric Method, referenced in Section 611.531.

Method 4500-Cl H, Chlorine, Syringaldazine (FACTS) Method, referenced in Section 611.531.

Method 4500-Cl I, Chlorine, Iodometric Electrode Method, referenced in Section 611.531.

Method 4500-ClO_2 C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.

Method 4500-ClO_2 D, Chlorine Dioxide, DPD Method,

referenced in Section 611.531.

Method 4500-ClO_2 E, Chlorine Dioxide, Amperometric Method II (Proposed), referenced in Section 611.531.

Method 4500-F^- B, Fluoride, Preliminary Distillation Step, referenced in Section 611.611.

Method 4500-F^- C, Fluoride, Ion-Selective Electrode Method, referenced in Section 611.611.

Method 4500-F^- D, Fluoride, SPADNS Method, referenced in Section 611.611.

Method 4500-F^- E, Fluoride, Complexone Method, referenced in Section 611.611.

Method 4500-H^+ B, pH Value, Electrometric Method, referenced in Section 611.611.

Method 4500-NO_2^- B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.

Method 4500-NO_3^- D, Nitrogen (Nitrate), Nitrate Electrode Method, referenced in Section 611.611.

Method 4500-NO_3^- E, Nitrogen (Nitrate), Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-NO_3^- F, Nitrogen (Nitrate), Automated Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-O_3 B, Ozone (Residual) (Proposed), Indigo Colorimetric Method, referenced in Section 611.531.

Method 4500-P E, Phosphorus, Ascorbic Acid Method, referenced in Section 611.611.

Method 4500-P F, Phosphorus, Automated Ascorbic Acid Reduction Method, referenced in Section 611.611.

Method 4500-Si D, Silica, Molybdosilicate Method, referenced in Section 611.611.

Method 4500-Si E, Silica, Heteropoly Blue Method,

referenced in Section 611.611.

Method 4500-Si F, Silica, Automated Method for Molybdate-Reactive Silica, referenced in Section 611.611.

Method 6651, Glyphosate Herbicide (Proposed), referenced in Section 611.645.

Method 7110 B, Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved), Evaporation Method for Gross Alpha-Beta, referenced in Section 611.720.

Method 7110 C, Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved), Coprecipitation Method for Gross Alpha Radioactivity in Drinking Water (Proposed), referenced in Section 611.720.

Method 7500-Cs B, Radioactive Cesium, Precipitation Method, referenced in Section 611.720.

Method 7500-^{3}H B, Tritium, Liquid Scintillation Spectrometric Method, referenced in Section 611.720.

Method 7500-I B, Radioactive Iodine, Precipitation Method, referenced in Section 611.720.

Method 7500-I C, Radioactive Iodine, Ion-Exchange Method, referenced in Section 611.720.

Method 7500-I D, Radioactive Iodine, Distillation Method, referenced in Section 611.720.

Method 7500-Ra B, Radium, Precipitation Method, referenced in Section 611.720.

Method 7500-Ra C, Radium, Emanation Method, referenced in Section 611.720.

Method 7500-Ra D, Radium, Sequential Precipitation Method (Proposed), referenced in Section 611.720.

Method 7500-Sr B, Total Radioactive Strontium and Strontium 90, Precipitation Method, referenced in Section 611.720.

Method 7500-U B, Uranium, Radiochemical Method

(Proposed), referenced in Section 611.720.

Method 7500-U C, Uranium, Isotopic Method (Proposed), referenced in Section 611.720.

Method 9215 B, Heterotrophic Plate Count, Pour Plate Method, referenced in Section 611.531.

Method 9221 A, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Introduction, referenced in Sections 611.526 and 611.531.

Method 9221 B, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Standard Total Coliform Fermentation Technique, referenced in Sections 611.526 and 611.531.

Method 9221 C, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Estimation of Bacterial Density, referenced in Sections 611.526 and 611.531.

Method 9221 D, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Presence-Absence (P-A) Coliform Test, referenced in Section 611.526.

Method 9221 E, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Fecal Coliform Procedure, referenced in Sections 611.526 and 611.531.

Method 9222 A, Membrane Filter Technique for Members of the Coliform Group, Introduction, referenced in Sections 611.526 and 611.531.

Method 9222 B, Membrane Filter Technique for Members of the Coliform Group, Standard Total Coliform Membrane Filter Procedure, referenced in Sections 611.526 and 611.531.

Method 9222 C, Membrane Filter Technique for Members of the Coliform Group, Delayed-Incubation Total Coliform Procedure, referenced in Sections 611.526 and 611.531.

Method 9222 D, Membrane Filter Technique for Members of the Coliform Group, Fecal Coliform Membrane Filter Procedure, referenced in Section 611.531.

Method 9223, Chromogenic Substrate Coliform Test (Proposed) (also referred to as the variations "Autoanalysis Colilert System" and "Colisure Test"), referenced in Sections 611.526, ~~and~~ 611.531, and 611.1004.

"Supplement to the 18th Edition of Standard Methods for the Examination of Water and Wastewater," American Public Health Association, 1994.

Method 6610, Carbamate Pesticide Method, referenced in Section 611.645.

"Standard Methods for the Examination of Water and Wastewater," 19th Edition, 1995 (referred to as "Standard Methods, 19th ed.").

Method 2130 B, Turbidity, Nephelometric Method, referenced in Section 611.531.

Method 2320 B, Alkalinity, Titration Method, referenced in Section 611.611.

Method 2510 B, Conductivity, Laboratory Method, referenced in Section 611.611.

Method 2550, Temperature, Laboratory, and Field Methods, referenced in Section 611.611.

Method 3111 B, Metals by Flame Atomic Absorption Spectrometry, Direct Air-Acetylene Flame Method, referenced in Sections 611.611 and 611.612.

Method 3111 D, Metals by Flame Atomic Absorption Spectrometry, Direct Nitrous Oxide-Acetylene Flame Method, referenced in Section 611.611.

Method 3112 B, Metals by Cold-Vapor Atomic Absorption Spectrometry, Cold-Vapor Atomic Absorption Spectrometric Method, referenced in Section 611.611.

Method 3113 B, Metals by Electrothermal Atomic Absorption Spectrometry, Electrothermal Atomic Absorption Spectrometric Method, referenced in Sections 611.611 and 611.612.

Method 3114 B, Metals by Hydride Generation/Atomic Absorption Spectrometry, Manual Hydride Generation/Atomic Absorption Spectrometric Method, referenced in Section 611.611.

Method 3120 B, Metals by Plasma Emission Spectroscopy, Inductively Coupled Plasma (ICP) Method, referenced in Section 611.611 and 611.612.

Method 3500-Ca D, Calcium, EDTA Titrimetric Method, referenced in Section 611.611.

Method 3500-Mg E, Magnesium, Calculation Method, referenced in Section 611.611.

Method 4110 B, Determination of Anions by Ion Chromatography, Ion Chromatography with Chemical Suppression of Eluent Conductivity, referenced in Section 611.611.

Method 4500-Cl D, Chlorine, Amperometric Titration Method, referenced in Sections 611.381 and 611.531.

Method 4500-Cl E, Chlorine, Low-Level Amperometric Titration Method, referenced in Sections 611.381 and 611.531.

Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric Method, referenced in Sections 611.381 and 611.531.

Method 4500-Cl G, Chlorine, DPD Colorimetric Method, referenced in Sections 611.381 and 611.531.

Method 4500-Cl H, Chlorine, Syringaldazine (FACTS) Method, referenced in Sections 611.381 and 611.531.

Method 4500-Cl I, Chlorine, Iodometric Electrode Method, referenced in Sections 611.381 and 611.531.

Method 4500-ClO_2 C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.

Method 4500-ClO_2 D, Chlorine Dioxide, DPD Method, referenced in Sections 611.381 and 611.531.

Method 4500-ClO_2 E, Chlorine Dioxide, Amperometric

Method II ~~(Proposed)~~, referenced in Sections 611.381 and 611.531.

Method 4500-CN^- C, Cyanide, Total Cyanide after Distillation, referenced in Section 611.611.

Method 4500-CN^- E, Cyanide, Colorimetric Method, referenced in Section 611.611.

Method 4500-CN^- F, Cyanide, Cyanide-Selective Electrode Method, referenced in Section 611.611.

Method 4500-CN^- G, Cyanide, Cyanides Amenable to Chlorination after Distillation, referenced in Section 611.611.

Method 4500-F^- B, Fluoride, Preliminary Distillation Step, referenced in Section 611.611.

Method 4500-F^- C, Fluoride, Ion-Selective Electrode Method, referenced in Section 611.611.

Method 4500-F^- D, Fluoride, SPADNS Method, referenced in Section 611.611.

Method 4500-F^- E, Fluoride, Complexone Method, referenced in Section 611.611.

Method 4500-H^+ B, pH Value, Electrometric Method, referenced in Section 611.611.

Method 4500-NO_2^- B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.

Method 4500-NO_3^- D, Nitrogen (Nitrate), Nitrate Electrode Method, referenced in Section 611.611.

Method 4500-NO_3^- E, Nitrogen (Nitrate), Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-NO_3^- F, Nitrogen (Nitrate), Automated Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-O_3 B, Ozone (Residual) (Proposed), Indigo Colorimetric Method, referenced in Section 611.531.

Method 4500-P E, Phosphorus, Ascorbic Acid Method, referenced in Section 611.611.

Method 4500-P F, Phosphorus, Automated Ascorbic Acid Reduction Method, referenced in Section 611.611.

Method 4500-Si D, Silica, Molybdosilicate Method, referenced in Section 611.611.

Method 4500-Si E, Silica, Heteropoly Blue Method, referenced in Section 611.611.

Method 4500-Si F, Silica, Automated Method for Molybdate-Reactive Silica, referenced in Section 611.611.

Method 5910 B, UV Absorbing Organic Constituents, Ultraviolet Absorption Method, referenced in Section 611.381.

Method 6251 B, Disinfection Byproducts: Haloacetic Acids and Trichlorophenol, Micro Liquid-Liquid Extraction Gas Chromatographic Method, referenced in Section 611.381.

Method 6610, Carbamate Pesticide Method, referenced in Section 611.645.

Method 6651, Glyphosate Herbicide (Proposed), referenced in Section 611.645.

Method 7110 B, Gross Alpha and Gross Beta Radioactivity, Evaporation Method for Gross Alpha-Beta, referenced in Section 611.720.

Method 7110 C, Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved), Coprecipitation Method for Gross Alpha Radioactivity in Drinking Water (Proposed), referenced in Section 611.720.

Method 7120 B, Gamma-Emitting Radionuclides, Gamma Spectrometric Method, referenced in Section 611.720.

Method 7500-Cs B, Radioactive Cesium, Precipitation Method, referenced in Section 611.720.

Method 7500-^{3}H B, Tritium, Liquid Scintillation

Spectrometric Method, referenced in Section 611.720.

Method 7500-I B, Radioactive Iodine, Precipitation Method, referenced in Section 611.720.

Method 7500-I C, Radioactive Iodine, Ion-Exchange Method, referenced in Section 611.720.

Method 7500-I D, Radioactive Iodine, Distillation Method, referenced in Section 611.720.

Method 7500-Ra B, Radium, Precipitation Method, referenced in Section 611.720.

Method 7500-Ra C, Radium, Emanation Method, referenced in Section 611.720.

Method 7500-Ra D, Radium, Sequential Precipitation Method, referenced in Section 611.720.

Method 7500-Sr B, Total Radiactive Strontium and Strontium 90, Precipitation Method, referenced in Section 611.720.

Method 7500-U B, Uranium, Radiochemical Method, referenced in Section 611.720.

Method 7500-U C, Uranium, Isotopic Method, referenced in Section 611.720.

Method 9215 B, Heterotrophic Plate Count, Pour Plate Method, referenced in Section 611.531.

Method 9221 A, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Introduction, referenced in Sections 611.526 and 611.531.

Method 9221 B, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Standard Total Coliform Fermentation Technique, referenced in Sections 611.526 and 611.531.

Method 9221 C, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Estimation of Bacterial Density, referenced in Sections 611.526 and 611.531.

Method 9221 D, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Presence-Absence (P-A) Coliform Test, referenced in Section 611.526.

Method 9221 E, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Fecal Coliform Procedure, referenced in Sections 611.526 and 611.531.

Method 9222 A, Membrane Filter Technique for Members of the Coliform Group, Introduction, referenced in Sections 611.526 and 611.531.

Method 9222 B, Membrane Filter Technique for Members of the Coliform Group, Standard Total Coliform Membrane Filter Procedure, referenced in Sections 611.526 and 611.531.

Method 9222 C, Membrane Filter Technique for Members of the Coliform Group, Delayed-Incubation Total Coliform Procedure, referenced in Sections 611.526 and 611.531.

Method 9222 D, Membrane Filter Technique for Members of the Coliform Group, Fecal Coliform Membrane Filter Procedure, referenced in Section 611.531.

Method 9222 G, Membrane Filter Technique for Members of the Coliform Group, MF Partition Procedures, referenced in Section 611.526.

Method 9223, Chromogenic Substrate Coliform Test ~~(Proposed)~~ (also referred to as the variations "Autoanalysis Colilert System" and "Colisure Test"), referenced in Sections 611.526, ~~and~~ 611.531, and 611.1004.

"Supplement to the 19th Edition of Standard Methods for the Examination of Water and Wastewater," American Public Health Association, 1996.

Method 5310 B, TOC, Combustion-Infrared Method, referenced in Section 611.381.

Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation Method, referenced in Section 611.381.

Method 5310 D, TOC, Wet-Oxidation Method, referenced

in Section 611.381.

"Standard Methods for the Examination of Water and Wastewater," 20th Edition, 1998 (referred to as "Standard Methods, 20th ed.").

Method 2130 B, Turbidity, Nephelometric Method, referenced in Section 611.531.

Method 2320 B, Alkalinity, Titration Method, referenced in Section 611.611.

Method 2510 B, Conductivity, Laboratory Method, referenced in Section 611.611.

Method 2550, Temperature, Laboratory, and Field Methods, referenced in Section 611.611.

Method 3120 B, Metals by Plasma Emission Spectroscopy, Inductively Coupled Plasma (ICP) Method, referenced in Section 611.612.

Method 3500-Ca B, Calcium, EDTA Titrimetric Method, referenced in Section 611.611.

Method 3500-Mg B, Magnesium, EDTA Titrimetric Method, referenced in Section 611.611.

Method 4110 B, Determination of Anions by Ion Chromatography, Ion Chromatography with Chemical Suppression of Eluent Conductivity, referenced in Section 611.611.

Method 4500-CN^- C, Cyanide, Total Cyanide after Distillation, referenced in Section 611.611.

Method 4500-CN^- E, Cyanide, Colorimetric Method, referenced in Section 611.611.

Method 4500-CN^- F, Cyanide, Cyanide-Selective Electrode Method, referenced in Section 611.611.

Method 4500-CN^- G, Cyanide, Cyanides Amenable to Chlorination after Distillation, referenced in Section 611.611.

Method 4500-Cl D, Chlorine, Amperometric Titration Method, referenced in Section 611.531.

Method 4500-Cl E, Chlorine, Low-Level Amperometric Titration Method, referenced in Section 611.531.

Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric Method, referenced in Section 611.531.

Method 4500-Cl G, Chlorine, DPD Colorimetric Method, referenced in Section 611.531.

Method 4500-Cl H, Chlorine, Syringaldazine (FACTS) Method, referenced in Section 611.531.

Method 4500-Cl I, Chlorine, Iodometric Electrode Method, referenced in Section 611.531.

Method 4500-ClO_2 C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.

Method 4500-ClO_2 D, Chlorine Dioxide, DPD Method, referenced in Section 611.531.

Method 4500-ClO_2 E, Chlorine Dioxide, Amperometric Method II (Proposed), referenced in Section and 611.531.

Method 4500-F^- B, Fluoride, Preliminary Distillation Step, referenced in Section 611.611.

Method 4500-F^- C, Fluoride, Ion-Selective Electrode Method, referenced in Section 611.611.

Method 4500-F^- D, Fluoride, SPADNS Method, referenced in Section 611.611.

Method 4500-F^- E, Fluoride, Complexone Method, referenced in Section 611.611.

Method 4500-H^+ B, pH Value, Electrometric Method, referenced in Section 611.611.

Method 4500-NO_2^- B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.

Method 4500-NO_3^- D, Nitrogen (Nitrate), Nitrate Electrode

Method, referenced in Section 611.611.

Method 4500-NO_3^- E, Nitrogen (Nitrate), Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-NO_3^- F, Nitrogen (Nitrate), Automated Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-O_3 B, Ozone (Residual) (Proposed), Indigo Colorimetric Method, referenced in Section 611.531.

Method 4500-P E, Phosphorus, Ascorbic Acid Method, referenced in Section 611.611.

Method 4500-P F, Phosphorus, Automated Ascorbic Acid Reduction Method, referenced in Section 611.611.

Method 4500-Si C, Silica, Molybdosilicate Method, referenced in Section 611.611.

Method 4500-Si D, Silica, Heteropoly Blue Method, referenced in Section 611.611.

Method 4500-Si E, Silica, Automated Method for Molybdate-Reactive Silica, referenced in Section 611.611.

Method 5910 B, UV-Absorbing Organic Constituents, Ultraviolet Absorption Method, referenced in Sections 611.381 and 611.382.

Method 6251, Disinfection By-Products: Haloacetic Acids and Trichlorophenol, referenced in Section 611.381.

Method 6610, Carbamate Pesticide Method, referenced in Section 611.645.

Method 6651, Glyphosate Herbicide (Proposed), referenced in Section 611.645.

Method 7110 B, Gross Alpha and Gross Beta Radioactivity, Evaporation Method for Gross Alpha-Beta, referenced in Section 611.720.
Method 7110 C, Gross Alpha and Beta Radioactivity (Total, Suspended, and Dissolved), Coprecipitation Method for Gross Alpha Radioactivity in Drinking Water

(Proposed), referenced in Section 611.720.

Method 7120-B, Gamma-Emitting Radionuclides, Gamma Spectrometric Method, referenced in Section 611.720.

Method 7500-Cs B, Radioactive Cesium, Precipitation Method, referenced in Section 611.720.

Method 7500-^{3}H B, Tritium, Liquid Scintillation Spectrometric Method, referenced in Section 611.720.

Method 7500-I B, Radioactive Iodine, Precipitation Method, referenced in Section 611.720.

Method 7500-I C, Radioactive Iodine, Ion-Exchange Method, referenced in Section 611.720.

Method 7500-I D, Radioactive Iodine, Distillation Method, referenced in Section 611.720.

Method 7500-Ra B, Radium, Precipitation Method, referenced in Section 611.720.

Method 7500-Ra C, Radium, Emanation Method, referenced in Section 611.720.

Method 7500-Sr B, Total Radiactive Strontium and Strontium 90, Precipitation Method, referenced in Section 611.720.

Method 7500-U B, Uranium, Radiochemical Method, referenced in Section 611.720.

Method 7500-U C, Uranium, Isotopic Method, referenced in Section 611.720.

Method 9215 B, Heterotrophic Plate Count, Pour Plate Method, referenced in Section 611.531.

Method 9221 A, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Introduction, referenced in Sections 611.526 and 611.531.

Method 9221 B, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Standard Total Coliform Fermentation Technique, referenced in Sections

611.526 and 611.531.

Method 9221 C, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Estimation of Bacterial Density, referenced in Sections 611.526 and 611.531.

Method 9221 D, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Presence-Absence (P-A) Coliform Test, referenced in Sections 611.526.

Method 9221 E, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Fecal Coliform Procedure, referenced in Sections 611.526 and 611.531.

Method 9221 F, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Escherichia Coli Procedure (Proposed), referenced in Section 611.802.

Method 9222 A, Membrane Filter Technique for Members of the Coliform Group, Introduction, referenced in Sections 611.526 and 611.531.

Method 9222 B, Membrane Filter Technique for Members of the Coliform Group, Standard Total Coliform Membrane Filter Procedure, referenced in Sections 611.526 and 611.531.

Method 9222 C, Membrane Filter Technique for Members of the Coliform Group, Delayed-Incubation Total Coliform Procedure, referenced in Sections 611.526 and 611.531.

Method 9222 D, Membrane Filter Technique for Members of the Coliform Group, Fecal Coliform Membrane Filter Procedure, referenced in Section 611.531.

Method 9222 G, Membrane Filter Technique for Members of the Coliform Group, MF Partition Procedures, referenced in Section 611.526.

Method 9223, Chromogenic Substrate Coliform Test ~~(Proposed)~~ (also referred to as the variations "Autoanalysis Colilert System" and "Colisure Test"), referenced in Sections 611.526, ~~and~~ 611.531, and 611.802.

Method 9230 C, Fecal Streptococcus and Enterococcus

Groups, Membrane Filter Techniques, referenced in Section 611.802.

"Standard Methods for the Examination of Water and Wastewater," 21st Edition, 2005 (referred to as "Standard Methods, 21st ed.").

Method 4500-Cl D, Chlorine, Amperometric Titration Method, referenced in Section 611.381.

Method 4500-Cl E, Chlorine, Low-Level Amperometric Titration Method, referenced in Section 611.381.

Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric Method, referenced in Section 611.381.

Method 4500-Cl G, Chlorine, DPD Colorimetric Method, referenced in Section 611.381.

Method 4500-Cl H, Chlorine, Syringaldazine (FACTS) Method, referenced in Section 611.381.

Method 4500-Cl I, Chlorine, Iodometric Electrode Method, referenced in Section 611.381.

Method 4500-ClO_2 E, Chlorine Dioxide, Amperometric Method II (Proposed), referenced in Section and 611.381.

Method 5310 B, TOC, Combustion-Infrared Method, referenced in Section 611.381.

Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation Method, referenced in Section 611.381.

Method 5310 D, TOC, Wet-Oxidation Method, referenced in Section 611.381.

Method 5910 B, UV-Absorbing Organic Constituents, Ultraviolet Absorption Method, referenced in Sections 611.381 and 611.382.

Method 6251, Disinfection By-Products: Haloacetic Acids and Trichlorophenol, referenced in Section 611.381.

BOARD NOTE: Standard Methods is available online at www.standardmethods.org.

Analytical Technology, Inc. ATI Orion, 529 Main Street, Boston, MA 02129.

Technical Bulletin 601, "Standard Method of Testing for Nitrate in Drinking Water," July, 1994, PN 221890-001 (referred to as "Technical Bulletin 601"), referenced in Section 611.611.

ASTM. American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 (610-832-9585).

ASTM Method D511-93 A and B, "Standard Test Methods for Calcium and Magnesium in Water," "Test Method A—Complexometric Titration" & "Test Method B—Atomic Absorption Spectrophotometric," approved 1993, referenced in Section 611.611.

ASTM Method D515-88 A, "Standard Test Methods for Phosphorus in Water," "Test Method A—Colorimetric Ascorbic Acid Reduction," approved August 19, 1988, referenced in Section 611.611.

ASTM Method D859-88, "Standard Test Method for Silica in Water," approved August 19, 1988, referenced in Section 611.611.

ASTM Method D1067-92 B, "Standard Test Methods for Acidity or Alkalinity in Water," "Test Method B—Electrometric or Color-Change Titration," approved May 15, 1992, referenced in Section 611.611.

ASTM Method D1125-91 A, "Standard Test Methods for Electrical Conductivity and Resistivity of Water," "Test Method A—Field and Routine Laboratory Measurement of Static (Non-Flowing) Samples," approved June 15, 1991, referenced in Section 611.611.

ASTM Method D1179-93 B, "Standard Test Methods for Fluoride in Water," "Test Method B—Ion Selective Electrode," approved 1993, referenced in Section 611.611.

ASTM Method D1253-86, "Standard Test Method for Residual Chlorine in Water," reapproved 1992, referenced in Section 611.381.

ASTM Method D1253-96, "Standard Test Method for Residual Chlorine in Water," reapproved 1996, referenced in Section

611.381.

ASTM Method D1253-03, "Standard Test Method for Residual Chlorine in Water," reapproved 2003, referenced in Section 611.381.

ASTM Method D1293-84, "Standard Test Methods for pH of Water," "Test Method A—Precise Laboratory Measurement" & "Test Method B—Routine or Continuous Measurement," approved October 26, 1984, referenced in Section 611.611.

ASTM Method D1688-90 A or C, "Standard Test Methods for Copper in Water," "Test Method A—Atomic Absorption, Direct" & "Test Method C—Atomic Absorption, Graphite Furnace," approved March 15, 1990, referenced in Section 611.611.

ASTM Method D2036-91 A or B, "Standard Test Methods for Cyanide in Water," "Test Method A—Total Cyanides after Distillation" & "Test Method B—Cyanides Amenable to Chlorination by Difference," approved September 15, 1991, referenced in Section 611.611.

ASTM Method D2459-72, "Standard Test Method for Gamma Spectrometry in Water," approved July 28, 1972, discontinued 1988, referenced in Section 611.720.

ASTM Method D2460-90, "Standard Test Method for Radionuclides of Radium in Water," approved 1990, referenced in Section 611.720.

ASTM Method D2907-91, "Standard Test Methods for Microquantities of Uranium in Water by Fluorometry," "Test Method A—Direct Fluorometric" & "Test Method B—Extraction," approved June 15, 1991, referenced in Section 611.720.

ASTM Method D2972-93 B or C, "Standard Test Methods for Arsenic in Water," "Test Method B—Atomic Absorption, Hydride Generation" & "Test Method C—Atomic Absorption, Graphite Furnace," approved 1993, referenced in Section 611.611.

ASTM Method D3223-91, "Standard Test Method for Total Mercury in Water," approved September 23, 1991, referenced in Section 611.611.

ASTM Method D3454-91, "Standard Test Method for Radium-226

in Water," approved 1991, referenced in Section 611.720.

ASTM Method D3559-96 D, "Standard Test Methods for Lead in Water," "Test Method D—Atomic Absorption, Graphite Furnace," approved August 6, 1990, referenced in Section 611.611.

ASTM Method D3645-97 B, "Standard Test Methods for Beryllium in Water," "Method B—Atomic Absorption, Graphite Furnace," approved 1993, referenced in Section 611.611.

ASTM Method D3649-91, "Standard Test Method for High-Resolution Gamma-Ray Spectrometry of Water," approved 1991, referenced in Section 611.720.

ASTM Method D3697-92, "Standard Test Method for Antimony in Water," approved June 15, 1992, referenced in Section 611.611.

ASTM Method D3859-93 A, "Standard Test Methods for Selenium in Water," "Method A—Atomic Absorption, Hydride Method," approved 1993, referenced in Section 611.611.

ASTM Method D3867-90 A and B, "Standard Test Methods for Nitrite-Nitrate in Water," "Test Method A—Automated Cadmium Reduction" & "Test Method B--Manual Cadmium Reduction," approved January 10, 1990, referenced in Section 611.611.

ASTM Method D3972-90, "Standard Test Method for Isotopic Uranium in Water by Radiochemistry," approved 1990, referenced in Section 611.720.

ASTM Method D4107-91, "Standard Test Method for Tritium in Drinking Water," approved 1991, referenced in Section 611.720.

ASTM Method D4327-91, "Standard Test Method for Anions in Water by Ion Chromatography," approved October 15, 1991, referenced in Section 611.611.

ASTM Method D4785-88, "Standard Test Method for Low-Level Iodine-131 in Water," approved 1988, referenced in Section 611.720.

ASTM Method D5174-91, "Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry," approved 1991, referenced in Section 611.720.

ASTM Method D5673-03, "Standard Test Method for Elements in

Water by Inductively Coupled Plasma—Mass Spectrometry," approved 2003, referenced in Section 611.720.

ASTM Method D6581-00, "Standard Test Method for Bromate, Bromide, Chlorate, and Chlorite in Drinking Water by Chemically Suppressed Ion Chromatography," approved 2000, referenced in Section 611.381.

Bran & Luebbe, 1025 Busch Parkway, Buffalo Grove, IL 60089.

"Fluoride in Water and Wastewater," Industrial Method #129-71W, December 1972 (referred to as "Technicon Methods: Method #129-71W"). See 40 CFR 141.23(k)(1), footnote 11 ~~(2005)~~ (2006), referenced in Section 611.611.

"Fluoride in Water and Wastewater," #380-75WE, February 1976 (referred to as "Technicon Methods: Method #380-75WE"). See 40 CFR 141.23(k)(1), footnote 11 ~~(2005)~~ (2006), referenced in Section 611.611.

Charm Sciences, Inc., 659 Andover St., Lawrence, MA 01843–1032:

"Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Drinking Water," January 9, 1998 (referred to as "E*Colite Test"), referenced in Section 611.802 (also available from USEPA, Water Resource Center).

CPI International, Inc., 5580 Skylane Blvd., Santa Rosa, CA 95403 (800-878-7654/fax: 707-545-7901/Internet address: www.cpiinternational.com).

"Colitag® Product as a Test for Detection and Identification of Coliforms and E. coli Bacteria in Drinking Water and Source Water as Required in National Primary Drinking Water Regulations," August 2001, referenced in Section 611.526.

EMD Chemicals Inc. (an affiliate of Merck KGgA, Darmstadt, Germany), 480 S. Democrat Road, Gibbstown, NJ 08027–1297. (800-222–0342/e-mail: adellenbusch@emscience.com).

"Chromocult Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters," November 2000, Version 1.0, referenced in Section 611.526.

"Readycult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters," November 2000, Version 1.0, referenced in Section 611.526.

ERDA Health and Safety Laboratory, New York, NY.

HASL Procedure Manual, HASL 300, 1973. See 40 CFR 141.25(b)(2) ~~(2005)~~ (2006), referenced in Section 611.720.

Great Lakes Instruments, Inc., 8855 North 55th Street, Milwaukee, WI 53223.

GLI Method 2, "Turbidity," Nov. 2, 1992, referenced in Section 611.531.

The Hach Company, P.O. Box 389, Loveland, CO 80539-0389 (800-227-4224).

"Lead in Drinking Water by Differential Pulse Anodic Stripping Voltammetry," Method 1001, August 1999, referenced in Section 611.611.

"Determination of Turbidity by Laser Nephelometry," January 2000, Revision 2.0 (referred to as "Hach FilterTrak Method 10133"), referenced in Section 611.531.

"Total Coliforms and E. coli Membrane Filtration Method with m-ColiBlue24® Broth," Method No. 10029, Revision 2, August 17, 1999 (referred to as "m-ColiBlue24 Test"), referenced in Section 611.802 (also available from USEPA, Water Resource Center).

IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092 (800-321-0207).

"IDEXX SimPlate TM HPC Test Method for Heterotrophs in Water," November 2000 (referred to as "SimPlate method"), referenced in Section 611.531.

Lachat Instruments, 6645 W. Mill Rd., Milwaukee, WI 53218 (414–358–4200).

"Digestion and distillation of total cyanide in drinking and wastewaters using MICRO DIST and determination of cyanide by flow injection analysis," Revision 2.1, November 30, 2000 (referred to as "QuikChem Method 10-204-00-1-X"), referenced in

Section 611.611.

Millipore Corporation, Technical Services Department, 80 Ashby Road, Milford, MA 01730 (800-654-5476).

Colisure Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia Coli in Drinking Water, February 28, 1994 (referred to as "Colisure Test"), referenced in Section 611.526.

NCRP. National Council on Radiation Protection, 7910 Woodmont Ave., Bethesda, MD (301-657-2652).

"Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," NCRP Report Number 22, June 5, 1959, referenced in Section 611.101.

NSF. National Sanitation Foundation International, 3475 Plymouth Road, PO Box 130140, Ann Arbor, Michigan 48113-0140 (734-769-8010).

NSF Standard 61, section 9, November 1998, referenced in Sections 611.126 and 611.356.

NTIS. National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161 (703-487-4600 or 800-553-6847).

"Interim Radiochemical Methodology for Drinking Water," EPA 600/4-75-008 (revised), March 1976 (referred to as "USEPA Interim Radiochemical Methods"), referenced in Section 611.720. (Pages 1, 4, 6, 9, 13, 16, 24, 29, 34)

"Kelada Automated Test Methods for Total Cyanide, Acid Dissociable Cyanide, And Thiocyanate," Revision 1.2, August 2001, ~~EPA # 821–B–01–009~~ EPA 821/B–01-009 (referred to as "Kelada 01"), referenced in Section 611.611.

"Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," NBS (National Bureau of Standards) Handbook 69, as amended August 1963, U.S. Department of Commerce, referenced in Section 611.330.

Method 100.1, "Analytical Method for Determination of Asbestos Fibers in Water," ~~EPA-600/4-83-043~~ EPA 600/4-83-043,

September 1983, Doc. No. PB83-260471 (referred to as "USEPA Asbestos Methods-100.1"), referenced in Section 611.611.

Method 100.2, "Determination of Asbestos Structures over 10-mm in Length in Drinking Water," ~~EPA-600/4-83-043~~ EPA 600/R-94-134, June 1994, Doc. No. PB94-201902 (referred to as "USEPA Asbestos Methods-100.2"), referenced in Section 611.611.

"Methods for Chemical Analysis of Water and Wastes," March 1983, EPA 600/4-79-020, Doc. No. PB84-128677 (referred to as "USEPA Inorganic Methods"). (Methods 150.1, 150.2, and 245.2, which formerly appeared in this reference, are available from USEPA EMSL.), referenced in Section 611.611.

"Methods for the Determination of Inorganic Substances in Environmental Samples," August 1993, EPA 600/R-93-100, Doc. No. PB94-120821 (referred to as "USEPA Environmental Inorganic Methods"), referenced in Sections 611.381, 611.531, and 611.611. (For methods 180.1, 300.0, 335.4, 353.2, and 365.1.)

"Methods for the Determination of Metals in Environmental Samples," June 1991, EPA 600/4-91-010, Doc. No. PB91-231498 and "Methods for the Determination of Metals in Environmental Samples—Supplement I," May 1994, EPA 600/R-94-111, Doc. No. PB95-125472 (referred to as "USEPA Environmental Metals Methods"), referenced in Sections 611.611, 611.612, and 611.720. (For methods 200.7, 200.8, 200.9, and 245.1.)

"Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1" August 2000, EPA 815/R-00/014, Doc. No. PB2000-106981 (referred to as "USEPA Organic and Inorganic Methods"), referenced in Section 611.381. (For methods 300.1 and 321.8.)

"Methods for the Determination of Organic Compounds in Drinking Water," December 1988, revised July 1991, ~~EPA-600/4-88/039~~ EPA 600/4-88/039, Doc. No. PB91-231480 (referred to as "USEPA Organic Methods"), referenced in Sections 611.645 and 611.648. (For methods 502.2, 505, 507, 508, 508A, 515.1, and 531.1.)

"Methods for the Determination of Organic Compounds in Drinking Water—Supplement I," July 1990, ~~EPA-600/4-90-020~~ EPA 600/4-90/020, Doc. No. PB91-146027 (referred to as "USEPA Organic Methods"), referenced in Section 611.645. (For methods 506, 547, 550, 550.1, and 551.)

"Methods for the Determination of Organic Compounds in Drinking Water—Supplement II," August 1992, ~~EPA-600/R-92-129~~ EPA 600/R-92/129, Doc. No. PB92-207703 (referred to as "USEPA Organic Methods"), referenced in Section 611.645 and 611.381. (For methods 515.2, 524.2, 548.1, 549.1, 552.1, and 555.)

"Methods for the Determination of Organic Compounds in Drinking Water—Supplement III," August 1995, EPA 600/R-95/131, Doc. No. PB95-261616, (referred to as "USEPA Organic Methods"), referenced in Sections 611.381 and 611.645. (For methods 502.2, 524.2, 551.1, and 552.2.)

"Prescribed Procedures for Measurement of Radioactivity in Drinking Water," ~~EPA-600/4-80-032~~ EPA 600/4-80/032, August 1980, (~~document number~~ Doc. No. PB 80-224744) (referred to as "USEPA Radioactivity Methods"), referenced in Section 611.720. (~~Methods~~ For methods 900, 901, 901.1, 902, 903, 903.1, 904, 905, 906, 908, 908.1)

"Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions," H.L. Krieger and S. Gold, EPA-R4-73-014, May 1973, Doc. No. PB222-154/7BA, referenced in Section 611.720.

"Radiochemical Analytical Procedures for Analysis of Environmental Samples," March 1979, Doc. No. EMSL LV 053917 (referred to as "USEPA Radiochemical Analyses"), referenced in Section 611.720. (Pages 1, 19, 33, 65, 87, 92)

"Radiochemistry Procedures Manual," ~~EPA-520/5-84-006~~ EPA 520/5-84-006, ~~December 1987,~~ August 1984, Doc. No. ~~PB-84-215581~~ PB84-215581 (referred to as "USEPA Radiochemistry Methods"), referenced in Section 611.720. (Methods 00-01, 00-02, 00-07, H-02, Ra-03, Ra-04, Ra-05, Sr-04)

"Technical Notes on Drinking Water Methods," ~~EPA-600/R-94-173~~ EPA 600/R-94/173, October 1994, Doc. No. ~~PB-104766~~ PB95-104766 (referred to as "USEPA Technical Notes"), referenced in Sections 611.531, 611.611, and 611.685.

BOARD NOTE: USEPA made the following assertion with regard to this reference at 40 CFR 141.23(k)(1) and 141.24(e) and (n)(11) ~~(2005)~~ (2006): "This document contains other analytical test procedures and approved analytical methods that remain

available for compliance monitoring until July 1, 1996."

"Method 1613: Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS," October 1994, ~~EPA-821/B-94-005~~ EPA 821/B-94/005, Doc. No. 94-104774 (referred to as "Dioxin and Furan Method 1613"), referenced in Section 611.645.

USEPA Method 326.0, Revision 1.0, "Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis," USEPA, June 2002, EPA 815/R-03/007, Doc. No. PB2003-107402 (referred to as "OGWDW Methods, Method 326.0, rev. 1.0"), referenced in Sections 611.381 and 611.382.

BOARD NOTE: Also available from United States Environmental Protection Agency, Office of Ground Water and Drinking Water.

New Jersey Department of Environment, Division of Environmental Quality, Bureau of Radiation and Inorganic Analytical Services, 9 Ewing Street, Trenton, NJ 08625.

"Determination of Radium 228 in Drinking Water," August 1990 (referred to as "New Jersey Radium Method"), referenced in Section 611.720.

New York Department of Health, Radiological Sciences Institute, Center for Laboratories and Research, Empire State Plaza, Albany, NY 12201.

"Determination of Ra-226 and Ra-228 (Ra-02)," January 1980, Revised June 1982 (referred to as "New York Radium Method"), referenced in Section 611.720.

Palintest, Ltd., 21 Kenton Lands Road, P.O. Box 18395, Erlanger, KY (800-835-9629).

"Lead in Drinking Water by Differential Pulse Anodic Stripping Voltammetry," Method 1001, August 1999 (referred to as "Palintest Method 1001"), referenced in Section 611.611.

Syngenta Crop Protection, Inc., 410 Swing Road, Post Office Box 18300, Greensboro, NC 27419 (336-632–6000).

"Atrazine in Drinking Water by Immunoassay," February 2001 (referred to as "Syngenta AG-625"), referenced in Section

611.645.

United States Department of Energy, available at the Environmental Measurements Laboratory, U.S. Department of Energy, 376 Hudson Street, New York, NY 10014-3621.

"EML Procedures Manual," 27th Edition, Volume 1, 1990 (referred to as "USDOE Manual"), referenced in Section 611.720.

United States Environmental Protection Agency, Office of Ground Water and Drinking Water (accessible on-line and available by download from http://www.epa.gov/safewater/methods/).

USEPA Method 317.0, Revision 2.0, "Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis," USEPA, July 2001, EPA 815/B-01/001 (referred to as "OGWDW Methods, Method 317.0, rev. 2.0"), referenced in Section 611.381 and 611.382.

USEPA Method 326.0, Revision 1.0, "Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis," USEPA, June 2002, EPA 815/R-03/007 (referred to as "OGWDW Methods, Method 326.0, rev. 1.0"), referenced in Sections 611.381 and 611.382.

BOARD NOTE: Also available from NTIS.

USEPA Method 327.0, Revision 1.1, "Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry," USEPA, May 2005, EPA 815/R-05/008 (referred to as "OGWDW Methods, Method 327.0, rev. 1.1"), referenced in Section 611.381.

USEPA Method 515.4, Revision 1.0, "Determination of Chlorinated Acids in Drinking Water by Liquid-Liquid Microextraction, Derivatization and Fast Gas Chromatography with Electron Capture Detection," ~~Revision 1.0,~~ April 2000, ~~EPA-815/B-00-001~~ EPA 815/B-00/001 (document file name "met515_4.pdf") (referred to as "OGWDW Methods, Method 515.4, rev. 1.0"), referenced in Section 611.645.

USEPA Method 531.2, Revision 1.0, "Measurement of N-

methylcarbamoyloximes and N-methylcarbamates in Water by Direct Aqueous Injection HPLC with Postcolumn Derivatization," ~~Revision 1.0,~~ September 2001, ~~EPA-815/B-01-002~~ EPA 815/B-01/002 (document file name "met531_2.pdf") (referred to as "OGWDW Methods, Method 531.2, rev. 1.0"), referenced in Section 611.645.

USEPA Method 552.3, Revision 1.0, "Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquidliquid Microextraction, Derivatization, and Gas Chromatography with Electron Capture Detection," USEPA, July 2003, EPA 815/B-03/002 (referred to as "OGWDW Methods, Method 552.3, rev. 1.0"), referenced in Section 611.381.

USEPA Method 1622 (05), "Method 1622: Cryptosporidium in Water by Filtration/IMS/FA," December 2005, EPA 815/R-05/001 (referred to as "USEPA Method 1622 (05)"), referenced in Sections 611.1004 and 611.1007.

USEPA Method 1622 (01), "Method 1622: Cryptosporidium in Water by Filtration/IMS/FA," April 2001, EPA 821/R-01/026, (referred to as "USEPA Method 1622 (01)"), referenced in Section 611.1007.

USEPA Method 1622 (99), "Method 1622: Cryptosporidium in Water by Filtration/IMS/FA," April 1999, EPA 821/R-99/001, (referred to as "USEPA Method 1622 (99)"), referenced in Section 611.1007.

USEPA Method 1623 (05), "Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA," December 2005, EPA 815/R-05/002 (referred to as "USEPA Method 1623 (05)"), referenced in Sections 611.1004 and 611.1007.

USEPA Method 1623 (01), "Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA," April 2001, EPA 821/R-01/025 (referred to as "USEPA Method 1623 (01)"), referenced in Section 611.1007.

USEPA Method 1623 (99), "Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA," January 1999, EPA 821/R-99/006 (referred to as "USEPA Method 1623 (99)"), referenced in Sections 611.1007.

United States Environmental Protection Agency, EMSL, Cincinnati, OH 45268 (513-569-7586).

"Interim Radiochemical Methodology for Drinking Water," ~~EPA-600/4-75-008~~ EPA 600/4-75/008 (revised), March 1976 (referred to as "USEPA Interim Radiochemical Methods"), referenced in Section 611.720. See NTIS.

"Methods for the Determination of Organic Compounds in Drinking Water," December 1988, revised July 1991, ~~EPA-600/4-88/039"~~ EPA 600/4-88/039 (referred to as "USEPA Organic Methods"), referenced in Sections 611.645 and 611.648. (For methods 504.1, 508.1, and 525.2 only.) See NTIS.

"Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions," referenced in Section 611.720. See NTIS.

USEPA, Office of Research and Development, National Exposure Research Laboratory, Microbiological & Chemical Exposure Assessment Research Division (accessible on-line and available by download from http://www.epa.gov/nerlcwww/ordmeth.htm).

USEPA Method 415.3, Revision 1.1, "Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water," February 2005, EPA 600/R–05/055 (referred to as "USEPA NERL Method 415.3 (rev. 1.1)"), referenced in Section 611.381.

USEPA, Science and Technology Branch, Criteria and Standards Division, Office of Drinking Water, Washington, D.C. 20460.

"Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems using Surface Water Sources," October 1989, referenced in Sections 611.111 and 611.212.

USEPA Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue, NW, Washington, DC 20460:

"Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Drinking Water," January 9, 1998 (referred to as "E*Colite Test"), referenced in Section 611.802 (also available from Charm Sciences, Inc.).

"Total Coliforms and E. coli Membrane Filtration Method with m-ColiBlue24® Broth," Method No. 10029, Revision 2, August 17, 1999 (referred to as "m-ColiBlue24 Test"), referenced in Section

611.802 (also available from The Hach Company).

"EPA Method 1600: Enterococci in Water by Membrane Filtration Using membrane-Enterococcus Indoxyl–b–D–Glucoside Agar (mEI)," September 2002, EPA 821/R–02/022 (referred to as "USEPA Method 1600") is an approved variation of Standard Methods, Method 9230 C, "Fecal Streptococcus and Enterococcus Groups, Membrane Filter Techniques" (which has not itself been approved for use by USEPA) (accessible on-line and available by download from http://www.epa.gov/nerlcwww/1600sp02.pdf), referenced in Section 611.802.

"Method 1601: Male-specific (F^{+}) and Somatic Coliphage in Water by Two-step Enrichment Procedure," April 2001, EPA 821/R–01/030 (referred to as "USEPA Method 1601") (accessible on-line and available by download from http://www.epa.gov/nerlcwww/1601ap01.pdf), referenced in Section 611.802.

"Method 1602: Male-specific (F^{+}) and Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure," April 2001, EPA 821/R–01/029 (referred to as "USEPA Method 1602") (accessible on-line and available by download from http://www.epa.gov/nerlcwww/1602ap01.pdf), referenced in Section 611.802.

"Method 1604: Total Coliforms and *Escherichia coli* in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium)," September 2002, EPA 821/R-02/024 (referred to as USEPA Method 1604") (accessible on-line and available by download from http://www.epa.gov/nerlcwww/1604sp02.pdf), referenced in Section 611.802.

USGS. Books and Open-File Reports Section, United States Geological Survey, Federal Center, Box 25286, Denver, CO 80225-0425.

Methods available upon request by method number from "Methods for Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Inorganic and Organic Constituents in Water and Fluvial Sediments," Open File Report 93-125, 1993, or Book 5, Chapter A-1, "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments," 3rd ed., Open-File Report 85-495, 1989, as appropriate (referred to as "USGS Methods").

I-1030-85, referenced in Section 611.611.

I-1601-85, referenced in Section 611.611.

I-1700-85, referenced in Section 611.611.

I-2598-85, referenced in Section 611.611.

I-2601-90, referenced in Section 611.611.

I-2700-85, referenced in Section 611.611.

I-3300-85, referenced in Section 611.611.

Methods available upon request by method number from "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments," Chapter A5 in Book 5 of "Techniques of Water-Resources Investigations of the United States Geological Survey," 1997.

R-1110-76, referenced in Section 611.720.

R-1111-76, referenced in Section 611.720.

R-1120-76, referenced in Section 611.720.

R-1140-76, referenced in Section 611.720.

R-1141-76, referenced in Section 611.720.

R-1142-76, referenced in Section 611.720.

R-1160-76, referenced in Section 611.720.

R-1171-76, referenced in Section 611.720.

R-1180-76, referenced in Section 611.720.

R-1181-76, referenced in Section 611.720.

R-1182-76, referenced in Section 611.720.

Waters Corporation, Technical Services Division, 34 Maple St., Milford, MA 01757 (800-252-4752).

"Waters Test Method for Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography," Method B-1011,

August 1987 (referred to as "Waters Method B-1011"), referenced in Section 611.611.

c) The Board incorporates the following federal regulations by reference:

40 CFR 3.2~~, as added at 70 Fed. Reg. 59848 (Oct. 13, 2005)~~ (2006) (How Does This Part Provide for Electronic Reporting?), referenced in Section 611.105.

40 CFR 3.3~~, as added at 70 Fed. Reg. 59848 (Oct. 13, 2005)~~ (2006) (What Definitions Are Applicable to This Part?), referenced in Section 611.105.

40 CFR 3.10~~, as added at 70 Fed. Reg. 59848 (Oct. 13, 2005)~~ (2006) (What Are the Requirements for Electronic Reporting to EPA?), referenced in Section 611.105.

40 CFR 3.2000~~, as added at 70 Fed. Reg. 59848 (Oct. 13, 2005)~~ (2006) (What Are the Requirements Authorized State, Tribe, and Local Programs' Reporting Systems Must Meet?), referenced in Section 611.105.

40 CFR 136.3(a) (2006), referenced in Section 611.1004.

Appendix B to 40 CFR 136~~ (2005)~~ (2006), referenced in Sections 611.359, 611.609 and 611.646.

d) This Part incorporates no later amendments or editions.

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.160 Composite Correction Program

a) The Agency may require in writing that a PWS conduct a Composite Correction Program (CCP). The CCP must consist of two elements: a Comprehensive Performance Evaluation (CPE) and a Comprehensive Technical Assistance (CTA).

1) A CPE is a thorough review and analysis of a plant's performance-based capabilities and associated administrative, operation, and maintenance practices. It must identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasize approaches that can be implemented without significant capital improvements.

2) For purposes of compliance with Subparts R and X of this Part, the comprehensive performance evaluation must consist of at least the following components: Assessment of plant performance; evaluation of

major unit processes; identification and prioritization of performance limiting factors; assessment of the applicability of comprehensive technical assistance; and preparation of the CPE report.

BOARD NOTE: Subsection (a)(2) of this Section is derived from the third sentence of the definition of "comprehensive performance evaluation" in 40 CFR 141.2 ~~(2002)~~ (2006).

3) A CTA is the performance improvement phase that is implemented if the CPE results indicate improved performance potential. During the CTA phase, the PWS must identify and systematically address plant-specific factors. The CTA is a combination of utilizing CPE results as a basis for followup, implementing process control priority-setting techniques and maintaining long-term involvement to systematically train staff and administrators.

b) A PWS must implement any followup recommendations made in writing by the Agency that result as part of the CCP.

c) A PWS may appeal to the Board, pursuant to Section 40 of the Act [415 ILCS 5/40], any Agency requirement that it conduct a CCP or any followup recommendations made in writing by the Agency that result as part of the CCP, except when a CPE is required under Section 611.745(b)(4).

BOARD NOTE: Derived from 40 CFR 142.16(g) ~~(2002)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.161 Case-by-Case Reduced Subpart Y Monitoring for Wholesale and Consecutive Systems

The Agency may, by a SEP issued pursuant to Section 611.110, reduce the monitoring requirements of Subpart Y of this Part at they apply to a wholesale system or a consecutive system, otherwise than by use of the provisions of Section 611.500 subject to the following limitations:

a) The Agency must consider the following system-specific knowledge in making its determination:

1) The amount and percentage of finished water provided;

2) Whether finished water is provided seasonally, intermittently, or full-time;

3) Improved DBP occurrence information based on IDSE results;

4) Significant changes in the supplier's raw water quality, treatment, or

distribution system after completion of the IDSE; and

4) Such other considerations as would bear on the occurrence of DBP in the distribution system and the ability of the reduced monitoring to detect DBP in the supplier's distribution system.

b) Any reduced monitoring allowed pursuant to this Section must require a minimum of one compliance monitoring location for each supplier.

c) The supplier must report any changes in its raw water quality, treatment, or distribution system after or any other factors that come to its attention after the issuance of a SEP that allows reduced monitoring pursuant to this Section that would bear on the occurrence of DBP in the distribution system and the ability of the reduced monitoring to detect DBP in the supplier's distribution system.

d) The Agency may allow the reduced monitoring provided by this Section only after USEPA has approved the State program revisions involving Subparts W and Y of this Part.

BOARD NOTE: Derived from 40 CFR 142.16(m) and the discussion at 71 Fed. Reg. 388, 430-31 (Jan. 4, 2006). USEPA stated that it will allow the State to elect to authorize reduced monitoring according to a procedure devised by the State. The Board borrowed from the special primacy requirements applicable to the Subpart Y provisions and the accompanying preamble discussion to derive the procedure set forth in this Section.

(Source: Added at 31 Ill. Reg. _____, effective _____)

SUBPART I: DISINFECTANT RESIDUALS, DISINFECTION BYPRODUCTS, AND DISINFECTION BYPRODUCT PRECURSORS

Section 611.310 ~~Old~~ State-Only Maximum Contaminant Levels (MCLs) for Organic Chemical Contaminants

The following are State-only MCLs for organic chemical contaminants. The State-only MCLs for organic chemical contaminants in this Section apply to all CWSs. They are additional State requirements. Compliance with the State-only MCLs in subsections (a) and (b) is calculated pursuant to Subpart O of this Part.

Contaminant	MCL (mg/ℓ)
Aldrin	0.001
DDT	0.05
Dieldrin	0.001
Heptachlor	0.0001
Heptachlor epoxide	0.0001
2,4-D	0.01

BOARD NOTE: Originally derived from 40 CFR 141.12 ~~(1994)~~ (1992), USEPA removed the last entry in subsections (a) and (b) and marked them reserved at 57 Fed. Reg. 31838 (July 17, 1992). USEPA removed all of 40 CFR 141.12 and marked it "reserved" at 71 Fed. Reg. 388 (Jan. 4, 2006). USEPA added another listing of organic MCLs at 40 CFR 141.61 ~~(2002)~~ (2006). Heptachlor, heptachlor epoxide, and 2,4-D appear in both this Section and in Section 611.311, with a different MCL in each Section. The heptachlor, heptachlor epoxide, and 2,4-D MCLs in this Section are Illinois limitations that are more stringent than the federal requirements. However, detection of these contaminants or violation of their federally-derived revised Section 611.311 MCLs imposes more stringent monitoring, reporting, and notice requirements.

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.312 Maximum Contaminant Levels (MCLs) for Disinfection Byproducts (DBPs)

a) Bromate and chlorite. The maximum contaminant levels (MCLs) for ~~disinfection byproducts (DBPs)~~ bromate and chlorite are as follows:

Disinfection byproduct	MCL (mg/ℓ)
~~Total trihalomethanes (TTHM)~~	~~0.080~~
~~Haloacetic acids (five) (HAA5)~~	~~0.060~~
Bromate	0.010
Chlorite	1.0

1) Compliance dates for CWSs and NTNCWSs. A Subpart B system that serves 10,000 or more persons must comply with this subsection (a). A Subpart B that serves fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this subsection (a).

2) USEPA has identified the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for bromate and chlorite identified in this subsection (a):

Disinfection Byproduct	Best Available Technology
Bromate	Control of ozone treatment process to reduce production of bromate.
Chlorite	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

~~b) Compliance dates.~~

~~1) CWSs and NTNCWSs. A Subpart B system supplier serving 10,000 or more persons must comply with this Section beginning January 1, 2002. A Subpart B system supplier serving fewer than 10,000 persons or a supplier using only groundwater not under the direct influence of surface water must comply with this Section beginning January 1, 2004.~~

~~2) A PWS that is installing GAC or membrane technology to comply with this Section may apply to the Board for an extension of up to 24 months past the dates in subsection (b)(1) of this Section, but not beyond December 31, 2003. The Board must grant the extension, and must set a schedule for compliance and may specify any interim measures that the PWS must take. Failure to meet the schedule or interim treatment requirements constitutes a violation of an NPDWR.~~

b) TTHM and HAA5.

1) Subpart I—Running annual average compliance.

A) Compliance dates. A Subpart B system that serves 10,000 or more persons must comply with this paragraph (b)(1) beginning January 1, 2002. A Subpart B system that serves fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water must comply with this subsection (b)(1). All systems must comply with these MCLs until the date specified for Subpart Y compliance in Section 611.980(c).

Disinfection Byproduct	MCL (mg/ℓ)
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060

B) USEPA has identified the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this subsection (b)(1):

Disinfection Byproduct	Best Available Technology
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5)	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant.

2) Subpart Y—Locational running annual average compliance.

A) Compliance dates. The Subpart Y MCLs for TTHM and HAA5 must be complied with as a locational running annual average at each monitoring location beginning the date specified for Subpart Y compliance in Section 611.980(c).

Disinfection Byproduct	MCL (mg/ℓ)
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060

B) USEPA has identified the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this subsection (b)(2) for any supplier that disinfects its source water:

Disinfection Byproduct	Best Available Technology
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5)	Enhanced coagulation or enhanced softening, plus GAC10; or nanofiltration with a molecular weight cutoff ≤1000 Daltons; or GAC20.

C) USEPA has identified the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this subsection (b)(2) for consecutive systems and applies only to the disinfected water that a consecutive system buys or otherwise receives from a wholesale system:

Disinfection Byproduct	Best Available Technology
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5)	Any system that serves 10,000 or more persons: Improved distribution system and storage tank management to reduce residence time, plus the use of chloramines for disinfectant residual maintenance; or Any system that serves

	fewer than 10,000 persons: Improved distribution system and storage tank management to reduce residence time.

~~e) The following are identified as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for disinfection byproducts (DBPs) identified in subsection (a) of this Section.~~

~~Disinfection byproduct (DBP)~~	~~Best available technology (BAT)~~
~~TTHM~~	~~Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant~~
~~HAA5~~	~~Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant~~
~~Bromate~~	~~Control of ozone treatment process to reduce production of bromate~~
~~Chlorite~~	~~Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels~~

BOARD NOTE: Derived from 40 CFR 141.64 ~~(2002)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

DISINFECTANT RESIDUALS, DISINFECTION BYPRODUCTS, AND DISINFECTION BYPRODUCT PRECURSORS

Section 611.381 Analytical Requirements

a) A supplier must use only the analytical methods specified in this Section or their equivalents as approved by the Agency to demonstrate compliance with the requirements of this Subpart I and with the requirements of Subparts W and Y of this Part.

b) Disinfection byproducts (DBPs).

1) A supplier must measure disinfection byproducts (DBPs) by the appropriate of the following methods ~~(as modified by the footnotes) listed in the following table~~:

~~Approved Methods for Disinfection Byproduct (DBP) Compliance Monitoring~~

~~Methodology2~~	~~EPA Method~~	~~Standard Methods, 19th ed., Method~~	~~Byproduct Measured1~~
~~P&T/GC/ElCD & PID~~	~~3502.2~~		~~TTHM~~
~~P&T/GC/MS~~	~~524.2~~		~~TTHM~~
~~LLE/GC/ECD~~	~~551.1~~		~~TTHM~~
~~LLE/GC/ECD~~		~~6251 B~~	~~HAA5~~
~~SPE/GC/ECD~~	~~552.1~~		~~HAA5~~
~~LLE/GC/ECD~~	~~552.2~~		~~HAA5~~
~~Amperometric Titration~~		~~4500-ClO2 E~~	~~Chlorite4~~
~~IC~~	~~300.0~~		~~Chlorite4~~
~~IC~~	~~300.1~~		~~Chlorite4, Bromate~~

~~1 The listed method is approved for measuring specified disinfection byproduct.~~

~~2 P&T = purge and trap; GC = gas chromatography; ElCD = electrolytic conductivity detector; PID = photoionization detector; MS = mass spectrometer; LLE = liquid/liquid extraction; ECD = electron capture detector; SPE = solid phase extractor; IC = ion chromatography.~~

~~3 If TTHMs are the only analytes being measured in the sample, then a PID is not required.~~

~~4 Amperometric titration may be used for routine daily monitoring of chlorite at the entrance to the distribution system, as prescribed in Section 611.382(b)(2)(A)(i). Ion chromatography must be used for routine monthly monitoring of chlorite and additional monitoring of chlorite in the distribution system, as prescribed in Sections 611.382(b)(2)(A)(ii) and (b)(2)(B).~~

A) TTHM:

i) By purge and trap, gas chromatography, electrolytic conductivity detector, and photoionization detector: USEPA Organic Methods, Method 502.2. If TTHMs are the only analytes being measured in the sample, then a photoionization detector is not required.

ii) By purge and trap, gas chromatography, mass spectrometer: USEPA Organic Methods, Method 524.2.

iii) By liquid/liquid extraction, gas chromatography, electron

capture detector: USEPA Organic Methods, Method 551.1.

B) HAA5:

i) By liquid/liquid extraction (diazomethane), gas chromatography, electron capture detector: Standard Methods, 19th or 21st ed., Method 6251 B.

ii) By solid phase extractor (acidic methanol), gas chromatography, electron capture detector: USEPA Organic Methods, Method 552.1.

iii) By liquid/liquid extraction (acidic methanol), gas chromatography, electron capture detector: USEPA Organic Methods, Method 552.2 or 552.3.

C) Bromate:

i) By ion chromatography: USEPA Organic and Inorganic Methods, Method 300.1.

ii) By ion chromatography and post-column reaction: USEPA OGWDW Methods, Method 317.0, rev 2.0, or 326.0, rev. 1.0.

iii) By inductively-coupled plasma/mass spectrometer: USEPA Organic and Inorganic Methods, Method 321.8.

BOARD NOTE: Ion chromatography and post column reaction or inductively-coupled plasma/mass spectrometry must be used for monitoring of bromate for purposes of demonstrating eligibility of reduced monitoring, as prescribed in Section 611.382(b)(3)(B). For inductively-coupled plasma/mass spectrometry, samples must be preserved at the time of sampling with 50 mg ethylenediamine (EDA) per liter of sample, and the samples must be analyzed within 28 days.

D) Chlorite:

i) By amperometric titration: Standard Methods, 19th or 21st ed., Method 4500-ClO_2 E.

ii) By spectrophotometry: USEPA OGWDW Methods, Method 327.0, rev. 1.1.

iii) By ion chromatography: USEPA Environmental Inorganic Methods, Method 300.0; USEPA Organic and Inorganic Methods, Method 300.1; USEPA OGWDW Methods, Method 317.0, rev. 2.0, or 326.0, rev. 1.0; or ASTM Method D6581-00.

BOARD NOTE: Amperometric titration or spectrophotometry may be used for routine daily monitoring of chlorite at the entrance to the distribution system, as prescribed in Section 611.382(b)(2)(A)(i). Ion chromatography must be used for routine monthly monitoring of chlorite and additional monitoring of chlorite in the distribution system, as prescribed in Sections 611.382(b)(2)(A)(ii) and (b)(2)(B).

2) ~~Analysis~~ Analyses under this Section for DBPs must be conducted by laboratories that have received certification by USEPA or the Agency except as specified under subsection (b)(3) of this Section. To receive certification to conduct analyses for the DBP contaminants listed in ~~Section~~ Sections 611.312 and 611.381 and Subparts W and Y of this Part, the laboratory must ~~carry out annual analyses of performance evaluation (PE) samples approved by USEPA or the Agency. In these analyses of PE samples, the laboratory must achieve quantitative results within the acceptance limit on a minimum of 80% of the analytes included in each PE sample. The acceptance limit is defined as the 95% confidence interval calculated around the mean of the PE study data between a maximum and minimum acceptance limit of ±50% and ±15% of the study mean.~~ fulfill the requirements of subsections (b)(2)(A), (b)(2)(C), and (b)(2)(D) of this Section.

A) The laboratory must analyze performance evaluation (PE) samples that are acceptable to USEPA or the Agency at least once during each consecutive 12-month period by each method for which the laboratory desires certification.

B) This subject corresponds with 40 CFR 141.131(b)(2)(ii), which has expired by its own terms. This statement maintains structural consistency with the corrsponding federal rule.

C) The laboratory must achieve quantitative results on the PE sample analyses that are within the following acceptance limits, subject to the conditions of subsections (b)(2)(B)(xii) and (b)(2)(B)(xiii) of this Section:

i) Chloroform (a THM): ±20% of true value;

ii) Bromodichloromethane (a THM): ±20% of true value;

iii) Dibromochloromethane (a THM): ±20% of true value;

iv) Bromoform (a THM): ±20% of true value;

v) Monochloroacetic Acid (an HAA5): ±40% of true value;

vi) Dichloroacetic Acid (an HAA5): ±40% of true value;

vii) Trichloroacetic Acid (an HAA5): ±40% of true value;

viii) Monobromoacetic Acid (an HAA5): ±40% of true value;

ix) Dibromoacetic Acid (an HAA5): ±40% of true value;

x) Chlorite: ±30% of true value; and

xi) Bromate: ±30% of true value.

xii) The laboratory must meet all four of the individual THM acceptance limits set forth in subsections (b)(2)(B)(i) through (b)(2)(B)(iv) of this Section in order to successfully pass a PE sample for TTHM.

xiii) The laboratory must meet the acceptance limits for four out of the five HAA5 compounds set forth in subsections (b)(2)(B)(v) through (b)(2)(B)(ix) of this Section in order to successfully pass a PE sample for HAA5.

D) The laboratory must report quantitative data for concentrations at least as low as the minimum reporting levels (MRLs) listed in subsections (b)(2)(D)(i) through (b)(2)(D)(xi) of this Section, subject to the limitations of subsections (b)(2)(D)(xii) and (b)(2)(D)(xiii) of this Section, for all DBP samples analyzed for compliance with Sections 611.312 and 611.385 and Subparts W and Y of this Part:

i) Chloroform (a THM): 0.0010 mg/ℓ;

ii) Bromodichloromethane (a THM): 0.0010 mg/ℓ;

iii) Dibromochloromethane (a THM): 0.0010 mg/ℓ;

iv) Bromoform (a THM): 0.0010 mg/ℓ;

v) Monochloroacetic Acid (an HAA5): 0.0020 mg/ℓ;

vi) Dichloroacetic Acid (an HAA5): 0.0010 mg/ℓ;

vii) Trichloroacetic Acid (an HAA5): 0.0010 mg/ℓ;

viii) Monobromoacetic Acid (an HAA5): 0.0010 mg/ℓ;

ix) Dibromoacetic Acid (an HAA5): 0.0010 mg/ℓ;

x) Chlorite: 0.020 mg/ℓ, applicable to monitoring as required by Section 611.382(b)(2)(A)(ii) and (b)(2)(B); and

xi) Bromate: 0.0050, or 0.0010 mg/ℓ if the laboratory uses USEPA OGWDW Methods, Method 317.0, rev. 2.0, or 326.0 or USEPA Organic and Inorganic Methods, Method 321.8.

xii) The calibration curve must encompass the regulatory MRL concentration. Data may be reported for concentrations lower than the regulatory MRL as long as the precision and accuracy criteria are met by analyzing an MRL check standard at the lowest reporting limit chosen by the laboratory. The laboratory must verify the accuracy of the calibration curve at the MRL concentration by analyzing an MRL check standard with a concentration less than or equal to 110% of the MRL with each batch of samples. The measured concentration for the MRL check standard must be ±50% of the expected value, if any field sample in the batch has a concentration less than five times the regulatory MRL. Method requirements to analyze higher concentration check standards and meet tighter acceptance criteria for them must be met in addition to the MRL check standard requirement.

xiii) When adding the individual trihalomethane or haloacetic acid concentrations, for the compounds listed in subsections (b)(2)(D)(v) through (b)(2)(D)(ix) of this Section, to calculate the TTHM or HAA5 concentrations, respectively, a zero is used for any analytical result that is less than the MRL concentration for that DBP, unless otherwise specified by the State.

3) A party approved by USEPA or the Agency must measure daily chlorite samples at the entrance to the distribution system.

c) Disinfectant residuals.

1) A supplier must measure residual disinfectant concentrations for free chlorine, combined chlorine (chloramines), and chlorine dioxide by the appropriate of the methods ~~(as modified by the footnotes)~~ listed ~~in the following table~~ in subsections (c)(1)(A) through (c)(1)(D) of this Section, subject to the provisions of subsection (c)(1)(E) of this Section:

~~Approved Methods for Disinfectant Residual Compliance Monitoring~~

~~Methodology~~	~~Standard Methods, 19th ed., Method~~	~~ASTM Method~~	~~Residual Measured1~~
~~Amperometric Titration~~	~~4500-Cl D~~	~~D1253-86~~	~~Free chlorine, Combined chlorine, Total chlorine~~
~~Low Level Amperometric Titration~~	~~4500-Cl E~~		~~Total chlorine~~
~~DPD Ferrous Titrimetric~~	~~4500-Cl F~~		~~Free chlorine, Combined chlorine, Total chlorine~~
~~DPD Colorimetric~~	~~4500-Cl G~~		~~Free chlorine, Combined chlorine, Total chlorine~~
~~Syringaldazine (FACTS)~~	~~4500-Cl H~~		~~Free chlorine~~
~~Iodometric Electrode~~	~~4500-Cl I~~		~~Total chlorine~~
~~DPD~~	~~4500-ClO2 D~~		~~Chlorine dioxide~~
~~Amperometric Method II~~	~~4500-ClO2 E~~		~~Chlorine dioxide~~

~~1 The listed method is approved for measuring specified disinfectant residual.~~

A) Free Chlorine:

i) Amperometric titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl D, or ASTM Method 1253-86, 1253-96, or 1253-03;

ii) DPD ferrous titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl F;

iii) DPD colorimetric using Standard Methods, 19th, 20th, or

21st ed., Method 4500-Cl G; or

iv) Syringaldazine (FACTS) using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl H.

B) Combined Chlorine:

i) Amperometric titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl D, or ASTM Method 1253-86, 1253-96, or 1253-03;

ii) DPD ferrous titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl F; or

iii) DPD colorimetric using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl G.

C) Total Chlorine:

i) Amperometric titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl D, or ASTM Method 1253-86, 1253-96, or 1253-03;

ii) Low-level amperometric titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl F;

iii) DPD ferrous titration using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl F;

iv) DPD colorimetric using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl G; or

v) Iodometric electrode using Standard Methods, 19th, 20th, or 21st ed., Method 4500-Cl I.

D) Chlorine Dioxide:

i) DPD using Standard Methods, 19th, 20th, or 21st ed., Method 4500-ClO_2 D;

ii) Amperometric Method II using Standard Methods, 19th, 20th, or 21st ed., Method 4500-ClO_2 E; or

iii) Lissamine Green spectrophotometric using USEPA OGWDW Method 327.0 (rev. 1.1).

E) The methods listed are approved for measuring the specified disinfectant residual. The supplier may measure free chlorine or total chlorine for demonstrating compliance with the chlorine MRDL and combined chlorine, or total chlorine may be measured for demonstrating compliance with the chloramine MRDL.

2) If approved by the Agency, a supplier may also measure residual disinfectant concentrations for chlorine, chloramines, and chlorine dioxide by using DPD colorimetric test kits.

3) A party approved by USEPA or the Agency must measure residual disinfectant concentration.

d) A supplier required to analyze parameters not included in subsections (b) and (c) of this Section must use the methods listed below. A party approved by USEPA or the Agency must measure the following parameters:

1) Alkalinity. All methods allowed in Section 611.611(a)(21) for measuring alkalinity;

2) Bromide~~. USEPA Method 300.0 or USEPA Method 300.1;~~;

A) USEPA Inorganic Methods, Method 300.0;

B) USEPA Organic and Inorganic Methods, Method 300.1;

C) USEPA OGWDW Methods, Method 317.0 (rev. 2.0) or Method 326.0 (rev. 1.0); or

D) ASTM Method D6581-00.

3) Total Organic Carbon (TOC)~~. Standard Methods, 19th ed., Method 5310 B (High-Temperature Combustion Method), Standard Methods, 19th ed., Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method), or Standard Methods, 19th ed., Method 5310 D (Wet-Oxidation Method). TOC samples may not be filtered prior to analysis. TOC samples must either be analyzed or must be acidified to achieve pH less than 2.0 by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed 24 hours. Acidified TOC samples must be analyzed within 28 days;~~, by any of the methods listed in subsection (d)(3)(A)(i), (d)(3)(A)(ii), (d)(3)(A)(iii), or (d)(3)(B) of this Section, subject to the limitations of subsection (d)(3)(C) of this Section:

A) Standard Methods, 19th, 20th, or 21st ed., using one of the following methods:

i) Method 5310 B (High-Temperature Combustion Method);

ii) Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method); or

iii) Method 5310 D (Wet-Oxidation Method).

B) USEPA NERL Method 415.3 (rev. 1.1).

C) Inorganic carbon must be removed from the samples prior to analysis. TOC samples may not be filtered prior to analysis. TOC samples must be acidified at the time of sample collection to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified TOC samples must be analyzed within 28 days.

4) Specific Ultraviolet Absorbance (SUVA). SUVA is equal to the UV absorption at 254 nm (UV_{254}) (measured in m^{-1}) divided by the dissolved organic carbon (DOC) concentration (measured as mg/ℓ). In order to determine SUVA, it is necessary to separately measure UV_{254} and DOC. When determining SUVA, a supplier must use the methods stipulated in subsection (d)(4)(A) of this Section to measure DOC and the method stipulated in subsection (d)(4)(B) of this Section to measure UV_{254}. SUVA must be determined on water prior to the addition of disinfectants/oxidants by the supplier. DOC and UV_{254} samples used to determine a SUVA value must be taken at the same time and at the same location;

A) Dissolved Organic Carbon (DOC). Standard Methods, 19th ed., 20th ed., or 21st ed., Method 5310 B (High-Temperature Combustion Method), ~~Standard Methods, 19th ed.,~~ Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method), or ~~Standard Methods, 19th ed.,~~ Method 5310 D (Wet-Oxidation Method) or USEPA NERL Method 415.3 (rev. 1.1). Prior to analysis, DOC samples must be filtered through ~~a~~ the 0.45 µm pore-diameter filter as soon as practical after sampling, not to exceed 48 hours. After filtration, DOC samples must be acidified to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified DOC samples must be analyzed within 28 days of sample collection. Inorganic carbon must be removed from the samples prior to analysis. Water passed through the filter prior to filtration of the sample must serve as the filtered blank. This filtered blank must be analyzed using procedures identical to those used for analysis of the samples and must meet the following standards: DOC less than 0.5 mg/ℓ. ~~DOC samples must be filtered through the 0.45 µm pore-diameter filter prior to acidification. DOC samples~~

~~must either be analyzed or must be acidified to achieve pH less than 2.0 by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed 48 hours. Acidified DOC samples must be analyzed within 28 days~~; and

B) Ultraviolet Absorption at 254 nm (UV_{254}). Method 5910 B (Ultraviolet Absorption Method). UV absorption must be measured at 253.7 nm (may be rounded off to 254 nm). Prior to analysis, UV_{254} samples must be filtered through a 0.45 μm pore-diameter filter. The pH of UV_{254} samples may not be adjusted. Samples must be analyzed as soon as practical after sampling, not to exceed 48 hours; and

5) pH. All methods allowed in Section 611.611(a)(17) for measuring pH.

6) Magnesium. All methods allowed in Section 611.611(a) for measuring magnesium.

BOARD NOTE: Derived from 40 CFR 141.131 ~~(2004)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.382 Monitoring Requirements

a) General requirements.

1) A supplier must take all samples during normal operating conditions.

2) A supplier may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required with Agency approval.

3) Failure to monitor in accordance with the monitoring plan required under subsection (f) of this Section is a monitoring violation.

4) Where compliance is based on a running annual average of monthly or quarterly samples or averages and the supplier's failure to monitor makes it impossible to determine compliance with MCLs or MRDLs, this failure to monitor will be treated as a violation for the entire period covered by the annual average.

5) A supplier must use only data collected under the provisions of this Subpart I to qualify for reduced monitoring.

b) Monitoring requirements for disinfection byproducts (DBPs).

1) TTHMs and HAA5.

A) Routine monitoring. A supplier must monitor at the following frequency:

i) A Subpart B system supplier that serves 10,000 or more persons must collect four water samples per quarter per treatment plant. At least 25 percent of all samples collected each quarter must be collected at locations representing maximum residence time. The remaining samples may be taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account the number of persons served, the different sources of water, and the different treatment methods.

ii) A Subpart B system supplier that serves from 500 to 9,999 persons must collect one water sample per quarter per treatment plant. The samples must be collected from locations representing maximum residence time.

iii) A Subpart B system supplier that serves fewer than 500 persons must collect one sample per year per treatment plant during month of warmest water temperature. The samples must be collected from locations representing maximum residence time. If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the supplier must increase the monitoring frequency to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the supplier meets the standards in subsection (b)(1)(D) of this Section.

iv) A supplier that uses only groundwater not under direct influence of surface water, which uses chemical disinfectant, and which serves 10,000 or more persons must collect one water sample per quarter per treatment plant. The samples must be collected from locations representing maximum residence time.

v) A supplier that uses only groundwater not under direct influence of surface water, which uses chemical disinfectant, and which serves fewer than 10,000 persons must collect one sample per year per treatment plant during month of warmest water temperature. The samples must be

collected from locations representing maximum residence time. If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, the supplier must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the supplier meets standards in subsection (b)(1)(D) of this Section.

BOARD NOTE: If a supplier elects to sample more frequently than the minimum required, at least 25 percent of all samples collected each quarter (including those taken in excess of the required frequency) must be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples must be taken at locations representative of at least average residence time in the distribution system. For a supplier using groundwater not under the direct influence of surface water, multiple wells drawing water from a single aquifer may be considered one treatment plant for determining the minimum number of samples required, with Agency approval.

B) A supplier may reduce monitoring, except as otherwise provided, in accordance with the following:

i) A Subpart B system supplier that serves 10,000 or more persons and which has a source water annual average TOC level, before any treatment, of less than or equal to 4.0 mg/ℓ may reduce monitoring if it has monitored for at least one year and its TTHM annual average is less than or equal to 0.040 mg/ℓ and HAA5 annual average is less than or equal to 0.030 mg/ℓ. The reduced monitoring allowed is a minimum of one sample per treatment plant per quarter at a distribution system location reflecting maximum residence time.

ii) A Subpart B system supplier that serves from 500 to 9,999 persons and which has a source water annual average TOC level, before any treatment, of less than or equal to 4.0 mg/ℓ may reduce monitoring if it has monitored at least one year and its TTHM annual average is less than or equal to 0.040 mg/ℓ and HAA5 annual average is less than or equal to 0.030 mg/ℓ. The reduced monitoring allowed is a minimum of one sample per treatment plant per year at a distribution system location reflecting maximum residence time during month of warmest water temperature.

BOARD NOTE: Any Subpart B system supplier ~~serving~~

that serves fewer than 500 persons may not reduce its monitoring to less than one sample per treatment plant per year.

iii) A supplier using only groundwater not under direct influence of surface water using chemical disinfectant and ~~serving~~ that serves 10,000 or more persons may reduce monitoring if it has monitored at least one year and its TTHM annual average is less than or equal to 0.040 mg/ℓ and HAA5 annual average is less than or equal to 0.030 mg/ℓ. The reduced monitoring allowed is a minimum of one sample per treatment plant per year at a distribution system location reflecting maximum residence time during month of warmest water temperature.

iv) A supplier using only groundwater not under direct influence of surface water ~~using~~ that uses chemical disinfectant and ~~serving~~ which serves fewer than 10,000 persons may reduce monitoring if it has monitored at least one year and its TTHM annual average is less than or equal to 0.040 mg/ℓ and HAA5 annual average is less than or equal to 0.030 mg/ℓ for two consecutive years or TTHM annual average is less than or equal to 0.020 mg/ℓ and HAA5 annual average is less than or equal to 0.015 mg/ℓ for one year. The reduced monitoring allowed is a minimum of one sample per treatment plant per three year monitoring cycle at a distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following the quarter in which the supplier qualifies for reduced monitoring.

C) Monitoring requirements for source water TOC. In order to qualify for reduced monitoring for TTHM and HAA5 under subsection (b)(1)(B) of this Section, a Subpart B system supplier not monitoring under the provisions of subsection (d) of this Section must take monthly TOC samples every 30 days at a location prior to any treatment, beginning no later than April 1, 2008. In addition to meeting other criteria for reduced monitoring in subsection (b)(1)(B) of this Section, the source water TOC running annual average must be ≤4.0 mg/ℓ (based on the most recent four quarters of monitoring) on a continuing basis at each treatment plant to reduce or remain on reduced monitoring for TTHM and HAA5. Once qualified for reduced monitoring for TTHM and HAA5 under subsection (b)(1)(B) of this Section, a system may reduce source water TOC monitoring to quarterly

TOC samples taken every 90 days at a location prior to any treatment.

~~C~~D) A Subpart B system supplier on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year (for a supplier that must monitor quarterly) or the result of the sample (for a supplier that must monitor no more frequently than annually) is no more than 0.060 mg/ℓ and 0.045 mg/ℓ for TTHMs and HAA5, respectively. A supplier that does not meet these levels must resume monitoring at the frequency identified in subsection (b)(1)(A) of this Section (minimum monitoring frequency column) in the quarter immediately following the monitoring period in which the supplier exceeds 0.060 mg/ℓ for TTHMs or 0.045 mg/ℓ for HAA5. For a supplier ~~using~~ that uses only groundwater not under the direct influence of surface water and ~~serving~~ which serves fewer than 10,000 persons, if either the TTHM annual average is greater than 0.080 mg/ℓ or the HAA5 annual average is greater than 0.060 mg/ℓ, the supplier must go to increased monitoring identified in subsection (b)(1)(A) of this Section (sample location column) in the quarter immediately following the monitoring period in which the supplier exceeds 0.080 mg/ℓ for TTHMs or 0.060 mg/ℓ for HAA5.

~~D) A supplier on increased monitoring may return to routine monitoring if, after at least one year of monitoring, its TTHM annual average is less than or equal to 0.060 mg/ℓ and its HAA5 annual average is less than or equal to 0.045 mg/ℓ.~~

E) The Agency may return a supplier to routine monitoring.

2) Chlorite. A CWS or NTNCWS supplier using chlorine dioxide, for disinfection or oxidation, must conduct monitoring for chlorite.

A) Routine monitoring.

i) Daily monitoring. A supplier must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the supplier must take additional samples in the distribution system the following day at the locations required by subsection (b)(2)(B) of this Section, in addition to the sample required at the entrance to the distribution system.

ii) Monthly monitoring. A supplier must take a three-sample set each month in the distribution system. The supplier must take one sample at each of the following locations: near the

first customer, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. Any additional routine sampling must be conducted in the same manner (as three-sample sets, at the specified locations). The supplier may use the results of additional monitoring conducted under subsection (b)(2)(B) of this Section to meet the requirement for monitoring in this subsection (b)(2)(A)(ii).

B) Additional monitoring. On each day following a routine sample monitoring result that exceeds the chlorite MCL at the entrance to the distribution system, the supplier must take three chlorite distribution system samples at the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

C) Reduced monitoring.

i) Chlorite monitoring at the entrance to the distribution system required by subsection (b)(2)(A)(i) of this Section may not be reduced.

ii) Chlorite monitoring in the distribution system required by subsection (b)(2)(A)(ii) of this Section may be reduced to one three-sample set per quarter after one year of monitoring where no individual chlorite sample taken in the distribution system under subsection (b)(2)(A)(ii) of this Section has exceeded the chlorite MCL and the supplier has not been required to conduct monitoring under subsection (b)(2)(B) of this Section. The supplier may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system under subsection (b)(2)(A)(ii) of this Section exceeds the chlorite MCL or the supplier is required to conduct monitoring under subsection (b)(2)(B) of this Section, at which time the supplier must revert to routine monitoring.

3) Bromate.

A) Routine monitoring. A CWS or NTNCWS supplier using ozone, for disinfection or oxidation, must take one sample per month for each treatment plant in the system using ozone. A supplier must take samples monthly at the entrance to the distribution system while the ozonation system is operating under normal conditions.

B) Reduced monitoring.

i) ~~A~~Until March 31, 2009, a supplier required to analyze for bromate may reduce monitoring from monthly to ~~once per quarter~~ quarterly, if the supplier demonstrates that the average source water bromide concentration is less than 0.05 mg/ℓ based ~~upon~~ on representative monthly bromide measurements for one year. The supplier may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/ℓ based ~~upon~~ on representative monthly measurements. If the running annual average source water bromide concentration is equal to or greater than 0.05 mg/ℓ, the supplier must resume routine monitoring required by subsection (b)(3)(A) of this Section in the following month.

ii) Beginning April 1, 2009, a Subpart B system supplier may no longer use the provisions of subsection (b)(3)(B)(i) of this Section to qualify for reduced monitoring. A supplier required to analyze for bromate may reduce monitoring from monthly to quarterly, if the supplier's running annual average bromate concentration is ≤0.0025 mg/ℓ based on monthly bromate measurements under subsection (b)(3)(A) of this Section for the most recent four quarters, with samples analyzed using USEPA OGWDW Methods, Method 317.0 (rev. 2.0) or Method 326.0 (rev. 1.0) or USEPA Organic and Inorganic Methods, Method 321.8. If a supplier has qualified for reduced bromate monitoring under subsection (b)(3)(B)(i) of this Section, that supplier may remain on reduced monitoring as long as the running annual average of quarterly bromate samples δ0.0025 mg/ℓ based on samples analyzed using USEPA OGWDW Methods, Method 317.0 (rev. 2.0) or Method 326.0 (rev. 1.0) or USEPA Organic and Inorganic Methods, Method 321.8. If the running annual average bromate concentration is >0.0025 mg/ℓ, the supplier must resume routine monitoring required by subsection (b)(3)(A) of this Section.

c) Monitoring requirements for disinfectant residuals.

1) Chlorine and chloramines.

A) Routine monitoring. A CWS or NTNCWS supplier that uses

chlorine or chloramines must measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in Section 611.521. A Subpart B system supplier may use the results of residual disinfectant concentration sampling conducted under Section 611.532 for unfiltered systems or Section 611.533 for systems that filter, in lieu of taking separate samples.

B) Reduced monitoring. Monitoring may not be reduced.

2) Chlorine dioxide.

A) Routine monitoring. A CWS, an NTNCWS, or a transient non-CWS supplier that uses chlorine dioxide for disinfection or oxidation must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the supplier must take samples in the distribution system the following day at the locations required by subsection (c)(2)(B) of this Section, in addition to the sample required at the entrance to the distribution system.

B) Additional monitoring. On each day following a routine sample monitoring result that exceeds the MRDL, the supplier must take three chlorine dioxide distribution system samples. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system (i.e., no booster chlorination), the supplier must take three samples as close to the first customer as possible, at intervals of at least six hours. If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system (i.e., booster chlorination), the supplier must take one sample at each of the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

C) Reduced monitoring. Monitoring may not be reduced.

d) Monitoring requirements for disinfection byproduct (DBP) precursors.

1) Routine monitoring. A Subpart B system supplier that uses conventional filtration treatment (as defined in Section 611.101) must monitor each treatment plant for TOC not past the point of combined filter effluent turbidity monitoring and representative of the treated water. A supplier

required to monitor under this subsection (d)(1) must also monitor for TOC in the source water prior to any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as paired samples. At the same time as the source water sample is taken, a system must monitor for alkalinity in the source water prior to any treatment. A supplier must take one paired sample and one source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

2) Reduced monitoring. A Subpart B system supplier with an average treated water TOC of less than 2.0 mg/ℓ for two consecutive years, or less than 1.0 mg/ℓ for one year, may reduce monitoring for both TOC and alkalinity to one paired sample and one source water alkalinity sample per plant per quarter. The supplier must revert to routine monitoring in the month following the quarter when the annual average treated water TOC greater than or equal to 2.0 mg/ℓ.

e) Bromide. A supplier required to analyze for bromate may reduce bromate monitoring from monthly to once per quarter, if the supplier demonstrates that the average source water bromide concentration is less than 0.05 mg/ℓ based upon representative monthly measurements for one year. The supplier must continue bromide monitoring to remain on reduced bromate monitoring.

f) Monitoring plans. Each supplier required to monitor under this Subpart I must develop and implement a monitoring plan. The supplier must maintain the plan and make it available for inspection by the Agency and the general public no later than 30 days following the applicable compliance dates in Section 611.380(b). A Subpart B system supplier ~~serving~~ that serves more than 3,300 persons must submit a copy of the monitoring plan to the Agency no later than the date of the first report required under Section 611.384. After review, the Agency may require changes in any plan elements. The plan must include at least the following elements:

1) Specific locations and schedules for collecting samples for any parameters included in this Subpart I;

2) How the supplier will calculate compliance with MCLs, MRDLs, and treatment techniques; and

3) If approved for monitoring as a consecutive system, or if providing water to a consecutive system, under the provisions of Section 611.500, the sampling plan must reflect the entire distribution system.

BOARD NOTE: Derived from 40 CFR 141.132 ~~(2003)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.383 Compliance Requirements

a) General requirements.

1) Where compliance is based on a running annual average of monthly or quarterly samples or averages and the supplier fails to monitor for TTHM, HAA5, or bromate, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average. Where compliance is based on a running annual average of monthly or quarterly samples or averages and the supplier's failure to monitor makes it impossible to determine compliance with the MRDL for chlorine or chloramines, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

2) All samples taken and analyzed under the provisions of this Subpart I must be included in determining compliance, even if that number is greater than the minimum required.

3) If, during the first year of monitoring under Section 611.382, any individual quarter's average will cause the running annual average of that supplier to exceed the MCL for total trihalomethanes, haloacetic acids (five), or bromate or the MRDL for chlorine or chloramine, the supplier is out of compliance at the end of that quarter.

b) Disinfection byproducts (DBPs).

1) TTHMs and HAA5.

A) For a supplier monitoring quarterly, compliance with MCLs in Section 611.312 must be based on a running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected by the supplier as prescribed by Section 611.382(b)(1).

B) For a supplier monitoring less frequently than quarterly, the supplier demonstrates MCL compliance if the average of samples taken that year under the provisions of Section 611.382(b)(1) does not exceed the MCLs in Section 611.312. If the average of these samples exceeds the MCL, the supplier must increase monitoring to once per quarter per treatment plant, and such a system is not in violation of the MCL until it has completed one year of quarterly monitoring, unless the result of fewer than four quarters of monitoring will cause the running annual average to exceed the MCL, in which case the supplier is in violation at the end of that quarter. A supplier required to increase to quarterly monitoring must calculate compliance by including the sample that triggered the increased

monitoring plus the following three quarters of monitoring.

C) If the running annual arithmetic average of quarterly averages covering any consecutive four-quarter period exceeds the MCL, the supplier is in violation of the MCL and must notify the public pursuant to Subpart V of this Part in addition to reporting to the Agency pursuant to Section 611.384.

D) If a PWS fails to complete four consecutive quarter's monitoring, compliance with the MCL for the last four-quarter compliance period must be based on an average of the available data.

2) Bromate. Compliance must be based on a running annual arithmetic average, computed quarterly, of monthly samples (or, for months in which the supplier takes more than one sample, the average of all samples taken during the month) collected by the supplier, as prescribed by Section 611.382(b)(3). If the average of samples covering any consecutive four-quarter period exceeds the MCL, the supplier is in violation of the MCL and must notify the public pursuant to Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384. If a PWS supplier fails to complete 12 consecutive months' monitoring, compliance with the MCL for the last four-quarter compliance period must be based on an average of the available data.

3) Chlorite. Compliance must be based on an arithmetic average of each three sample set taken in the distribution system as prescribed by Section 611.382(b)(2)(A)(ii) and Section 611.382(b)(2)(B). If the arithmetic average of any three sample set exceeds the MCL, the supplier is in violation of the MCL and must notify the public pursuant to Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384.

c) Disinfectant residuals.

1) Chlorine and chloramines.

A) Compliance must be based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the supplier under Section 611.382(c)(1). If the average of quarterly averages covering any consecutive four-quarter period exceeds the MRDL, the supplier is in violation of the MRDL and must notify the public pursuant to Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384.

B) In cases where a supplier switches between the use of chlorine and chloramines for residual disinfection during the year, compliance must be determined by including together all monitoring results of

both chlorine and chloramines in calculating compliance. Reports submitted pursuant to Section 611.384 must clearly indicate that residual disinfectant was analyzed for each sample.

2) Chlorine dioxide.

A) Acute violations. Compliance must be based on consecutive daily samples collected by the supplier under Section 611.382(c)(2). If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one (or more) of the three samples taken in the distribution system exceeds the MRDL, the supplier is in violation of the MRDL and must take immediate corrective action to lower the level of chlorine dioxide below the MRDL and must notify the public pursuant to the procedures for acute health risks in Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384. Failure to take samples in the distribution system the day following an exceedence of the chlorine dioxide MRDL at the entrance to the distribution system will also be considered an MRDL violation and the supplier must notify the public of the violation in accordance with the provisions for acute violations under Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384.

B) Nonacute violations. Compliance must be based on consecutive daily samples collected by the supplier under Section 611.382(c)(2). If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL, the supplier is in violation of the MRDL and must take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling and must notify the public pursuant to the procedures for nonacute health risks in Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384. Failure to monitor at the entrance to the distribution system the day following an exceedence of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the supplier must notify the public of the violation in accordance with the provisions for nonacute violations under Subpart V of this Part, in addition to reporting to the Agency pursuant to Section 611.384.

d) Disinfection byproduct (DBP) precursors. Compliance must be determined as specified by Section 611.385(c). A supplier may begin monitoring to determine whether Step 1 TOC removals can be met 12 months prior to the compliance date for the supplier. This monitoring is not required and failure to monitor during this period is not a violation. However, any supplier that does not monitor during this period, and then determines in the first 12 months after the compliance date that it is

not able to meet the Step 1 requirements in Section 611.141(b)(2) and must therefore apply for alternate minimum TOC removal (Step 2) requirements, is not eligible for retroactive approval of alternate minimum TOC removal (Step 2) requirements as allowed pursuant to Section 611.385(b)(3) and is in violation of an NPDWR. A supplier may apply for alternate minimum TOC removal (Step 2) requirements any time after the compliance date. For a supplier required to meet Step 1 TOC removals, if the value calculated under Section 611.385(c)(1)(D) is less than 1.00, the supplier is in violation of the treatment technique requirements and must notify the public pursuant to Subpart V of this Part, in addition to reporting to the Agency pursuant to ~~Section 611.384~~ Subpart V of this Part.

BOARD NOTE: Derived from 40 CFR 141.133 ~~(2003)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.385 Treatment Technique for Control of Disinfection Byproduct (DBP) Precursors

a) Applicability.

1) A Subpart B system supplier using conventional filtration treatment (as defined in Section 611.101) must operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in subsection (b) of this Section unless the supplier meets at least one of the alternative compliance standards listed in subsection (a)(2) or (a)(3) of this Section.

2) Alternative compliance standards for enhanced coagulation and enhanced softening systems. A Subpart B system supplier using conventional filtration treatment may use the alternative compliance standards in subsections (a)(2)(A) through (a)(2)(F) of this Section to comply with this Section in lieu of complying with subsection (b). A supplier must comply with monitoring requirements in Section 611.382(d) of this Part.

A) The supplier's source water TOC level, measured according to Section 611.381(d)(3), is less than 2.0 mg/ℓ, calculated quarterly as a running annual average.

B) The supplier's treated water TOC level, measured according to Section 611.381(d)(3), is less than 2.0 mg/ℓ, calculated quarterly as a running annual average.

C) The supplier's source water TOC level, measured according to Section 611.381(d)(3), is less than 4.0 mg/ℓ, calculated quarterly as a running annual average; the source water alkalinity, measured according to Section 611.381(d)(1), is greater than 60 mg/ℓ (as

$CaCO_3$), calculated quarterly as a running annual average; and either the TTHM and HAA5 running annual averages are no greater than 0.040 mg/ℓ and 0.030 mg/ℓ, respectively; or prior to the effective date for compliance in Section 611.380(b), the system has made a clear and irrevocable financial commitment, not later than the effective date for compliance in Section 611.380(b), to use technologies that will limit the levels of TTHMs and HAA5 to no more than 0.040 mg/ℓ and 0.030 mg/ℓ, respectively. A supplier must submit evidence of a clear and irrevocable financial commitment, in addition to a schedule containing milestones and periodic progress reports for installation and operation of appropriate technologies, to the Agency for approval not later than the effective date for compliance in Section 611.380(b). These technologies must be installed and operating not later than June 30, 2005. Failure to install and operate these technologies by the date in the approved schedule will constitute a violation of an NPDWR.

D) The TTHM and HAA5 running annual averages are no greater than 0.040 mg/ℓ and 0.030 mg/ℓ, respectively, and the supplier uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

E) The supplier's source water SUVA, prior to any treatment and measured monthly according to Section 611.381(d)(4), is less than or equal to 2.0 ℓ/mg-m, calculated quarterly as a running annual average.

F) The supplier's finished water SUVA, measured monthly according to Section 611.381(d)(4), is less than or equal to 2.0 ℓ/mg-m, calculated quarterly as a running annual average.

3) Additional alternative compliance standards for softening systems. A supplier practicing enhanced softening that cannot achieve the TOC removals required by subsection (b)(2) of this Section may use the alternative compliance standards in subsections (a)(3)(A) and (a)(3)(B) of this Section in lieu of complying with subsection (b) of this Section. A supplier must comply with monitoring requirements in Section 611.382(d). The alternative compliance standards are as follows:

A) The supplier may undertake softening that results in lowering the treated water alkalinity to less than 60 mg/ℓ (as $CaCO_3$), measured monthly according to Section 611.381(d)(1) and calculated quarterly as a running annual average; and

B) The supplier may undertake softening that results in removing at least 10 mg/ℓ of magnesium hardness (as $CaCO_3$), measured

monthly according to Section 611.381(d)(6) and calculated quarterly as ~~an annual~~ a running annual average.

b) Enhanced coagulation and enhanced softening performance requirements.

1) A supplier must achieve the percent reduction of TOC specified in subsection (b)(2) of this Section between the source water and the combined filter effluent, unless the Agency approves a supplier's request for alternate minimum TOC removal (Step 2) requirements under subsection (b)(3) of this Section.

2) Required Step 1 TOC reductions, indicated in the following table, are based upon specified source water parameters measured in accordance with Section 611.381(d). A supplier practicing softening must meet the Step 1 TOC reductions in the far-right column (source water alkalinity greater than 120 mg/ℓ) for the following specified source water TOC:

Step 1 Required Removal of TOC by Enhanced Coagulation and Enhanced Softening for a Subpart B System Supplier Using Conventional Treatment[1,2]

Source-water TOC, mg/ℓ	Source-water alkalinity, mg/ℓ as $CaCO_3$		
	0-60	>60-120	>120[3]
>2.0-4.0	35.0%	25.0%	15.0%
>4.0-8.0	45.0%	35.0%	25.0%
>8.0	50.0%	40.0%	30.0%

[1] A supplier meeting at least one of the conditions in subsections (a)(2)(A) through (a)(2)(F) of this Section are not required to operate with enhanced coagulation.

[2] A softening system that meets one of the alternative compliance standards in subsection (a)(3) of this Section is not required to operate with enhanced softening.

[3] A supplier that practices softening must meet the TOC removal requirements in this column.

3) A Subpart B conventional treatment system supplier that cannot achieve the Step 1 TOC removals required by subsection (b)(2) of this Section due to water quality parameters or operational constraints must apply to the Agency, within three months after failure to achieve the TOC removals required by subsection (b)(2) of this Section, for approval of alternative minimum TOC (Step 2) removal requirements submitted by the supplier. If

the PWS cannot achieve the Step 1 TOC removal requirement due to water quality parameters or operational constraints, the Agency must approve the use of the Step 2 TOC removal requirement. If the Agency approves the alternative minimum TOC removal (Step 2) requirements, the Agency may make those requirements retroactive for the purposes of determining compliance. Until the Agency approves the alternative minimum TOC removal (Step 2) requirements, the supplier must meet the Step 1 TOC removals contained in subsection (b)(2) of this Section.

4) Alternative minimum TOC removal (Step 2) requirements. An application made to the Agency by an enhanced coagulation system supplier for approval of alternative minimum TOC removal (Step 2) requirements under subsection (b)(3) of this Section must include, at a minimum, results of bench- or pilot-scale testing conducted under subsection (b)(4)(B) of this Section. The submitted bench- or pilot-scale testing must be used to determine the alternative enhanced coagulation level.

A) For the purposes of this Subpart I, "alternative enhanced coagulation level" is defined as coagulation at a coagulant dose and pH, as determined by the method described in subsections (b)(4)(A) through (E) of this Section, such that an incremental addition of 10 mg/ℓ of alum (or equivalent amount of ferric salt) results in a TOC removal of less than or equal to 0.3 mg/ℓ. The percent removal of TOC at this point on the "TOC removal versus coagulant dose" curve is then defined as the minimum TOC removal required for the supplier. Once approved by the Agency, this minimum requirement supersedes the minimum TOC removal required by the table in subsection (b)(2) of this Section. This requirement will be effective until such time as the Agency approves a new value based on the results of a new bench- and pilot-scale test. Failure to achieve alternative minimum TOC removal levels is a violation of National Primary Drinking Water Regulations.

B) Bench- or pilot-scale testing of enhanced coagulation must be conducted by using representative water samples and adding 10 mg/ℓ increments of alum (or equivalent amounts of ferric salt) until the pH is reduced to a level less than or equal to the enhanced coagulation Step 2 target pH shown in the following table:

Enhanced Coagulation Step 2 Target pH

Alkalinity (mg/ℓ as $CaCO_3$)	Target pH
0-60	5.5
>60-120	6.3
>120-240	7.0

>240	7.5

C) For waters with alkalinities of less than 60 mg/ℓ for which addition of small amounts of alum or equivalent addition of iron coagulant drives the pH below 5.5 before significant TOC removal occurs, the supplier must add necessary chemicals to maintain the pH between 5.3 and 5.7 in samples until the TOC removal of 0.3 mg/ℓ per 10 mg/ℓ alum added (or equivalent addition of iron coagulant) is reached.

D) The supplier may operate at any coagulant dose or pH necessary (consistent with other NPDWRs) to achieve the minimum TOC percent removal approved under subsection (b)(3) of this Section.

E) If the TOC removal is consistently less than 0.3 mg/ℓ of TOC per 10 mg/ℓ of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the water is deemed to contain TOC not amenable to enhanced coagulation. The supplier may then apply to the Agency for a waiver of enhanced coagulation requirements. If the TOC removal is consistently less than 0.3 mg/ℓ of TOC per 10 mg/ℓ of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the Agency must grant the waiver of enhanced coagulation requirements.

c) Compliance calculations.

1) A Subpart B system supplier other than those identified in subsection (a)(2) or (a)(3) of this Section must comply with requirements contained in subsection (b)(2) or (b)(3) of this Section. A supplier must calculate compliance quarterly, beginning after the supplier has collected 12 months of data, by determining an annual average using the following method:

A) Determine actual monthly TOC percent removal, equal to the following:

$$\left(1-\left(\frac{\text{treated water TOC}}{\text{source water TOC}}\right)\right)\times 100$$

B) Determine the required monthly TOC percent removal.

C) Divide the value in subsection (c)(1)(A) of this Section by the value in subsection (c)(1)(B) of this Section.

D) Add together the results of subsection (c)(1)(C) of this Section for the last 12 months and divide by 12.

E) If the value calculated in subsection (c)(1)(D) of this Section is less than 1.00, the supplier is not in compliance with the TOC percent removal requirements.

2) A supplier may use the provisions in subsections (c)(2)(A) through (c)(2)(E) of this Section in lieu of the calculations in subsection (c)(1)(A) through (c)(1)(E) of this Section to determine compliance with TOC percent removal requirements.

A) In any month that the supplier's treated or source water TOC level, measured according to Section 611.381(d)(3), is less than 2.0 mg/ℓ, the supplier may assign a monthly value of 1.0 (in lieu of the value calculated in subsection (c)(1)(C) of this Section) when calculating compliance under the provisions of subsection (c)(1) of this Section.

B) In any month that a system practicing softening removes at least 10 mg/ℓ of magnesium hardness (as $CaCO_3$), the supplier may assign a monthly value of 1.0 (in lieu of the value calculated in subsection (c)(1)(C) of this Section) when calculating compliance under the provisions of subsection (c)(1) of this Section.

C) In any month that the system's source water SUVA, prior to any treatment and measured according to Section 611.381(d)(4), is less than or equal to 2.0 ℓ/mg-m, the supplier may assign a monthly value of 1.0 (in lieu of the value calculated in subsection (c)(1)(C) of this Section) when calculating compliance under the provisions of subsection (c)(1) of this Section.

D) In any month that the system's finished water SUVA, measured according to Section 611.381(d)(4), is less than or equal to 2.0 ℓ/mg-m, the supplier may assign a monthly value of 1.0 (in lieu of the value calculated in subsection (c)(1)(C) of this Section) when calculating compliance under the provisions of subsection (c)(1) of this Section.

E) In any month that a system practicing enhanced softening lowers alkalinity below 60 mg/ℓ (as $CaCO_3$), the supplier may assign a monthly value of 1.0 (in lieu of the value calculated in subsection (c)(1)(C) of this Section) when calculating compliance under the provisions of subsection (c)(1) of this Section.

3) A Subpart B system supplier using conventional treatment may also comply with the requirements of this Section by meeting the standards in subsection (a)(2) or (a)(3) of this Section.

d) Treatment technique requirements for disinfection byproduct (DBP) precursors. Treatment techniques to control the level of disinfection byproduct (DBP) precursors in drinking water treatment and distribution systems, for a Subpart B system supplier using conventional treatment, are enhanced coagulation or enhanced softening.

BOARD NOTE: Derived from 40 CFR 141.135 ~~(2002)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.490 Certified Laboratories

a) For the purpose of determining compliance with Subparts ~~L~~ G, K through O, Q and S of this Part, samples will be considered only if they have been analyzed as follows:

1) By a laboratory certified pursuant to Section 4(o) of the Act [415 ILCS 5/4(o)];

2) By a laboratory certified by USEPA; or

3) For measurements ~~for~~ of alkalinity, calcium, conductivity, disinfectant residual, orthophosphate, silica, turbidity, free chlorine residual, temperature, and pH, ~~may be performed~~ by a person under the supervision of a certified operator (35 Ill. Adm. Code 603.103).

b) Nothing in this Part must be construed to preclude the Agency or any duly designated representative of the Agency from taking samples or from using the results from such samples to determine compliance by a supplier of water with the applicable requirements of this Part.

~~BOARD NOTE: Subsections (a) and (b) are derived from 40 CFR 141.28 (2002).~~

c) The CWS supplier must have required analyses performed either at an Agency laboratory or a certified laboratory. The Agency may require that some or all of the required samples be submitted to its laboratories.

~~BOARD NOTE: This is an additional State requirement.~~

BOARD NOTE: Subsections (a) and (b) are derived from 40 CFR 141.28 (2006), as amended at 71 Fed. Reg. 65574 (Nov. 8, 2006). Subsection (c) is an additional State requirement.

(Source: Amended at 31 Ill. Reg. _____, effective _____)

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.524 Sanitary Surveys

a) Requirement to conduct a sanitary survey.

1) Suppliers that do not collect five or more routine samples per month must undergo a sanitary survey at least once every five years, except that non-CWS suppliers using only disinfected groundwater, from a source that is not under the direct influence of surface water, must undergo a sanitary survey at least once every ten years. The Agency or, for a non-CWS, Public Health must review the results of each sanitary survey to determine whether the existing monitoring frequency is adequate and what additional measures, if any, the supplier needs to undertake to improve drinking water quality.

2) In conducting a sanitary survey of a PWS using groundwater, information on sources of contamination within the delineated wellhead protection area that was collected in the course of developing and implementing the wellhead protection program should be considered instead of collecting new information, if the information was collected since the last time the PWS was subject to a sanitary survey.

b) Sanitary surveys must be performed by the Agency. The PWS is responsible for ensuring that the survey takes place.

c) A sanitary survey conducted by the Agency for the purposes of Subpart S of this Part may be used to meet the sanitary survey requirements of this Section.

BOARD NOTE: Derived from 40 CFR 141.21(d) ~~(2002)~~ (2006), as amended at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.680 Sampling, Analytical, and other Requirements

a) Required monitoring.

1) A CWS supplier that serves a population of 10,000 or more individuals and which adds a disinfectant (oxidant) to the water in any part of the drinking water treatment process must analyze for TTHMs in accordance with this Subpart P.

2) For the purpose of this Subpart P, the minimum number of samples required to be taken by the supplier must be based on the number of treatment plants used by the supplier. However, the Agency shall, by a SEP issued pursuant to Section 611.110, provide that multiple wells drawing raw water from a single aquifer be considered one treatment plant for determining the minimum number of samples.

3) All samples taken within an established frequency must be collected within a 24-hour period.

b) A CWS supplier ~~serving~~ that serves 10,000 or more individuals.

1) For a CWS supplier utilizing surface a water source in whole or in part, and for a CWS supplier utilizing only a groundwater source, except as provided in Section 611.683, analyses for TTHMs must be performed at quarterly intervals on at least four water samples for each treatment plant used by the system. At least 25 percent of the samples must be taken at locations within the distribution system reflecting the maximum residence time (MRT) of the water in the system. The remaining 75 percent must be taken at representative locations in the distribution system, taking into account the number of persons served, different sources of water and different treatment methods employed. The results of all analyses per quarter must be arithmetically averaged and reported to the Agency within 30 days after the supplier's receipt of such results. All samples collected must be used in the computation of the average, unless the analytical results are invalidated for technical reasons. Sampling and analyses must be conducted in accordance with the methods listed in Section 611.685.

2) Upon application by a CWS supplier, the Agency must, by a SEP issued pursuant to Section 611.110, reduce the monitoring frequency required by subsection (b)(1) to a minimum of one sample analyzed for TTHMs per quarter taken at a point in the distribution system reflecting the MRT of the water in the system, if the Agency determines that the data from at least one year of monitoring in accordance with subsection (b)(1) and local conditions demonstrate that TTHM concentrations will be consistently below the MCL.

3) If at any time during which the reduced monitoring frequency prescribed under this subsection (b) applies, the results from any analysis exceed 0.10 mg/ℓ TTHMs and such results are confirmed by at least one check sample taken promptly after such results are received, or if the CWS supplier makes any significant change to its source of water or treatment program, the supplier must immediately begin monitoring in accordance with the requirements of subsection (b)(1), which monitoring must continue for at least 1 year before the frequency may be reduced again. The Agency

must, by a SEP issued pursuant to Section 611.110, require monitoring in excess of the minimum frequency where it is necessary to detect variations of TTHM levels within the distribution system.

BOARD NOTE: Subsections (a) and (b) of this Section are derived from 40 CFR 141.30(a) and (b) (2002), modified to remove the limitation regarding addition of disinfectant.

c) Surface water sources for a CWS supplier ~~serving~~ that serves fewer than 10,000 individuals. Suppliers must have submitted at least one initial sample per treatment plant for analysis or analytical results from a certified laboratory for MRT concentration taken between May 1, 1990, and October 31, 1990. After written request by the supplier and the determination by the Agency that the results of the sample indicate that the CWS supplier is not likely to exceed the MCL, the CWS must continue to submit one annual sample per treatment plant for analysis or analytical results from a certified laboratory to the Agency taken between May 1 and October 31 of succeeding years. If the sample exceeds the MCL, the CWS must submit to the Agency samples in accordance with the sampling frequency specified in subsection (b) of this Section.

BOARD NOTE: This is an additional State requirement.

d) Groundwater sources for a CWS supplier ~~serving~~ that serves fewer than 10,000 individuals. Suppliers are not required to submit samples for THM analysis under this Subpart P.

BOARD NOTE: This is an additional State requirement.

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.685 Analytical Methods (Repealed)

~~Sampling and analyses made pursuant to this Subpart V must be conducted by one of the total trihalomethanes (TTHM) methods, as directed in Section 611.645; in USEPA Technical Notes, incorporated by reference in Section 611.102; or in Section 611.381(b). Samples for TTHM must be dechlorinated upon collection to prevent further production of trihalomethanes according to the procedures described in the methods, except acidification is not required if only THMs or TTHMs are to be determined. Samples for maximum TTHM potential must not be dechlorinated or acidified, and should be held for seven days at 25° C (or above) prior to analysis.~~

~~BOARD NOTE: Derived from 40 CFR 141.30(e) (2002).~~

(Source: Repealed at 31 Ill. Reg. _____, effective _____)

SUBPART S: GROUNDWATER RULE

Section 611.800 General Requirements and Applicability

a) Scope of this Subpart S. The requirements of this Subpart S constitute NPDWRs.

b) Applicability. This Subpart S applies to all PWS suppliers that use groundwater, except that it does not apply to public water systems that combine all of their groundwater with surface water or with groundwater under the direct influence of surface water prior to treatment pursuant to Subpart B. For the purposes of this Subpart S, "GWS" is defined as any PWS that meets this applicability statement, including a consecutive system receiving finished groundwater.

c) General requirements. A supplier subject to this Subpart S must comply with the following requirements:

1) Sanitary survey information requirements for all GWS suppliers, as described in Section 611.801.

2) Microbial source water monitoring requirements for GWS suppliers that do not treat all of their groundwater to at least 99.99 percent (4-log) treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer, as described in Section 611.802.

3) Treatment technique requirements, described in Section 611.803, that apply to GWS suppliers that have fecally contaminated source waters, as determined by source water monitoring conducted pursuant to Section 611.802, or which have significant deficiencies that are identified by the Agency, by a SEP issued pursuant to Section 611.110, or which are identified by USEPA pursuant to SDWA section 1445 (42 USC 300j-4). A GWS supplier with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements of this Subpart S must implement one or more of the following corrective action options: correct all significant deficiencies; provide an alternate source of water; eliminate the source of contamination; or provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or an Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer.

4) A GWS supplier that provides at least 4-log treatment of viruses (using inactivation, removal, or an Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer is required to conduct compliance monitoring to demonstrate treatment effectiveness, as described in Section 611.803(b).

5) If requested by the Agency, a GWS supplier must provide the Agency with any existing information that will enable the Agency to perform a hydrogeologic sensitivity assessment.

BOARD NOTE: The Board moved the definition of "hydrogeologic sensitivity assessment" to the definitions provision of this Part: Section 611.102.

d) Compliance date. A GWS supplier must comply, unless otherwise noted, with the requirements of this Subpart S beginning December 1, 2009.

BOARD NOTE: Derived from 40 CFR 141.400, as added at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.801 Sanitary Surveys for GWS Suppliers

a) A GWS supplier must provide the Agency, at the Agency's request, any existing information that will enable the Agency to conduct a sanitary survey.

b) For the purposes of this Subpart S, a "sanitary survey," as conducted by the Agency, includes but is not limited to, an onsite review of the water sources (identifying sources of contamination by using results of source water assessments or other relevant information where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

c) The sanitary survey must include an evaluation of the applicable components listed in subsections (c)(1) through (c)(8) of this Section:

1) Source,

2) Treatment,

3) Distribution system,

4) Finished water storage,

5) Pumps, pump facilities, and controls,

6) Monitoring, reporting, and data verification,

7) System management and operation, and

8) Operator compliance with Agency requirements.

d) The Agency must repeat the sanitary survey as follows:

1) The Agency must conduct a sanitary survey that address the eight sanitary survey components listed in subsection (c) of this Section no less frequently than every three years for a CWS supplier, except as provided in subsection (d)(3) of this Section, and every five years for non-CWS supplier. The Agency may conduct more frequent sanitary surveys for any supplier. The initial sanitary survey for each community water system must be conducted by December 31, 2012, unless the supplier meets the requirements of subsection (d)(3) of this Section. The initial sanitary survey for each CWS supplier that meets the requirements of subsection (d)(3) of this Section and for each non-CWS supplier must be conducted by December 31, 2014. The sanitary survey must include an evaluation of each of the elements set forth in subsection (c) of this Section, as applicable.

2) The Agency may use a phased review process to meet the requirements of (d)(1) of this Section if all the applicable elements of subsection (c) of this Section are evaluated within the required interval.

3) The Agency may conduct sanitary surveys once every five years for community water systems under any of the following circumstances:

A) If the system either provides at least 4-log treatment of viruses (using inactivation, removal, or an Agency-approved combination of 4-log inactivation and removal) before or at the first customer for all its groundwater sources; or

B) If the supplier has an outstanding performance record, as determined by the Agency and documented in previous sanitary surveys, and the supplier has no history of total coliform MCL or monitoring violations under Sections 611.521 through 611.527 since the last sanitary survey.

4) This subsection (d)(4) corresponds with 40 C.F.R. 142.16(o)(2)(iv), which imposes requirements for describing the elements of the State's regulatory system. This statement maintains structural consistency with the corresponding federal provision.

5) The Agency must provide a GWS supplier with written notice by a SEP issued pursuant to Section 611.110 that describes any significant deficiency which it has found no later than 30 days after the Agency has identified the significant deficiency. The notice may specify corrective actions and deadlines for completion of corrective actions. The Agency may provide the written notice at the time of the sanitary survey.

BOARD NOTE: Subsections (a) through (c) are derived from 40 CFR 141.401, as added at 71 Fed. Reg. 65574 (Nov. 8, 2006). Subsection (d) is derived from 40 CFR 142.16(o)(2), as added at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.802 Groundwater Source Microbial Monitoring and Analytical Methods

a) Triggered source water monitoring.

1) General requirements. A GWS supplier must conduct triggered source water monitoring if the following conditions exist:

A) The supplier does not provide at least 4-log treatment of viruses (using inactivation, removal, or an Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for each groundwater source; and

B) The supplier is notified that a sample collected pursuant to Section 611.521 is total coliform-positive, and the sample is not invalidated by the Agency pursuant to Section 611.523.

2) Sampling Requirements. A GWS supplier must collect, within 24 hours of notification of the total coliform-positive sample, at least one groundwater source sample from each groundwater source in use at the time the total coliform-positive sample was collected pursuant to Section 611.521, except as provided in subsection (a)(2)(B) of this Section.

A) The Agency may, by a SEP issued pursuant to Section 611.110, extend the 24-hour time limit on a case-by-case basis if it determines that the system cannot collect the groundwater source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the Agency must specify how much time the supplier has to collect the sample.

B) If approved by the Agency, a supplier with more than one groundwater source may meet the requirements of this subsection (a)(2) by sampling a representative groundwater source or sources. If directed by the Agency by a SEP issued pursuant to Section 611.110, the supplier must submit for Agency approval a triggered source water monitoring plan that identifies one or more groundwater sources that are representative of each monitoring site in the system's sample siting plan pursuant to Section 611.521 and that the system intends to use for representative sampling pursuant to this subsection (a).

C) A GWS supplier that serves 1,000 or fewer people may use a repeat sample collected from a groundwater source to meet both the requirements of Section 611.522 and to satisfy the monitoring requirements of subsection (a)(2) of this Section for that groundwater source only if the Agency approves the use of E. coli as a fecal indicator for source water monitoring pursuant to this subsection (a) by a SEP issued pursuant to Section 611.110. If the repeat sample collected from the groundwater source is E.coli positive, the system must comply with subsection (a)(3) of this Section.

3) Additional Requirements. If the Agency does not require corrective action pursuant to Section 611.803(a)(2) for a fecal indicator-positive source water sample collected pursuant to subsection (a)(2) of this Section that is not invalidated pursuant to subsection (d) of this Section, the system must collect five additional source water samples from the same source within 24 hours of being notified of the fecal indicator-positive sample.

4) Consecutive and wholesale systems.

A) In addition to the other requirements of this subsection (a), a consecutive GWS supplier that has a total coliform-positive sample collected pursuant to Section 141.21(a) must notify the wholesale systems within 24 hours of being notified of the total coliform-positive sample.

B) In addition to the other requirements of this subsection (a), a wholesale GWS supplier must comply with the following requirements:

i) A wholesale GWS supplier that receives notice from a consecutive system it serves that a sample collected pursuant to Section 141.21(a) is total coliform-positive must, within 24 hours of being notified, collect a sample from its groundwater sources pursuant to subsection (a)(2) of this Section and analyze it for a fecal indicator pursuant to subsection (c) of this Section.

ii) If the sample collected pursuant to subsection (a)(4)(B)(i) of this section is fecal indicator-positive, the wholesale GWS supplier must notify all consecutive systems served by that groundwater source of the fecal indicator source water positive within 24 hours of being notified of the groundwater source sample monitoring result and must

meet the requirements of subsection (a)(3) of this Section.

5) Exceptions to the triggered source water monitoring requirements. A GWS supplier is not required to comply with the source water monitoring requirements of subsection (a) of this Section if either of the following conditions exists:

A) The Agency determines, and documents in writing, by a SEP issued pursuant to Section 611.110, that the total coliform-positive sample collected pursuant to Section 611.521 is caused by a distribution system deficiency; or

B) The total coliform-positive sample collected pursuant to Section 611.521 is collected at a location that meets Agency criteria for distribution system conditions that will cause total coliform-positive samples.

b) Assessment source water monitoring. If directed by the Agency by a SEP issued pursuant to Section 611.110, a GWS supplier must conduct assessment source water monitoring that meets Agency-determined requirements for such monitoring. A GWS supplier conducting assessment source water monitoring may use a triggered source water sample collected pursuant to subsection (a)(2) of this Section to meet the requirements of subsection (b) of this Section. Agency-determined assessment source water monitoring requirements may include the following:

1) Collection of a total of 12 groundwater source samples that represent each month the system provides groundwater to the public;

2) Collection of samples from each well, unless the system obtains written Agency approval to conduct monitoring at one or more wells within the GWS that are representative of multiple wells used by that system and which draw water from the same hydrogeologic setting;

3) Collection of a standard sample volume of at least 100 mℓ for fecal indicator analysis, regardless of the fecal indicator or analytical method used;

4) Analysis of all groundwater source samples using one of the analytical methods listed in the in subsection (c)(2) of this Section for the presence of E. coli, enterococci, or coliphage;

5) Collection of groundwater source samples at a location prior to any treatment of the groundwater source unless the Agency approves a sampling location after treatment; and

6) Collection of groundwater source samples at the well itself, unless the system's configuration does not allow for sampling at the well itself and the Agency approves an alternate sampling location by a SEP issued pursuant to Section 611.110 that is representative of the water quality of that well.

c) Analytical methods.

1) A GWS supplier subject to the source water monitoring requirements of subsection (a) of this Section must collect a standard sample volume of at least 100 mℓ for fecal indicator analysis, regardless of the fecal indicator or analytical method used.

2) A GWS supplier must analyze all groundwater source samples collected pursuant to subsection (a) of this Section using one of the analytical methods listed in subsections (c)(2)(A) through (c)(2)(C) of this Section, subject to the limitations of subsection (c)(2)(D) of this Section, for the presence of E. coli, enterococci, or coliphage:

A) E. coli:

i) Autoanalysis Colilert System, Standard Methods, 20th ed., Method 9223.

ii) Colisure Test, Standard Methods, 20th ed., Method 9223.

iii) Membrane Filter Method with MI Agar, USEPA Method 1604.

iv) m-ColiBlue24 Test.

v) E*Colite Test.

vi) EC–MUG, Standard Methods, 20th ed., Method 9221 F.

vii) NA–MUG, Standard Methods, 20th ed., Method 9222 G.

BOARD NOTE: EC–MUG (Standard Methods, Method 9221F) or NA–MUG (Standard Methods, Method 9222G) can be used for E. coli testing step, as described in Section 141.21(f)(1) or (f)(2) after use of Standard Methods, Method 9221 B, 9221 D, 9222 B, or 9222 C.

B) Enterococci:

i) Multiple-Tube Technique, Standard Methods, 20th ed.,

Method 9230B.

ii) Membrane Filter Technique, Standard Methods, 20th ed., Method 9230 B, and USEPA Method 1600.

BOARD NOTE: The holding time and temperature for groundwater samples are specified in subsection (c)(2)(D) of this Section, rather than as specified in Section 8 of USEPA Method 1600.

iii) Enterolert.

BOARD NOTE: Medium is available through IDEXX Laboratories, Inc., at the address set forth in Section 611.102(b). Preparation and use of the medium must be as set forth in the article that embodies the method as incorporated by reference in Section 611.102(b).

C) Coliphage:

i) Two-Step Enrichment Presence-Absence Procedure, USEPA Method 1601.

ii) Single Agar Layer Procedure, USEPA Method 1602.

D) Limitation on methods use. The time from sample collection to initiation of analysis may not exceed 30 hours. The GWS supplier is encouraged but is not required to hold samples below 10°C during transit.

d) Invalidation of a fecal indicator-positive groundwater source sample.

1) A GWS supplier may obtain Agency invalidation of a fecal indicator-positive groundwater source sample collected pursuant to subsection (a) of this Section only under either of the following conditions:

A) The supplier provides the Agency with written notice from the laboratory that improper sample analysis occurred; or

B) The Agency determines and documents in writing by a SEP issued pursuant to Section 611.110 that there is substantial evidence that a fecal indicator-positive groundwater source sample is not related to source water quality.

2) If the Agency invalidates a fecal indicator-positive groundwater source sample, the GWS supplier must collect another source water sample

pursuant to subsection (a) of this Section within 24 hours after being notified by the Agency of its invalidation decision, and the supplier must have it analyzed for the same fecal indicator using the analytical methods in subsection (c) of this Section. The Agency may extend the 24-hour time limit on a case-by-case basis if the supplier cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the Agency must specify how much time the system has to collect the sample.

e) Sampling location.

1) Any groundwater source sample required pursuant to subsection (a) of this Section must be collected at a location prior to any treatment of the groundwater source unless the Agency approves a sampling location after treatment.

2) If the supplier's system configuration does not allow for sampling at the well itself, the it may collect a sample at a Agency-approved location to meet the requirements of subsection (a) of this Section if the sample is representative of the water quality of that well.

f) New Sources. If directed by the Agency by a SEP issued pursuant to Section 611.110, a GWS supplier that places a new groundwater source into service after November 30, 2009, must conduct assessment source water monitoring pursuant to subsection (b) of this Section. If directed by the SEP, the system must begin monitoring before the groundwater source is used to provide water to the public.

g) Public Notification. A GWS supplier with a groundwater source sample collected pursuant to subsection (a) or (b) of this Section that is fecal indicator-positive and which is not invalidated pursuant to subsection (d) of this Section, including a consecutive system supplier served by the groundwater source, must conduct public notification pursuant to Section 611.902.

h) Monitoring Violations. A failure to meet the requirements of subsections (a) through (f) of this Section is a monitoring violation that requires the GWS supplier to provide public notification pursuant to Section 611.904.

BOARD NOTE: Derived from 40 CFR 141.402, as added at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.803 Treatment Technique Requirements for GWS Suppliers

a) GWS suppliers with significant deficiencies or source water fecal contamination.

1) The treatment technique requirements of this Section must be met by

GWS suppliers when a significant deficiency is identified or when a groundwater source sample collected pursuant to Section 611.802(a)(3) is fecal indicator-positive.

2) If directed by the Agency by a SEP issued pursuant to Section 611.110, a GWS supplier with a groundwater source sample collected pursuant to Section 611.802(a)(2), Section 611.802(a)(4), or Section 611.802(b) that is fecal indicator-positive must comply with the treatment technique requirements of this Section.

3) When a significant deficiency is identified at a Subpart B PWS that uses both groundwater and surface water or groundwater under the direct influence of surface water, the system must comply with provisions of this subsection (b) except in cases where the Agency determines that the significant deficiency is in a portion of the distribution system that is served solely by surface water or groundwater under the direct influence of surface water.

4) Unless the Agency, by a SEP issued pursuant to Section 611.110, directs the GWS supplier to implement a specific corrective action, the GWS supplier must consult with the Agency regarding the appropriate corrective action within 30 days of receiving written notice from the Agency of a significant deficiency, written notice from a laboratory that a groundwater source sample collected pursuant to Section 611.802(a)(3) was found to be fecal indicator-positive, or direction from the Agency that a fecal indicator-positive collected pursuant to Section 611.802(a)(2), Section 611.802(a)(4), or Section 611.802(b) requires corrective action. For the purposes of this Subpart S, significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the Agency determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

5) Within 120 days (or earlier if directed by the Agency) of receiving written notification from the Agency of a significant deficiency, written notice from a laboratory that a groundwater source sample collected pursuant to Section 611.802(a)(3) was found to be fecal indicator-positive, or written notice from the Agency that a fecal indicator-positive sample collected pursuant to Section 611.802(a)(2), Section 611.802(a)(4), or Section 611.802(b) requires corrective action, the GWS supplier must do either of the following:

A) It must have completed corrective action in accordance with any applicable plan review processes adopted by the Agency or with any SEP issued by the Agency, if any, including Agency-specified interim measures; or

B) It must be in compliance with a Agency-approved corrective action plan and schedule, subject to the following conditions:

i) Any subsequent modifications to an Agency-approved corrective action plan and schedule must also be approved by the Agency; and

ii) If the Agency specifies interim measures for protection of the public health pending Agency approval of the corrective action plan and schedule or pending completion of the corrective action plan, the supplier must comply with those interim measures, as well as with any schedule specified by the Agency.

6) Corrective Action Alternatives. A GWS supplier that meets the conditions of subsection (a)(1) or (a)(2) of this Section must implement one or more of the following corrective action alternatives:

A) It must correct all significant deficiencies;

B) It must provide an alternate source of water;

C) It must eliminate the source of contamination; or

D) It must provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for the groundwater source.

7) Special notice to the public of significant deficiencies or source water fecal contamination.

A) In addition to the applicable public notification requirements of Section 611.902, a community GWS supplier that receives notice from the Agency of a significant deficiency or notification of a fecal indicator-positive groundwater source sample that is not invalidated by the Agency pursuant to Section 611.802(d) must inform the public served by the water system pursuant to Section 611.883(h)(6) of the fecal indicator-positive source sample or of any significant deficiency that has not been corrected. The supplier must continue to inform the public annually until the significant deficiency is corrected or the fecal contamination in the groundwater source is determined by the Agency to be corrected pursuant to subsection (a)(5) of this Section.

B) In addition to the applicable public notification requirements of Section 611.902, a non-community GWS supplier that receives notice from the Agency of a significant deficiency must inform the public served by the water system in a manner approved by the Agency of any significant deficiency that has not been corrected within 12 months of being notified by the Agency, or earlier if directed by the Agency. The supplier must continue to inform the public annually until the significant deficiency is corrected. The information must include the following information:

i) The nature of the significant deficiency and the date the significant deficiency was identified by the Agency;

ii) The Agency-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed; and

iii) For a supplier with a large proportion of non-English speaking consumers, as determined by the Agency, information in the appropriate languages regarding the importance of the notice or a telephone number or address where consumers may contact the system to obtain a translated copy of the notice or assistance in the appropriate language.

C) If directed by the Agency, a non-CWS supplier with significant deficiencies that have been corrected must inform its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction pursuant to subsection (a)(7)(B) of this Section.

b) Compliance monitoring.

1) Existing groundwater sources. A GWS supplier that is not required to meet the source water monitoring requirements of this Subpart S for any groundwater source because it provides at least 4-log treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for any groundwater source before December 1, 2009, must notify the Agency in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for the specified groundwater source and begin compliance monitoring in accordance with subsection (b)(3) of this section by December 1, 2009. Notification to the Agency must include engineering, operational, or other information that the Agency requests to evaluate the submission. If the supplier

subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for a groundwater source, the supplier must conduct groundwater source monitoring, as required pursuant to Section 611.802.

2) New groundwater sources. A GWS supplier that places a groundwater source in service after November 30, 2009, which is not required to meet the source water monitoring requirements of this Subpart S because the supplier provides at least 4-log treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for the groundwater source must comply with the requirements of subsections (b)(2)(A), (b)(2)(B) and (b)(2)(C) of this Section.

A) The supplier must notify the Agency in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for the groundwater source. Notification to the Agency must include engineering, operational, or other information that the Agency requests by a SEP issued pursuant to Section 611.110 to evaluate the submission.

B) The supplier must conduct compliance monitoring, as required pursuant to Section 611.803(b)(3) of this Subpart S, within 30 days of placing the source in service.

C) The supplier must conduct groundwater source monitoring pursuant to Section 611.802 if it subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for the groundwater source.

3) Monitoring requirements. A GWS supplier subject to the requirements of subsections (a), (b)(1) or (b)(2) of this Section must monitor the effectiveness and reliability of treatment for that groundwater source before or at the first customer as follows:

A) Chemical disinfection.

i) GWS suppliers serving greater than 3,300 people. A GWS supplier that serves greater than 3,300 people must continuously monitor the residual disinfectant concentration using analytical methods specified in Section 611.531(b) at a location approved by the Agency and must

record the lowest residual disinfectant concentration each day that water from the groundwater source is served to the public. The GWS supplier must maintain the Agency-determined residual disinfectant concentration every day it serves water from the groundwater source to the public. If there is a failure in the continuous monitoring equipment, the GWS supplier must conduct grab sampling every four hours until the continuous monitoring equipment is returned to service. The supplier must resume continuous residual disinfectant monitoring within 14 days.

ii) GWS suppliers serving 3,300 or fewer people. A GWS supplier that serves 3,300 or fewer people must monitor the residual disinfectant concentration using analytical methods specified in Section 611.531(b) at a location approved by the Agency and record the residual disinfection concentration each day that water from the groundwater source is served to the public. The GWS supplier must maintain the Agency-determined residual disinfectant concentration every day the it serves water from the groundwater source to the public. The GWS supplier must take a daily grab sample during the hour of peak flow or at another time specified by the Agency. If any daily grab sample measurement falls below the Agency-determined residual disinfectant concentration, the GWS supplier must take follow-up samples every four hours until the residual disinfectant concentration is restored to the Agency-determined level. Alternatively, a GWS supplier that serves 3,300 or fewer people may monitor continuously and meet the requirements of subsection (b)(3)(A)(i) of this Section.

B) Membrane filtration. A GWS supplier that uses membrane filtration to meet the requirements of this Subpart S must monitor the membrane filtration process in accordance with all Agency-specified monitoring requirements and must operate the membrane filtration in accordance with all Agency-specified compliance requirements. A GWS supplier that uses membrane filtration is in compliance with the requirement to achieve at least 4-log removal of viruses when it fulfills the following conditions:

i) The membrane has an absolute molecular weight cut-off, or an alternative parameter that describes the exclusion characteristics of the membrane, that can reliably achieve at least 4-log removal of viruses;

ii) The membrane process is operated in accordance with Agency-specified compliance requirements; and

iii) The integrity of the membrane is intact.

C) Alternative treatment. A GWS supplier that uses a Agency-approved alternative treatment to meet the requirements of this Subpart S by providing at least 4-log treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer must do both of the following:

i) It must monitor the alternative treatment in accordance with all Agency-specified monitoring requirements; and

ii) It must operate the alternative treatment in accordance with all compliance requirements that the Agency determines to be necessary to achieve at least 4-log treatment of viruses.

c) Discontinuing treatment. A GWS supplier may discontinue 4-log treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for a groundwater source if the Agency determines and documents in writing that 4-log treatment of viruses is no longer necessary for that groundwater source. A system that discontinues 4-log treatment of viruses is subject to the source water monitoring and analytical methods requirements of Section 611.802 of this Subpart S.

d) A failure to meet the monitoring requirements of subsection (b) of this section is a monitoring violation and requires the GWS supplier to provide public notification pursuant to Section 611.904.

BOARD NOTE: Derived from 40 CFR 141.403, as added at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.804 Treatment Technique Violations for GWS Suppliers

a) A GWS supplier with a significant deficiency is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the Agency) of receiving written notice from the Agency of the significant deficiency, the system does not do either of the following:

1) It does not complete corrective action in accordance with any applicable Agency plan review processes or other Agency guidance and direction, including Agency specified interim actions and measures, or

2) It is not in compliance with a Agency-approved corrective action plan and schedule.

b) Unless the Agency invalidates a fecal indicator-positive groundwater source sample pursuant to Section 611.802(d), a GWS supplier is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the Agency) of meeting the conditions of Section 611.803(a)(1) or (a)(2), the supplier does not do either of the following:

1) It does not complete corrective action in accordance with any applicable Agency plan review processes or other Agency guidance and direction, including Agency-specified interim measures, or

2) It is not in compliance with a Agency-approved corrective action plan and schedule.

c) A GWS supplier subject to the requirements of Section 611.803(b)(3) that fails to maintain at least 4-log treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for a groundwater source is in violation of the treatment technique requirement if the failure is not corrected within four hours of determining the supplier is not maintaining at least 4-log treatment of viruses before or at the first customer.

d) GWS supplier must give public notification pursuant to Section 611.903 for the treatment technique violations specified in subsections (a), (b) and (c) of this Section.

BOARD NOTE: Derived from 40 CFR 141.404, as added at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.805 Reporting and Recordkeeping for GWS Suppliers

a) Reporting. In addition to the requirements of Section 611.840, a GWS supplier regulated pursuant to this Subpart S must provide the following information to the Agency:

1) A GWS supplier conducting compliance monitoring pursuant to Section 611.803(b) must notify the Agency any time the supplier fails to meet any Agency-specified requirements including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within four hours. The GWS supplier must notify the Agency as soon as possible, but in no case later than the end of the next business day.

2) After completing any corrective action pursuant to Section 611.803(a), a GWS supplier must notify the Agency within 30 days of completion of the corrective action.

3) If a GWS supplier subject to the requirements of Section 611.802(a) does not conduct source water monitoring pursuant to Section 611.802(a)(5)(B), the supplier must provide documentation to the Agency within 30 days of the total coliform-positive sample that it met the Agency criteria.

b) Recordkeeping. In addition to the requirements of Section 611.860, a GWS supplier regulated pursuant to this Subpart S must maintain the following information in its records:

1) Documentation of corrective actions. Documentation shall be kept for a period of not less than ten years.

2) Documentation of notice to the public as required pursuant to Section 611.803(a)(7). Documentation shall be kept for a period of not less than three years.

3) Records of decisions pursuant to Section 611.802(a)(5)(B) and records of invalidation of fecal indicator-positive groundwater source samples pursuant to Section 611.802(d). Documentation shall be kept for a period of not less than five years.

4) For a consecutive system supplier, documentation of notification to the wholesale systems of total-coliform positive samples that are not invalidated pursuant to Section 611.523. Documentation shall be kept for a period of not less than five years.

5) For a supplier, including a wholesale system supplier, that are required to perform compliance monitoring pursuant to Section 611.803(b), the following information:

A) Records of the Agency-specified minimum disinfectant residual. Documentation shall be kept for a period of not less than ten years;

B) Records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the Agency-prescribed minimum residual disinfectant concentration for a period of more than four hours. Documentation shall be kept for a period of not less than five years; and

C) Records of Agency-specified compliance requirements for

membrane filtration and of parameters specified by the Agency for Agency-approved alternative treatment and records of the date and duration of any failure to meet the membrane operating, membrane integrity, or alternative treatment operating requirements for more than four hours. Documentation shall be kept for a period of not less than five years.

BOARD NOTE: Derived from 40 CFR 141.405, as added at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

SUBPART T: REPORTING AND RECORDKEEPING

Section 611.860 Record Maintenance

A supplier must retain on its premises or at a convenient location near its premises the following records:

a) Records of bacteriological analyses and turbidity analyses made pursuant to this Part must be kept for not less than five years. Records of chemical analyses made pursuant to this Part must be kept for not less than ten years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that the following information is included:

1) The date, place, and time of sampling, and the name of the person who collected the sample;

2) Identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample, or other special purpose sample;

3) The date of analysis;

4) The laboratory and person responsible for performing analysis;

5) The analytical technique or method used; and

6) The results of the analysis.

b) Records of action taken by the supplier to correct violations of this Part must be kept for a period not less than three years after the last action taken with respect to the particular violation involved.

c) Copies of any written reports, summaries, or communications relating to sanitary surveys of the system conducted by the supplier itself, by a private consultant, by USEPA, the Agency, or a unit of local government delegated pursuant to Section

611.108, must be kept for a period not less than ten years after completion of the sanitary survey involved.

d) Records concerning a variance or adjusted standard granted to the supplier must be kept for a period ending not less than five years following the expiration of such variance or adjusted standard.

e) Copies of public notices issued pursuant to Subpart V of this Part and certifications made to the Agency pursuant to Section 611.840 must be kept for three years after issuance.

f) Copies of monitoring plans developed pursuant to this Part must be kept for the same period of not less than five years that applies to the records of analyses taken under the plan pursuant to subsection (a) of this Section, except as specified otherwise elsewhere in this Part.

BOARD NOTE: Derived from 40 CFR 141.33 ~~(2002)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

SUBPART U: CONSUMER CONFIDENCE REPORTS

Section 611.881 Purpose and Applicability

a) This Subpart U establishes the minimum requirements for the content of annual reports that community water systems (CWSs) must deliver to their customers. These reports must contain information on the quality of the water delivered by the systems and characterize the risks (if any) from exposure to contaminants detected in the drinking water in an accurate and understandable manner.

b) Notwithstanding the provisions of Section 611.100(d), this Subpart U only applies to CWSs.

c) For the purpose of this Subpart U, "customers" are defined as billing units or service connections to which water is delivered by a CWS.

d) For the purpose of this Subpart U, "detected" means the following: at or above the detection limit levels prescribed by Section 611.600(d) for inorganic contaminants; at or above the levels prescribed by Section 611.646(a) for Phase I, II, and V VOCs; at or above the levels prescribed by Section 611.648(r) for Phase II, IIB, and V SOCs at or above the levels prescribed by Section 611.381(b)(2)(D) for the disinfection byproducts listed in Section 611.312; and at or above the levels prescribed by Section 611.720(c)(3) for radioactive contaminants.

BOARD NOTE: Derived from 40 CFR 141.151 ~~(2002)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.883 Content of the Reports

a) Each CWS must provide to its customers an annual report that contains the information specified in this Section and Section 611.884.

b) Information on the source of the water delivered.

1) Each report must identify the sources of the water delivered by the CWS by providing information on the following:

A) The type of the water (e.g., surface water, groundwater); and

B) The commonly used name (if any) and location of the body (or bodies) of water.

2) If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the Agency, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the Agency or written by the supplier.

c) Definitions.

1) Each report must include the following definitions:

A) Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

BOARD NOTE: Although an MCLG is not an NPDWR that the Board must include in the Illinois SDWA regulations, the use of this definition is mandatory where the term "MCLG" is defined.

B) Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

2) A report for a CWS operating under relief from an NPDWR issued under Sections 611.111, 611.112, 611.130, or 611.131 must include the following definition: "Variances, Adjusted Standards, and Site-specific Rules: State

permission not to meet an MCL or a treatment technique under certain conditions."

3) A report that contains data on contaminants that USEPA regulates using any of the following terms must include the applicable definitions:

A) Treatment technique: A required process intended to reduce the level of a contaminant in drinking water.

B) Action level: The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

C) Maximum residual disinfectant level goal or MRDLG: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

BOARD NOTE: Although an MRDLG is not an NPDWR that the Board must include in the Illinois SDWA regulations, the use of this definition is mandatory where the term "MRDLG" is defined.

D) Maximum residual disinfectant level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

d) Information on detected contaminants.

1) This subsection (d) specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring (except Cryptosporidium). It applies to the following:

A) Contaminants subject to an MCL, action level, MRDL, or treatment technique (regulated contaminants);

B) Contaminants for which monitoring is required by Section 611.510 (unregulated contaminants); and

C) Disinfection byproducts or microbial contaminants for which monitoring is required by Section 611.382 and Subpart L of this Part, except as provided under subsection (e)(1) of this Section, and which are detected in the finished water.

2) The data relating to these contaminants must be displayed in one table or in several adjacent tables. Any additional monitoring results that a CWS

chooses to include in its report must be displayed separately.

3) The data must have been derived from data collected to comply with monitoring and analytical requirements during calendar year 1998 for the first report and must be derived from the data collected in subsequent calendar years, except that the following requirements also apply:

   A) Where a system is allowed to monitor for regulated contaminants less often than once a year, the tables must include the date and results of the most recent sampling, and the report must include a brief statement indicating that the data presented in the report is from the most recent testing done in accordance with the regulations. No data older than five years need be included.

   B) Results of monitoring in compliance with Section 611.382 and Subpart L need only be included for five years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

4) For detected regulated contaminants (listed in Appendix A of this Part), the tables must contain the following:

   A) The MCL for that contaminant expressed as a number equal to or greater than 1.0 (as provided in Appendix A of this Part);

   B) The federal Maximum Contaminant Level Goal (MCLG) for that contaminant expressed in the same units as the MCL;

   C) If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report must include the definitions for treatment technique or action level, as appropriate, specified in subsection (c)(3) of this Section;

   D) For contaminants subject to an MCL, except turbidity and total coliforms, the highest contaminant level used to determine compliance with an NPDWR, and the range of detected levels, as follows:

      i) When compliance with the MCL is determined annually or less frequently: the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.

      ii) When compliance with the MCL is determined by

calculating a running annual average of all samples taken at a ~~sampling point~~ monitoring location: the highest average of any of the ~~sampling points~~ monitoring locations and the range of all ~~sampling points~~ monitoring locations expressed in the same units as the MCL. For the MCLs for TTHM and HAA5 in Section 611.312(b)(2), the supplier must include the highest locational running annual average for TTHM and HAA5 and the range of individual sample results for all monitoring locations expressed in the same units as the MCL. If results from more than one location exceeds the TTHM or HAA5 MCL, the supplier must include the locational running annual average for each location whose results exceed the MCL.

iii) When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all samples at all ~~sampling points~~ monitoring locations: the average and range of detection expressed in the same units as the MCL;

BOARD NOTE to subsection (d)(4)(D): ~~When rounding of results to determine compliance with the MCL is allowed by the regulations, rounding should be done prior to multiplying the results by the factor listed in Appendix A of this Part; derived from 40 CFR 153 (2003).~~ The supplier is required to include individual sample results for the IDSE conducted under Subpart W of this Part when determining the range of TTHM and HAA5 results to be reported in the annual consumer confidence report for the calendar year that the IDSE samples were taken.

E) For turbidity the following:

i) When it is reported pursuant to Section 611.560: the highest average monthly value.

ii) When it is reported pursuant to the requirements of Section 611.211(b): the highest monthly value. The report must include an explanation of the reasons for measuring turbidity.

iii) When it is reported pursuant to Section 611.250, 611.743, or 611.955(b): the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in Section 611.250, 611.743, or 611.955(b) for the filtration technology being used. The report must include an explanation of the reasons for measuring turbidity;

F) For lead and copper the following: the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level;

G) For total coliform the following:

i) The highest monthly number of positive samples for systems collecting fewer than 40 samples per month; or

ii) The highest monthly percentage of positive samples for systems collecting at least 40 samples per month;

H) For fecal coliform the following: the total number of positive samples; and

I) The likely sources of detected contaminants to the best of the supplier's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and must be used when available to the supplier. If the supplier lacks specific information on the likely source, the report must include one or more of the typical sources for that contaminant listed in Appendix G of this Part that are most applicable to the CWS.

5) If a CWS distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table must contain a separate column for each service area and the report must identify each separate distribution system. Alternatively, a CWS may produce separate reports tailored to include data for each service area.

6) The tables must clearly identify any data indicating violations of MCLs, MRDLs, or treatment techniques, and the report must contain a clear and readily understandable explanation of the violation including the following: the length of the violation, the potential adverse health effects, and actions taken by the CWS to address the violation. To describe the potential health effects, the CWS must use the relevant language of Appendix A of this Part.

7) For detected unregulated contaminants for which monitoring is required (except Cryptosporidium), the tables must contain the average and range at which the contaminant was detected. The report may include a brief explanation of the reasons for monitoring for unregulated contaminants.

e) Information on Cryptosporidium, radon, and other contaminants as follows:

1) If the CWS has performed any monitoring for Cryptosporidium, including monitoring performed to satisfy the requirements of Subpart L of this Part,

that indicates that Cryptosporidium may be present in the source water or the finished water, the report must include the following:

A) A summary of the results of the monitoring; and

B) An explanation of the significance of the results.

2) If the CWS has performed any monitoring for radon that indicates that radon may be present in the finished water, the report must include the following:

A) The results of the monitoring; and

B) An explanation of the significance of the results.

3) If the CWS has performed additional monitoring that indicates the presence of other contaminants in the finished water, the report must include the following:

A) The results of the monitoring; and

B) An explanation of the significance of the results noting the existence of any health advisory or proposed regulation.

f) Compliance with an NPDWR. In addition to the requirements of subsection (d)(6) of this Section, the report must note any violation that occurred during the year covered by the report of a requirement listed below, and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the CWS has taken to correct the violation.

1) Monitoring and reporting of compliance data.

2) Filtration and disinfection prescribed by Subpart B of this Part. For CWSs that have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes that constitutes a violation, the report must include the following language as part of the explanation of potential adverse health effects: Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

3) Lead and copper control requirements prescribed by Subpart G of this Part. For systems that fail to take one or more actions prescribed by Section 611.350(d), 611.351, 611.352, 611.353, or 611.354, the report must include the applicable language of Appendix A of this Part for lead, copper, or both.

4) Treatment techniques for acrylamide and epichlorohydrin prescribed by Section 611.296. For systems that violate the requirements of Section 611.296, the report must include the relevant language from Appendix A of this Part.

5) Recordkeeping of compliance data.

6) Special monitoring requirements prescribed by Sections 611.510 and 611.630.

7) Violation of the terms of a variance, adjusted standard, site-specific rule, or administrative or judicial order.

g) Variances, adjusted standards, and site-specific rules. If a system is operating under the terms of a variance, adjusted standard, or site-specific rule issued under Section 611.111, 611.112, or 611.131, the report must contain the following:

1) An explanation of the reasons for the variance, adjusted standard, or site-specific rule;

2) The date on which the variance, adjusted standard, or site-specific rule was issued;

3) A brief status report on the steps the CWS is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance, adjusted standard, or site-specific rule; and

4) A notice of any opportunity for public input in the review, or renewal, of the variance, adjusted standard, or site-specific rule.

h) Additional information.

1) The report must contain a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water, including bottled water. This explanation may include the language of subsections (h)(1)(A) through (h)(1)(C) of this Section or CWSs may use their own comparable language. The report also must include the language of subsection (h)(1)(D) of this Section.

A) The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

B) Contaminants that may be present in source water include the following:

i) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

ii) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

iii) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

iv) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and

v) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

C) In order to ensure that tap water is safe to drink, USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. United States Food and Drug Administration (USFDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

D) Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA Safe Drinking Water Hotline (800-426-4791).

2) The report must include the telephone number of the owner, operator, or designee of the CWS as a source of additional information concerning the report.

3) In communities with a large proportion of non-English speaking residents, as determined by the Agency, the report must contain information in the

appropriate languages regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

4) The report must include information about opportunities for public participation in decisions that may affect the quality of the water.

5) The CWS may include such additional information as it deems necessary for public education consistent with, and not detracting from, the purpose of the report.

6) Suppliers required to comply with Subpart S of this Part.

A) Any GWS supplier that receives written notice from the Agency of a significant deficiency or which receives notice from a laboratory of a fecal indicator-positive groundwater source sample that is not invalidated by the Agency pursuant to Section 611.802(d) must inform its customers of any significant deficiency that is uncorrected at the time of the next report or of any fecal indicator-positive groundwater source sample in the next report. The supplier must continue to inform the public annually until the Agency, by a SEP issued pursuant to Section 611.110, determines that particular significant deficiency is corrected or the fecal contamination in the groundwater source is addressed pursuant to Section 611.803(a). Each report must include the following information:

i) The nature of the particular significant deficiency or the source of the fecal contamination (if the source is known) and the date the significant deficiency was identified by the Agency or the dates of the fecal indicator-positive groundwater source samples;

ii) Whether or not the fecal contamination in the groundwater source has been addressed pursuant to Section 611.803(a) and the date of such action;

iii) For each significant deficiency or fecal contamination in the groundwater source that has not been addressed pursuant to Section 611.803(a), the Agency-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed; and

iv) If the system receives notice of a fecal indicator-positive groundwater source sample that is not invalidated by the

Agency pursuant to Section 611.802(d), the potential health effects using the health effects language of Appendix A of this Part.

B) If directed by the Agency by a SEP issued pursuant to Section 611.110, a supplier with significant deficiencies that have been corrected before the next report is issued must inform its customers of the significant deficiency, how the deficiency was corrected, and the date of correction pursuant to subsection (h)(6)(A) of this Section.

BOARD NOTE: Derived from 40 CFR 141.153 ~~(2003)~~ (2006), as amended at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

Section 611.902 Tier 1 Public Notice: Form, Manner, and Frequency of Notice

a) Violations or situations that require a Tier 1 public notice. This subsection (a) lists the violation categories and other situations requiring a Tier 1 public notice. Appendix G of this Part identifies the tier assignment for each specific violation or situation.

1) Violation of the MCL for total coliforms when fecal coliform or E. coli are present in the water distribution system (as specified in Section 611.325(b)), or when the water supplier fails to test for fecal coliforms or E. coli when any repeat sample tests positive for coliform (as specified in Section 611.525)~~;~~.

2) Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, as defined in Section 611.301, or when the water supplier fails to take a confirmation sample within 24 hours after the supplier's receipt of the results from the first sample showing an exceedence of the nitrate or nitrite MCL, as specified in Section 611.606(b)~~;~~.

3) Exceedence of the nitrate MCL by a non-CWS supplier, where permitted to exceed the MCL by the Agency under Section 611.300(d), as required under Section 611.909~~;~~.

4) Violation of the MRDL for chlorine dioxide, as defined in Section 611.313(a), when one or more samples taken in the distribution system the day following an exceedence of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water supplier does

not take the required samples in the distribution system, as specified in Section 611.383(c)(2)(A)~~;~~.

5) This subsection (a)(5) refers to a violation of the former turbidity standard of Section 611.320, which the Board repealed because it applied to no suppliers in Illinois. This statement maintains structural consistency with the federal regulations~~;~~.

6) Violation of the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), or Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) treatment technique requirement resulting from a single exceedence of the maximum allowable turbidity limit (as identified in Appendix G), where the Agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the supplier learns of the violation~~;~~.

7) Occurrence of a waterborne disease outbreak, as defined in Section 611.101, or other waterborne emergency (such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination)~~;~~.

8) Detection of E. coli, enterococci, or coliphage in source water samples, as specified in Section 611.802(a) and (b).

~~8~~9) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the Agency by a SEP issued pursuant to Section 611.110.

b) When the Tier 1 public notice is to be provided. Additional steps required. A PWS supplier must do the following:

1) It must provide a public notice as soon as practical but no later than 24 hours after the supplier learns of the violation;

2) It must initiate consultation with the Agency as soon as practical, but no later than 24 hours after the PWS supplier learns of the violation or situation, to determine additional public notice requirements; and

3) It must comply with any additional public notification requirements (including any repeat notices or direction on the duration of the posted notices) that are established as a result of the consultation with the Agency. Such requirements may include the timing, form, manner, frequency, and content of repeat notices (if any) and other actions

designed to reach all persons served.

c) The form and manner of the public notice. A PWS supplier must provide the notice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the PWS supplier are to fit the specific situation, but must be designed to reach residential, transient, and non-transient users of the water system. In order to reach all persons served, a water supplier is to use, at a minimum, one or more of the following forms of delivery:

1) Appropriate broadcast media (such as radio and television);

2) Posting of the notice in conspicuous locations throughout the area served by the water supplier;

3) Hand delivery of the notice to persons served by the water supplier; or

4) Another delivery method approved in writing by the Agency by a SEP issued pursuant to Section 611.110.

BOARD NOTE: Derived from 40 CFR 141.202 ~~(2002)~~ (2006), as amended at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.903 Tier 2 Public Notice: Form, Manner, and Frequency of Notice

a) Violations or situations that require a Tier 2 public notice. This subsection (a) lists the violation categories and other situations requiring a Tier 2 public notice. Appendix G to this Part identifies the tier assignment for each specific violation or situation.

1) All violations of the MCL, MRDL, and treatment technique requirements, except where a Tier 1 notice is required under Section 611.902(a) or where the Agency determines by a SEP issued pursuant to Section 611.110 that a Tier 1 notice is required~~;~~.

2) Violations of the monitoring and testing procedure requirements, where the Agency determines by a SEP issued pursuant to Section 611.110 that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation~~; and~~.

3) Failure to comply with the terms and conditions of any relief equivalent to a SDWA section 1415 variance or a SDWA section 1416 exemption in place.

4) Failure to take corrective action or failure to maintain at least 4-log

treatment of viruses (using inactivation, removal, or a Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer pursuant to Section 611.803(a).

b) When Tier 2 public notice is to be provided.

1) A PWS supplier must provide the public notice as soon as practical, but no later than 30 days after the supplier learns of the violation. If the public notice is posted, the notice must remain in place for as long as the violation or situation persists, but in no case for less than seven days, even if the violation or situation is resolved. The Agency may, in appropriate circumstances, by a SEP issued pursuant to Section 611.110, allow additional time for the initial notice of up to three months from the date the supplier learns of the violation. It is not appropriate for the Agency to grant an extension to the 30-day deadline for any unresolved violation or to allow across-the-board extensions by rule or policy for other violations or situations requiring a Tier 2 public notice. Extensions granted by the Agency must be in writing.

2) The PWS supplier must repeat the notice every three months as long as the violation or situation persists, unless the Agency determines that appropriate circumstances warrant a different repeat notice frequency. In no circumstance may the repeat notice be given less frequently than once per year. It is not appropriate for the Agency to allow less frequent repeat notice for an MCL violation under the Total Coliform Rule or a treatment technique violation under the Surface Water Treatment Rule or Interim Enhanced Surface Water Treatment Rule. It is also not appropriate for the Agency to allow across-the-board reductions in the repeat notice frequency for other ongoing violations requiring a Tier 2 repeat notice. An Agency determination allowing repeat notices to be given less frequently than once every three months must be in writing.

3) For the turbidity violations specified in this subsection (b)(3), a PWS supplier must consult with the Agency as soon as practical but no later than 24 hours after the supplier learns of the violation, to determine whether a Tier 1 public notice under Section 611.902(a) is required to protect public health. When consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notice of the violation within the next 24 hours (i.e., no later than 48 hours after the supplier learns of the violation), following the requirements under Section 611.902(b) and (c). Consultation with the Agency is required for the following:

A) Violation of the turbidity MCL under Section 611.320(b); or

B) Violation of the SWTR, IESWTR, or treatment technique

requirement resulting from a single exceedence of the maximum allowable turbidity limit.

c) The form and manner of Tier 2 public notice. A PWS supplier must provide the initial public notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

1) Unless directed otherwise by the Agency in writing, by a SEP issued pursuant to Section 611.110, a CWS supplier must provide notice by the following:

A) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the PWS supplier; and

B) Any other method reasonably calculated to reach other persons regularly served by the supplier, if they would not normally be reached by the notice required in subsection (c)(1)(A) of this Section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places served by the supplier or on the Internet; or delivery to community organizations.

2) Unless directed otherwise by the Agency in writing, by a SEP issued pursuant to Section 611.110, a non-CWS supplier must provide notice by the following means:

A) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the supplier, or by mail or direct delivery to each customer and service connection (where known); and

B) Any other method reasonably calculated to reach other persons served by the system if they would not normally be reached by the notice required in subsection (c)(2)(A) of this Section. Such persons may include those served who may not see a posted notice because the posted notice is not in a location they routinely pass by. Other methods may include the following: Publication in a local newspaper or newsletter distributed to customers; use of E-

mail to notify employees or students; or delivery of multiple copies in central locations (e.g., community centers).

BOARD NOTE: Derived from 40 CFR 141.203 ~~(2002)~~ (2006), as amended at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.911 Special Notice for Cryptosporidium

a) When the special notice for repeated failure to monitor must be given. The owner or operator of a CWS or non-CWS that is required to monitor source water pursuant to Section 611.1001 must notify persons served by its water system that monitoring has not been completed as specified no later than 30 days after the system has failed to collect any three months of monitoring, as specified in Section 611.1001(c). The notice must be repeated as specified in Section 141.203(b).

b) When the special notice for failure to determine bin classification or mean Cryptosporidium level must be given. The owner or operator of a CWS or non-CWS that is required to determine a bin classification pursuant to Section 611.1010, or one that is required to determine mean Cryptosporidium level pursuant to Section 611.1012, must notify persons served by its water system that the determination has not been made as required no later than 30 days after the system has failed report the determination as specified in Section 611.1010(e) or Section 611.1012(a), respectively. The supplier must repeat the notice as specified in Section 141.203(b). The notice is not required if the system is complying with a State-approved schedule to address the violation.

c) The form and manner of the special notice. The form and manner of the public notice must follow the requirements for a Tier 2 public notice prescribed in Section 611.903(c). The public notice must be presented as required in Section 611.905(c).

d) Mandatory language must be contained in the special notice. The notice must contain all of the following language, including the language necessary to fill in the blanks:

1) The special notice for repeated failure to conduct monitoring must contain the following mandatory language:

We are required to monitor the source of your drinking water for Cryptosporidium. Results of the monitoring are to be used to determine whether water treatment at the [treatment plant name] is sufficient to adequately remove Cryptosporidium from your drinking water. We are required to complete this monitoring and

make this determination by [required bin determination date]. We [insert the applicable of the following at this point: "did not monitor or test" or "did not complete all monitoring or testing"] on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, must be made to ensure adequate Cryptosporidium removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the deadline required, [date]. For more information, please call [name of water system contact] of [name of water system] at [phone number].

2) The special notice for failure to determine bin classification or mean Cryptosporidium level must contain the following mandatory language:

We are required to monitor the source of your drinking water for Cryptosporidium in order to determine by [date] whether water treatment at the [treatment plant name] is sufficient to adequately remove Cryptosporidium from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of [date]. For more information, please call [name of water system contact] of [name of water system] at [phone number].

3) Each special notice must also include a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.

BOARD NOTE: Derived from 40 CFR 141.211 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

SUBPART W: INITIAL DISTRIBUTION SYSTEM EVALUATIONS

Section 611.920 General Requirements

a) USEPA has designated that the requirements of this Subpart W constitute National Primary Drinking Water Regulations. The regulations in this Subpart W establish monitoring and other requirements for identifying Subpart Y compliance monitoring locations for determining compliance with maximum contaminant levels for TTHMs and HAA5. The supplier must use an initial distribution system evaluation (IDSE) to determine the locations in its distribution system that are representative of high TTHM and HAA5 concentrations throughout the supplier's distribution system. An IDSE is used in conjunction with, but separate from, Subpart I compliance monitoring, to identify and select Subpart Y compliance monitoring locations.

b) Applicability. A supplier is subject to the requirements of this Subpart W if it fulfills any of the following conditions:

1) The supplier owns or operates a community water system that uses a primary or residual disinfectant other than ultraviolet light;

2) The supplier delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light; or

3) The supplier owns or operates a non-transient non-community water system that serves at least 10,000 people and it either uses a primary or residual disinfectant other than ultraviolet light or it delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.

c) Schedule. A supplier must comply with the requirements of this Subpart W on the schedule provided in subsection (c)(1) of this Section based on its system type, as set forth in the applicable of subsections (c)(1)(A) through (c)(1)(D) of this Section, subject to the conditions of subsections (c)(1)(E) through (c)(1)(G) of this Section:

1) Compliance dates.

A) A supplier that serves a population of 100,000 or more persons must either have submitted its standard monitoring plan, its system-specific study plan, or its 40/30 certification or obtain or have been subject to a very small system waiver by October 1, 2006. The supplier must further complete its standard monitoring or system-specific study by September 30, 2008 and submit its IDSE report to the Agency by January 1, 2009.

B) A supplier that serves a population of 50,000 to 99,999 persons must either have submitted its standard monitoring plan, its system-specific study plan, or its 40/30 certification or obtain or have been subject to a very small system waiver by April 1, 2007. The supplier must further complete its standard monitoring or system-specific study by March 31, 2009 and submit its IDSE report to the Agency by July 1, 2009.

C) A supplier that serves a population of 10,000 to 49,999 persons must must either submit its standard monitoring plan, its system-specific study plan, or its 40/30 certification or obtain or be subject to a very small system waiver by October 1, 2007. The supplier must further complete its standard monitoring or system-specific study by September 30, 2009 and submit its IDSE report to the

Agency by January 1, 2010.

D) A supplier that serves a population of fewer than 10,000 persons (and which is a CWS) must either submit its standard monitoring plan, its system-specific study plan, or its 40/30 certification or obtain or be subject to a very small system waiver by April 1, 2008. The supplier must further complete its standard monitoring or system-specific study by March 31, 2010 and submit its IDSE report to the Agency by July 1, 2010.

E) If, within 12 months after the date identified in this column, the Agency does not approve a supplier's plan or notify the supplier that it has not yet completed its review, the supplier may consider the plan that it submitted as approved. The supplier must implement that plan, and it must complete standard monitoring or a system-specific study no later than the date when completion of the standard monitoring or system-specific study is due, as identified in the applicable of subsections (a)(1) through (a)(4) of this Section.

F) The supplier must submit its 40/30 certification pursuant to Section 611.923 by the date indicated in the applicable of subsections (a)(1) through (a)(4) of this Section.

G) If, within three months after the date identified in this column (nine months after the date identified in this column if the supplier must comply on the schedule in subsection (c)(1)(C) of this Section), the Agency does not approve the supplier's IDSE report or notify the supplier that it has not yet completed its review, the supplier may consider the report that it submitted to the Agency as approved and the supplier must implement the recommended Subpart Y monitoring as required.

2) For the purpose of determining the applicable compliance schedule in subsection (c)(1) of this Section, the Agency may, by a SEP issued pursuant to Section 611.110, determine that a combined distribution system does not include certain consecutive systems based on such factors as the receipt of water from a wholesale system only on an emergency basis or the receipt of only a small percentage and small volume of water from a wholesale system. The Agency may also determine, by a SEP issued pursuant to Section 611.110, that a combined distribution system does not include certain wholesale systems based on such factors as the delivery of water to a consecutive system only on an emergency basis or the delivery of only a small percentage and small volume of water to a consecutive system.

d) A supplier must do one of the following: it must conduct standard monitoring that meets the requirements in Section 611.921; it must a system-specific study that meets the requirements in Section 611.922; it must certify to the Agency that it meets the 40/30 certification criteria under Section 611.923; or it must qualify for a very small system waiver under Section 611.924.

1) The supplier must have taken the full complement of routine TTHM and HAA5 compliance samples required of a system that serves the appropriate population and using the appropriate source water under Subpart I of this Part (or the supplier must have taken the full complement of reduced TTHM and HAA5 compliance samples required of a system with the supplier's population and source water under Subpart I of this Part if the supplier meet reduced monitoring criteria under Subpart I of this Part) during the period specified in Section 611.923(a) to meet the 40/30 certification criteria in Section 611.923. The supplier must have taken TTHM and HAA5 samples under Sections 611.381 and 611.382 to be eligible for the very small system waiver in Section 611.924.

2) If the supplier has not taken the required samples, the supplier must conduct standard monitoring that meets the requirements in Section 611.921, or a system-specific study that meets the requirements in Section 611.922.

e) The supplier must use only the analytical methods specified in Section 611.381, or otherwise approved by the Agency for monitoring under this Subpart W, to demonstrate compliance with the requirements of this Subpart W.

f) IDSE results will not be used for the purpose of determining compliance with MCLs in Section 611.312.

BOARD NOTE: Derived from 40 CFR 141.600 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.921 Standard Monitoring

a) Standard monitoring plan. A supplier's standard monitoring plan must comply with subsections (a)(1) through (a)(4) of this Section. The supplier must prepare and submit its standard monitoring plan to the Agency according to the appropriate of the schedules provided in Section 611.920(c).

1) The supplier's standard monitoring plan must include a schematic of its distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating locations and dates of all projected standard monitoring, and all projected Subpart I compliance monitoring.

2) The supplier's standard monitoring plan must include justification of standard monitoring location selection and a summary of data the supplier relied on to justify standard monitoring location selection.

3) The supplier's standard monitoring plan must specify the population served and its system type (i.e., that it is a Subpart B or groundwater system).

4) The supplier must retain a complete copy of its standard monitoring plan submitted under this subsection (a), including any Agency modification of the plan, for as long as the supplier is required to retain its IDSE report under subsection (c)(4) of this Section.

b) Standard monitoring.

1) The supplier must monitor as indicated in the applicable of subsections (b)(1)(A) through (b)(1)(P), subject to the limitations of subsections (b)(1)(Q) and (b)(1)(R). The supplier must collect dual sample sets at each monitoring location. One sample in the dual sample set must be analyzed for TTHM. The other sample in the dual sample set must be analyzed for HAA5. The supplier must conduct one monitoring period during the peak historical month for TTHM levels or HAA5 levels or the month of warmest water temperature. The supplier must review available compliance, study, or operational data to determine the peak historical month for TTHM or HAA5 levels or warmest water temperature. Source water type Population size category

A) A Subpart B system supplier that serves fewer than 500 persons and which operates a consecutive system must collect samples once each calendar year during the peak historical month: one near an entry point to the distribution system and one at a high TTHM location, for a total of two samples during each monitoring period.

B) A Subpart B system supplier that serves fewer than 500 persons and which does not operate a consecutive system must collect samples once each calendar year during the peak historical month: one at a high TTHM location and one at a high HAA5 location, for a total of two samples during each monitoring period.

C) A Subpart B system supplier that serves 500 to 3,300 persons and which operates a consecutive system must collect samples four times each calendar year (once every 90 days): one near an entry point to the distribution system and one at a high TTHM location, for a total of two samples during each monitoring period.

D) A Subpart B system supplier that serves 500 to 3,300 persons and which operates a consecutive system must collect samples four times each calendar year (once every 90 days): one at a high TTHM location and one at a high HAA5 location, for a total of two samples during each monitoring period.

E) A Subpart B system supplier that serves 3,301 to 9,999 persons must collect samples four times each calendar year (once every 90 days): one at a location in the distribution system that represents the average residence time, two at high TTHM locations, and one at a high HAA5 location, for a total of four samples during each monitoring period.

F) A Subpart B system supplier that serves 10,000 to 49,999 persons must collect samples six times each calendar year (once every 60 days): one near an entry point to the distribution system, two at locations in the distribution system that represent the average residence time, three at each TTHM locations, and two at high HAA5 locations, for a total of eight samples during each monitoring period.

G) A Subpart B system supplier that serves 50,000 to 249,999 persons must collect samples six times each calendar year (once every 60 days): three near entry points to the distribution system, four at locations in the distribution system that represent the average residence time, five at high TTHM locations, and four at high HAA5 locations, for a total of 16 samples during each monitoring period.

H) A Subpart B system supplier that serves 250,000 to 999,999 persons must collect samples six times each calendar year (once every 60 days): four near entry points to the distribution system, six at locations in the distribution system that represent the average residence time, eight at high TTHM locations, and six at high HAA5 locations, for a total of 24 samples during each monitoring period.

I) A Subpart B system supplier that serves 1,000,000 to 4,999,999 persons must collect samples six times each calendar year (once every 60 days): six near entry points to the distribution system, eight at locations in the distribution system that represent the average residence time, 10 at high TTHM locations, and eight at high HAA5 locations, for a total of 32 samples during each monitoring period.

J) A Subpart B system supplier that serves 5,000,000 or more persons must collect samples six times each calendar year (once every 60 days): eight near entry points to the distribution system, 10 at locations in the distribution system that represent the average residence time, 12 at high TTHM locations, and 10 at high HAA5 locations, for a total of 40 samples during each monitoring period.

K) A groundwater system supplier that serves fewer than 500 persons and which operates a consecutive system must collect samples once each calendar year during the peak historical month: one near an entry point to the distribution system and one at a high TTHM location, for a total of two samples during each monitoring period.

L) A groundwater system supplier that serves fewer than 500 persons and which does not operate a consecutive system must collect samples once each calendar year during the peak historical month: one at a high TTHM location and one at a high HAA5 location, for a total of two samples during each monitoring period.

M) A groundwater system supplier that serves 500 to 9,999 persons and which operates a consecutive system must collect samples four times each calendar year (once every 90 days): one at a high TTHM location and one at a high HAA5 location, for a total of two samples during each monitoring period.

N) A groundwater system supplier that serves 10,000 to 99,999 persons and which operates a consecutive system must collect samples four times each calendar year (once every 90 days): one near an entry point to the distribution system, one at a location in the distribution system that represents the average residence time, two at high TTHM locations, and two at high HAA5 locations, for a total of six samples during each monitoring period.

O) A groundwater system supplier that serves 100,000 to 499,999 persons and which operates a consecutive system must collect samples four times each calendar year (once every 90 days): one near an entry point to the distribution system, one at a location in the distribution system that represents the average residence time, three at high TTHM locations, and three at high HAA5 locations, for a total of eight samples during each monitoring period.

P) A groundwater system supplier that serves 500,000 or more persons and which operates a consecutive system must collect samples four times each calendar year (once every 90 days): two near an entry points to the distribution system, two at locations in

the distribution system that represent the average residence time, four at high TTHM locations, and four at high HAA5 locations, for a total of 12 samples during each monitoring period.

Q) A dual sample set (i.e., a TTHM and an HAA5 sample) must be taken at each monitoring location during each monitoring period.

R) The "peak historical month," the purposes of subsections (b)(1)(A), (b)(1)(B), (b)(1)(K), and (b)(1)(L) of this Section, is the month with the highest TTHM or HAA5 levels or the warmest water temperature.

2) The supplier must take samples at locations other than the existing Subpart I monitoring locations. Monitoring locations must be distributed throughout the distribution system.

3) If the number of entry points to the distribution system is fewer than the specified number of entry point monitoring locations, excess entry point samples must be replaced with equally at high TTHM and HAA5 locations. If there is an odd extra location number, the supplier must take a sample at a high TTHM location. If the number of entry points to the distribution system is more than the specified number of entry point monitoring locations, the supplier must take samples at the entry points to the distribution system that have the highest annual water flows.

4) The supplier's monitoring under this subsection (b) may not be reduced under the provisions of Section 611.500, and the Agency may not reduce the supplier's monitoring using the provisions of Section 622.161.

c) IDSE report. A supplier's IDSE report must include the elements required in subsections (c)(1) through (c)(4) of this Section. The supplier must submit its IDSE report to the Agency according to the applicable of the schedules set forth in Section 611.920(c).

1) The supplier's IDSE report must include all TTHM and HAA5 analytical results from Subpart I compliance monitoring and all standard monitoring conducted during the period of the IDSE as individual analytical results and LRAAs presented in a tabular or spreadsheet format acceptable to the Agency. If changed from the supplier's standard monitoring plan submitted pursuant to subsection (a) of this Section, the supplier's report must also include a schematic of the supplier's distribution system, the population served, and system type (Subpart B system or groundwater system).

2) The supplier's IDSE report must include an explanation of any deviations from the supplier's approved standard monitoring plan.

3) The supplier must recommend and justify Subpart Y compliance monitoring locations and timing based on the protocol in Section 611.925.

4) The supplier must retain a complete copy of its IDSE report submitted under this section for 10 years after the date on which the supplier submitted the supplier's report. If the Agency modifies the Subpart Y monitoring requirements that the supplier recommended in its IDSE report or if the Agency approves alternative monitoring locations pursuant to Section 611.161, the supplier must keep a copy of the Agency's notification on file for 10 years after the date of the Agency's notification. The supplier must make the IDSE report and any Agency notification available for review by the Agency or the public.

BOARD NOTE: Derived from 40 CFR 141.601 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.922 System-Specific Studies

a) System-specific study plan. A supplier's system-specific study plan must be based on either existing monitoring results, as required under subsection (a)(1) of this Section, or modeling, as required under subsection (a)(2) of this Section. The supplier must prepare and submit the supplier's system-specific study plan to the Agency according to the schedule in Section 611.920(c).

1) Existing monitoring results. A supplier may comply by submitting monitoring results collected before it is required to begin monitoring pursuant to Section 611.920(c). The monitoring results and analysis must meet the criteria in subsections (a)(1)(A) and (a)(1)(B) of this Section.

A) Minimum requirements.

i) TTHM and HAA5 results must be based on samples collected and analyzed in accordance with Section 611.381. Samples must be collected no earlier than five years prior to the study plan submission date.

ii) The monitoring locations and frequency must meet the conditions identified in the applicable of subsections (a)(1)(A)(iii) through (a)(1)(A)(xv) of this Section. Each location must be sampled once during the peak historical month for TTHM levels or HAA5 levels or the month of warmest water temperature for every 12 months of data submitted for that location. Monitoring results must include all Subpart I compliance monitoring results, plus

additional monitoring results as necessary to meet minimum sample requirements.

iii) A Subpart B system supplier that serves fewer than 500 persons must collect samples from three monitoring locations: three samples for TTHM and three samples for HAA5.

iv) A Subpart B system supplier that serves 500 to 3,300 persons must collect samples from three monitoring locations: nine samples for TTHM and nine samples for HAA5.

v) A Subpart B system supplier that serves 3,301 to 9,999 persons must collect samples from six monitoring locations: 36 samples for TTHM and 36 samples for HAA5.

vi) A Subpart B system supplier that serves 10,000 to 49,999 persons must collect samples from each of 12 monitoring locations: 72 samples for TTHM and 72 samples for HAA5.

vii) A Subpart B system supplier that serves 50,000 to 249,999 persons must collect samples from 24 monitoring locations: 144 samples for TTHM and 144 samples for HAA5.

viii) A Subpart B system supplier that serves 250,000 to 999,999 persons must collect samples from 36 monitoring locations: 216 samples for TTHM and 216 samples for HAA5.

ix) A Subpart B system supplier that serves 1,000,000 to 4,999,999 persons must collect samples from 48 monitoring locations: 288 samples for TTHM and 288 samples for HAA5.

x) A Subpart B system supplier that serves 5,000,000 or more persons must collect samples from 60 monitoring locations: 360 samples for TTHM and 360 samples for HAA5.

xi) A groundwater system supplier that serves fewer than 500 persons must collect samples from three monitoring locations: three samples for TTHM and three samples for HAA5.

x) A groundwater system supplier that serves 500 to 9,999 persons must collect samples from three monitoring locations: nine samples for TTHM and nine samples for HAA5.

xi) A groundwater system supplier that serves 10,000 to 99,999 persons must collect samples from 12 monitoring locations: 48 samples for TTHM and 48 samples for HAA5.

xii) A groundwater system supplier that serves 100,000 to 499,999 persons must collect samples from 18 monitoring locations: 72 samples for TTHM and 72 samples for HAA5.

xiii) A groundwater system supplier that serves 500,000 or more persons must collect samples from 24 monitoring locations: 96 samples for TTHM and 96 samples for HAA5.

B) Reporting monitoring results. A supplier must report the following information:

i) The supplier must report previously collected monitoring results and certify that the reported monitoring results include all compliance and noncompliance results generated during the time period that began with the first reported result and which ended with the most recent Subpart I results;

ii) The supplier must certify that the samples were representative of the entire distribution system and treatment and that the distribution system and treatment have not changed significantly since the samples were collected;

iii) The supplier's study monitoring plan must include a schematic of its distribution system (including distribution system entry points and their sources and storage facilities in the system), with notes indicating the locations and dates of all completed or planned system-specific study monitoring;

iv) The supplier's system-specific study plan must specify the population served and its system type (i.e., that it is a Subpart B or groundwater system);

v) The supplier must retain a complete copy of its system-specific study plan submitted under this subsection (a)(1), including any Agency modification of the supplier's system-specific study plan, for as long as the supplier is required to retain its IDSE report under subsection (b)(5) of this Section; and

vi) If the supplier submits previously collected data that fully meet the number of samples required under subsection (a)(1)(A)(ii) of this Section, and the Agency rejects some of the data in writing, by a SEP issued pursuant to Section 611.110, the supplier must either conduct additional monitoring to replace rejected data on a schedule approved by the Agency in the SEP, or it must conduct standard monitoring under Section 611.921;

2) Modeling. A supplier may comply through analysis of an extended-period simulation hydraulic model. The extended-period simulation hydraulic model and analysis must meet the following criteria:

A) Minimum extended-period hydraulic model requirements.

i) The extended-period hydraulic model must simulate 24 hour variation in demand and show a consistently repeating 24 hour pattern of residence time.

ii) The extended-period hydraulic model must represent the criteria listed in subsection (a)(2)(D) of this Section.

BOARD NOTE: This subsection (a)(2)(A)(ii) is derived from 40 CFR 141.602 (1996). The Board has codified 40 CFR 141.602(a)(2)(i)(B)(*1*) through (a)(2)(i)(B)(*9*) as subsections (a)(2)(D)(i) through (a)(2)(D)(ix) of this Section to comport with Illinois Administrative Code codification requirements.

iii) The extended-period hydraulic model must be calibrated or have calibration plans for the current configuration of the distribution system during the period of high TTHM formation potential. All storage facilities in the system must be evaluated as part of the calibration process. All required calibration must be completed no later than 12 months after the suppliers has submitted the plan.

B) Reporting modeling. The supplier's system-specific study plan must include the following information:

i) Tabular or spreadsheet data demonstrating that the model meets requirements in subsections (a)(2)(A)(ii) and (a)(2)(D) of this Section;

ii) A description of all calibration activities undertaken and, if calibration is complete, a graph of predicted tank levels versus measured tank levels for the system storage facility with the highest residence time in each pressure zone, and a time-series graph of the residence time at the longest residence time storage facility in the distribution system showing the predictions for the entire simulation period (i.e., from time zero until the time it takes to for the model to reach a consistently repeating pattern of residence time);

iii) Model output showing preliminary 24-hour average residence time predictions throughout the distribution system;

iv) The timing and the number of samples representative of the distribution system planned for at least one monitoring period of TTHM and HAA5 dual-sample monitoring at a number of locations no fewer than would be required for the system under standard monitoring in Section 611.921 during the historical month of high TTHM. These samples must be taken at locations other than existing Subpart I compliance monitoring locations;

v) A description of how all requirements will be completed no later than 12 months after the supplier submit the supplier's system-specific study plan;

vi) A schematic of the supplier's distribution system (including distribution system entry points and their sources and system storage facilities), with notes indicating the locations and dates of all completed system-specific study monitoring (if calibration is complete) and all Subpart I compliance monitoring;

vii) The population served and system type (i.e., that it is a Subpart B or groundwater system); and

viii) The supplier must retain a complete copy of the supplier's system-specific study plan submitted under this subsection (a)(2), including any Agency modification of the supplier's system-specific study plan, for as long as the supplier is

required to retain the supplier's IDSE report under subsection (b)(7) of this Section.

C) If the supplier submit a model that does not fully meet the requirements under subsection (a)(2) of this Section, the supplier must correct the Agency-cited deficiencies, and respond to Agency inquiries concerning the model. If the supplier fail to correct deficiencies or respond to inquiries to the Agency's satisfaction, the supplier must conduct standard monitoring under Section 611.921.

D) The extended-period hydraulic model must represent the following criteria:

i) 75 percent of pipe volume;

ii) 50 percent of pipe length;

iii) All pressure zones;

iv) All 12-inch diameter and larger pipes;

v) All eight-inch and larger pipes that connect pressure zones, influence zones from different sources, storage facilities, major demand areas, pumps, and control valves or which are known or expected to be significant conveyors of water;

vi) All six-inch and larger pipes that connect remote areas of a distribution system to the main portion of the system;

vii) All storage facilities with standard operations represented in the model;

viii) All active pump stations with controls represented in the model; and

ix) All active control valves.

BOARD NOTE: This subsection (a)(2)(D) is derived from 40 CFR 141.602(a)(2)(i)(B) (1996). The Board has codified 40 CFR 141.602(a)(2)(i)(B)(*1*) through (a)(2)(A)(ii)(*9*) as subsections (a)(2)(D)(i) through (a)(2)(D)(ix) of this Section to comport with Illinois Administrative Code codification requirements.

b) IDSE report. The supplier's IDSE report must include the elements required in subsections (b)(1) through (b)(6) of this Section. The supplier must submit its

IDSE report according to the applicable of the schedules in Section 611.920(c).

1) The supplier's IDSE report must include all TTHM and HAA5 analytical results from Subpart I compliance monitoring and all system-specific study monitoring conducted during the period of the system-specific study presented in a tabular or spreadsheet format acceptable to the Agency. If changed from the supplier's system-specific study plan submitted under subsection (a) of this Section, the supplier's IDSE report must also include a schematic of its distribution system, the population served, and system type (i.e., that it is a Subpart B or groundwater system).

2) If the supplier used the modeling provision under subsection (a)(2) of this Section, it must include final information for the elements described in subsection (a)(2)(ii) of this Section, and a 24-hour time-series graph of residence time for each Subpart Y compliance monitoring location selected.

3) The supplier must recommend and justify Subpart Y compliance monitoring locations and timing based on the protocol in Section 611.925.

4) The supplier's IDSE report must include an explanation of any deviations from its approved system-specific study plan.

5) The supplier's IDSE report must include the basis (analytical and modeling results) and justification that it used to select the recommended Subpart Y monitoring locations.

6) The supplier may submit its IDSE report in lieu of its system-specific study plan on the schedule identified in Section 611.920(c) for submission of the system-specific study plan if the supplier believes that it has the necessary information by the time that the system-specific study plan is due. If the supplier elects this approach, its IDSE report must also include all information required under subsection (a) of this Section.

7) The supplier must retain a complete copy of its IDSE report submitted under this section for 10 years after the date that the supplier submitted its IDSE report. If the Agency modifies the Subpart Y monitoring requirements that the supplier recommended in the supplier's IDSE report or if the Agency approves alternative monitoring locations, the supplier must keep a copy of the Agency's notification on file for 10 years after the date of the Agency's notification. The supplier must make the IDSE report and any Agency notification available for review by the Agency or the public.

BOARD NOTE: Derived from 40 CFR 141.602 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.923 40/30 Certification

a) Eligibility. A supplier is eligible for 40/ 30 certification if it had no TTHM or HAA5 monitoring violations under Subpart I of this Part and no individual sample exceeded 0.040 mg/ℓ for TTHM or 0.030 mg/ℓ for HAA5 during a eight consecutive calendar quarter period beginning no earlier than the date specified in the applicable of subsections (a)(1) through (a)(4) of this Section, subject to the limitations of subsection (a)(5) of this Section.

1) If the supplier's 40/30 certification is due no later than October 1, 2006, then its eligibility for 40/30 certification is based on eight consecutive calendar quarters of Subpart I compliance monitoring results beginning no earlier than January 2004.

2) If the supplier's 40/30 certification is due no later than April 1, 2007, then its eligibility for 40/30 certification is based on eight consecutive calendar quarters of Subpart I compliance monitoring results beginning no earlier than January 2004.

3) If the supplier's 40/30 certification is due no later than October 1, 2007, then its eligibility for 40/30 certification is based on eight consecutive calendar quarters of Subpart I compliance monitoring results beginning no earlier than January 2005.

4) If the supplier's 40/30 certification is due no later than April 1, 2008, then its eligibility for 40/30 certification is based on eight consecutive calendar quarters of Subpart I compliance monitoring results beginning no earlier than January 2005.

5) Unless the supplier is on reduced monitoring under Subpart I of this Part and was not required to monitor during the specified period. If the supplier did not monitor during the specified period, the supplier must base its eligibility on compliance samples taken during the 12 months preceding the specified period.

b) 40/30 certification.

1) A supplier must certify to the Agency that every individual compliance sample taken under Subpart I of this Part during the applicable of the periods specified in subsection (a) of this Section were no more than 0.040 mg/ℓ for TTHM and 0.030 mg/ℓ for HAA5, and that the supplier has not had any TTHM or HAA5 monitoring violations during the period specified in subsection (a) of this Section.

2) The Agency may require the supplier to submit compliance monitoring results, distribution system schematics, or recommended Subpart Y compliance monitoring locations in addition to the supplier's certification. If the supplier fails to submit the requested information, the Agency may require standard monitoring under Section 611.921 or a system-specific study under Section 611.922.

3) The Agency may still require standard monitoring under Section 611.921 or a system-specific study under Section 611.922 even if the supplier meets the criteria in subsection (a) of this Section.

4) The supplier must retain a complete copy of its certification submitted under this section for 10 years after the date that it submitted the supplier's certification. The supplier must make the certification, all data upon which the certification is based, and any Agency notification available for review by the Agency or the public.

BOARD NOTE: Derived from 40 CFR 141.603 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.924 Very Small System Waivers

a) If the supplier serves fewer than 500 people and it has taken TTHM and HAA5 samples pursuant to Subpart I of this Part, the supplier is not required to comply with this Subpart W unless the Agency notifies the supplier, by a SEP issued pursuant to Section 611.110, that it must conduct standard monitoring pursuant to Section 611.921 or a system-specific study pursuant to Section 611.922.

b) If the supplier has not taken TTHM and HAA5 samples pursuant to Subpart I of this Part or if the Agency notifies the supplier, by a SEP issued pursuant to Section 611.110, that it must comply with this Subpart W, the supplier must conduct standard monitoring pursuant to Section 611.921 or a system-specific study pursuant to Section 611.922.

BOARD NOTE: Derived from 40 CFR 141.604 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.925 Subpart Y Compliance Monitoring Location Recommendations

a) A supplier's IDSE report must include its recommendations and justification for where and during what months it will conduct TTHM and HAA5 monitoring for Subpart Y of this Part. The supplier must base its recommendations on the criteria set forth in subsections (b) through (e) of this Section.

b) The supplier must select the number of monitoring locations specified in the applicable of subsections (b)(1) through (b)(13) of this Section, subject to the limitations of subsections (b)(14) and (b)(15) of this Section. The supplier will use these recommended locations as Subpart Y routine compliance monitoring locations, unless the Agency requires different or additional locations. The supplier should distribute locations throughout the distribution system to the extent possible.

1) A Subpart B system supplier that serves fewer than 500 persons must annually collect samples from two monitoring locations: one sample from the highest TTHM location and one sample from the highest HAA5 location.

2) A Subpart B system supplier that serves 500 to 3,300 persons must quarterly collect samples from two monitoring locations: one sample from the highest TTHM location and one sample from the highest HAA5 location.

3) A Subpart B system supplier that serves 3,301 to 9,999 persons must quarterly collect samples from two monitoring locations: one sample from the highest TTHM location and one sample from the highest HAA5 location.

4) A Subpart B system supplier that serves 10,000 to 49,999 persons must quarterly collect samples from four monitoring locations: two samples from the highest TTHM location, one sample from the highest HAA5 location, and one sample from an existing Subpart I compliance location.

5) A Subpart B system supplier that serves 50,000 to 249,999 persons must quarterly collect samples from eight monitoring locations: three samples from the highest TTHM location, three samples from the highest HAA5 locations, and two samples from existing Subpart I compliance locations.

6) A Subpart B system supplier that serves 250,000 to 999,999 persons must quarterly collect samples from 12 monitoring locations: five samples from the highest TTHM location, four samples from the highest HAA5 locations, and three samples from existing Subpart I compliance locations.

7) A Subpart B system supplier that serves 1,000,000 to 4,999,999 persons must quarterly collect samples from 16 monitoring locations: six samples from the highest TTHM location, six samples from the highest HAA5 locations, and four samples from existing Subpart I compliance locations.

8) A Subpart B system supplier that serves more than 5,000,000 persons must quarterly collect samples from 20 monitoring locations: eight samples from the highest TTHM location, seven samples from the highest

HAA5 locations, and five samples from existing Subpart I compliance locations.

9) A groundwater system supplier that serves fewer than 500 persons must annually collect samples from two monitoring locations: one sample from the highest TTHM location and one sample from the highest HAA5 location.

10) A groundwater system supplier that serves 500 to 9,999 persons must annually collect samples from two monitoring locations: one sample from the highest TTHM location and one sample from the highest HAA5 location.

11) A groundwater system supplier that serves 10,000 to 99,999 persons must quarterly collect samples from four monitoring locations: two samples from the highest TTHM locations, one sample from the highest HAA5 location, and one sample from an existing Subpart I compliance location.

12) A groundwater system supplier that serves 100,000 to 499,999 persons must quarterly collect samples from six monitoring locations: three samples from the highest TTHM locations, two samples from the highest HAA5 locations, and one sample from an existing Subpart I compliance location.

13) A groundwater system supplier that serves more than 500,000 persons must quarterly collect samples from eight monitoring locations: three samples from the highest TTHM locations, three samples from the highest HAA5 locations, and two samples from existing Subpart I compliance locations.

14) The supplier must monitor during month of highest DBP concentrations.

15) A supplier on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for a Subpart B system supplier that serves 500 to 3,300. A supplier on annual monitoring and a Subpart B system supplier that serves 500 to 3,300 is required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. Only one location with a dual sample set per monitoring period is needed if the highest TTHM and HAA5 concentrations occur at the same location and month, if monitored annually).

c) The supplier must recommend Subpart Y compliance monitoring locations based on standard monitoring results, system-specific study results, and Subpart I compliance monitoring results. The supplier must follow the protocol in subsections (c)(1) through (c)(8) of this Section. If required to monitor at more

than eight locations, the supplier must repeat the protocol as necessary. If the supplier do not have existing Subpart I compliance monitoring results or if the supplier do not have enough existing Subpart I compliance monitoring results, the supplier must repeat the protocol, skipping the provisions of subsections (c)(3) and (c)(7) of this Section as necessary, until the supplier has identified the required total number of monitoring locations.

1) The location with the highest TTHM LRAA not previously selected as a Subpart Y monitoring location.

2) The location with the highest HAA5 LRAA not previously selected as a Subpart Y monitoring location.

3) The existing Subpart I average residence time compliance monitoring location (maximum residence time compliance monitoring location for a groundwater system) with the highest HAA5 LRAA not previously selected as a Subpart Y monitoring location.

4) The location with the highest TTHM LRAA not previously selected as a Subpart Y monitoring location.

5) The location with the highest TTHM LRAA not previously selected as a Subpart Y monitoring location.

6) The location with the highest HAA5 LRAA not previously selected as a Subpart Y monitoring location.

7) The existing Subpart I average residence time compliance monitoring location (maximum residence time compliance monitoring location for a groundwater system) with the highest TTHM LRAA not previously selected as a Subpart Y monitoring location.

8) The location with the highest HAA5 LRAA not previously selected as a Subpart Y monitoring location.

d) The supplier may recommend locations other than those specified in subsection (c) of this Section if the supplier include a rationale for selecting other locations. If the Agency approves the alternative locations, the supplier must monitor at these locations to determine compliance under Subpart Y of this part.

e) The supplier's recommended schedule must include Subpart Y monitoring during the peak historical month for TTHM and HAA5 concentration, unless the Agency approves another month. Once the supplier has identified the peak historical month, and if the supplier are required to conduct routine monitoring at least quarterly, the supplier must schedule Subpart Y compliance monitoring at a regular frequency of every 90 days or fewer.

BOARD NOTE: Derived from 40 CFR 141605 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

SUBPART Y—STAGE 2 DISINFECTION BYPRODUCTS REQUIREMENTS

Section 611.970 General Requirements

a) General. The requirements of this Subpart Y constitute NPDWRs. The regulations in this Subpart Y establish monitoring and other requirements for achieving compliance with MCLs based on LRAAs for TTHM and HAA5, and for achieving compliance with MRDLs for chlorine and chloramine for certain consecutive systems.

b) Applicability. A supplier is subject to these requirements if its system is a CWS or a NTNCWS that uses a primary or residual disinfectant other than ultraviolet light or which delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.

c) Schedule. A supplier must comply with the requirements in this Subpart Y on the applicable schedule set forth in subsections (c)(1) through (c)(6) of this Section based on the supplier's system type, subject to the limitations of subsection (b)(7) of this Section.

1) A supplier that is not part of a combined distribution system, or a supplier whose system serves the largest population in a combined system, and whose system serves 100,000 or more persons must comply with the requirements of this Subpart Y before April 1, 2012.

2) A supplier that is not part of a combined distribution system, or a supplier whose system serves the largest population in a combined system, and whose system serves 50,000 to 99,999 persons must comply with the requirements of this Subpart Y before October 1, 2012.

3) A supplier that is not part of a combined distribution system, or a supplier whose system serves the largest population in a combined system, and whose system serves 10,000 to 49,999 persons must comply with the requirements of this Subpart Y before October 1, 2013.

4) A supplier that is not part of a combined distribution system, or a supplier whose system serves the largest population in a combined system, and whose system serves fewer than 10,000 persons must comply with the requirements of this Subpart Y before October 1, 2013 if no Cryptosporidium monitoring is required pursuant to Section 611.1001(a)(4).

5) A supplier that is not part of a combined distribution system, or a supplier whose system serves the largest population in a combined system, and whose system serves fewer than 10,000 persons must comply with the requirements of this Subpart Y before October 1, 2014 if Cryptosporidium monitoring is required pursuant to Section 611.1001(a)(4) or (a)(6).

6) A supplier whose consecutive system or wholesale system that is part of a combined system, other than a supplier that is subject to any of subsections (c)(1) through (c)(4) of this Section, must comply with the requirements of this Subpart Y before the earliest compliance date applicable to any segment of the combined distribution system.

7) The Agency must, by a SEP issued pursuant to Section 611.110, grant up to an additional 24 months for compliance with MCLs and operational evaluation levels if it finds that the additional is needed because the supplier requires capital improvements to comply with an MCL.

8) The supplier's monitoring frequency is specified in Section 611.971(a)(2).

A) If a supplier is required to conduct quarterly monitoring, it must begin monitoring in the first full calendar quarter that includes the applicable compliance date set forth in this subsection (c).

B) If a supplier is required to conduct monitoring less frequently than quarterly, it must begin monitoring in the calendar month recommended in the IDSE report prepared pursuant to Section 611.921 or Section 611.922 or in the calendar month identified in the Subpart Y monitoring plan developed pursuant to Section 611.972, but in no instance later than 12 months after the applicable compliance date set forth in this subsection (c).

9) If a supplier is required to conduct quarterly monitoring, it must make compliance calculations at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter (or earlier if the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters). If a supplier is required to conduct monitoring less frequently than quarterly, it must make compliance calculations beginning with the first compliance sample taken after the compliance date.

10) For the purpose of the schedule set forth in this subsection (c), the Agency may, by a SEP issued pursuant to Section 611.110, determine that the combined distribution system does not include certain consecutive systems based on factors such as receipt of water from a wholesale system

only on an emergency basis or receipt of only a small percentage and small volume of water from a wholesale system. The Agency may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivery of water to a consecutive system only on an emergency basis or delivery of only a small percentage and small volume of water to a consecutive system.

BOARD NOTE: The Board found it necessary to deviate from the structure of 40 CFR 141.620(c) when incorporating this subsection (c). Subsections (c)(1) through (c)(4) of this Section correspond with 40 CFR 141.620(c)(1) through (c)(4). Subsections (c)(5) and (c)(6) of this Section correspond with the two segments of 40 CFR 141.620(c)(5). Subsection (c)(7) of this Section corresponds with the footnote to the table in 40 CFR 141.620(c). Subsections (c)(8) through (c)(10) of this Section correspond with 40 CFR 141.620(c)(6) through (c)(8).

d) Monitoring and compliance.

1) Suppliers required to monitor quarterly. To comply with Subpart Y MCLs in Section 611.312(b)(2), the supplier must calculate LRAAs for TTHM and HAA5 using monitoring results collected under this Subpart Y, and it must determine that each LRAA does not exceed the MCL. If the supplier fails to complete four consecutive quarters of monitoring, it must calculate compliance with the MCL based on the average of the available data from the most recent four quarters. If the supplier takes more than one sample per quarter at a monitoring location, it must average all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation.

2) Suppliers required to monitor yearly or less frequently. To determine compliance with Subpart Y MCLs in Section 611.312(b)(2), the supplier must determine that each sample taken is less than the MCL. If any sample exceeds the MCL, the supplier must comply with the requirements of Section 611.975. If no sample exceeds the MCL, the sample result for each monitoring location is considered the LRAA for that monitoring location.

e) Violation for failure to monitor. A supplier is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if the supplier fails to monitor.

BOARD NOTE: Derived from 40 CFR 141.620 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.971 Routine Monitoring

a) Monitoring.

1) If a supplier submitted an IDSE report, it must begin monitoring at the locations and during the months that the supplier has recommended in its IDSE report submitted pursuant to Section 611.925, following the schedule set forth in Section 611.970(c), unless the Agency, by a SEP issued pursuant to Section 611.110, requires other locations or additional locations after its review. If the supplier submitted a 40/30 certification pursuant to Section 611.923, it qualified for a very small system waiver pursuant to Section 611.924, or it is a NTNCWS that serves fewer than 10,000 persons, the supplier must monitor at the locations and on the dates identified in its monitoring plan as described in Section 611.382(f), updated as required by Section 611.972.

2) The supplier must monitor at no fewer than the number of locations identified in the applicable of subsections (a)(2)(A) through (a)(2)(M) of this Section, subject to the limitations of subsections (a)(2)(N) and (a)(2)(O) of this Section.

A) A Subpart B system supplier that serves fewer than 500 persons must monitor annually at two distribution system monitoring locations during each monitoring period.

B) A Subpart B system supplier that serves 500 to 3,300 persons must monitor quarterly at two distribution system monitoring locations during each monitoring period.

C) A Subpart B system supplier that serves 3,301 to 9,999 persons must monitor quarterly at two distribution system monitoring locations during each monitoring period.

D) A Subpart B system supplier that serves 10,000 to 49,999 persons must monitor quarterly at four distribution system monitoring locations during each monitoring period.

E) A Subpart B system supplier that serves 50,000 to 249,999 persons must monitor quarterly at eight distribution system monitoring locations during each monitoring period.

F) A Subpart B system supplier that serves 250,000 to 999,999 persons must monitor quarterly at 12 distribution system monitoring locations during each monitoring period.

G) A Subpart B system supplier that serves 1,000,000 to 4,999,999

persons must monitor quarterly at 16 distribution system monitoring locations during each monitoring period.

H) A Subpart B system supplier that serves 5,000,000 or more persons must monitor quarterly at 20 distribution system monitoring locations during each monitoring period.

I) A groundwater system supplier that serves fewer than 500 persons must monitor annually at two distribution system monitoring locations during each monitoring period.

J) A groundwater system supplier that serves 500 to 9,999 persons must monitor annually at two distribution system monitoring locations during each monitoring period.

K) A groundwater system supplier that serves 10,000 to 99,999 persons must monitor quarterly at four distribution system monitoring locations during each monitoring period.

L) A groundwater system supplier that serves 100,000 to 499,999 persons must monitor quarterly at six distribution system monitoring locations during each monitoring period.

M) A groundwater system supplier that serves 500,000 or more persons must monitor quarterly at eight distribution system monitoring locations during each monitoring period.

N) The supplier must monitor during month of highest DBP concentrations.

O) A supplier on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for a Subpart B system supplier that serves 500 to 3,300. A supplier on annual monitoring or a Subpart B system supplier that serves 500 to 3,300 is required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. Only one location with a dual sample set per monitoring period is needed if the highest TTHM and HAA5 concentrations occur at the same location (and month, if monitored annually).

3) If a supplier is an undisinfected system that begins using a disinfectant other than UV light after the dates set forth in Subpart W of this Part for complying with the IDSE requirements, the supplier must consult with the Agency to identify compliance monitoring locations for this Subpart Y. The supplier must then develop a monitoring plan pursuant to Section

611.972 that includes those monitoring locations.

b) Analytical methods. A supplier must use an approved method listed in Section 611.381 for TTHM and HAA5 analyses in this Subpart Y. Analyses must be conducted by laboratories that have received certification by USEPA or the Agency as specified in Section 611.381.

BOARD NOTE: Derived from 40 CFR 141.621 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.972 Subpart Y Monitoring Plan

a) Development of a monitoring plan.

1) A supplier must develop and implement a monitoring plan that it must keep on file for Agency and public review. The monitoring plan must contain the elements set forth in subsections (a)(1)(A) through (a)(1)(D) of this Section, and it must be complete no later than the date when the supplier conducts its initial monitoring pursuant to this Subpart Y.

A) Monitoring locations;

B) Monitoring dates;

C) Compliance calculation procedures; and

D) Monitoring plans for any other systems in the combined distribution system if the Agency has reduced monitoring requirements pursuant to Section 611.161.

2) If the supplier was not required to submit an IDSE report pursuant to either Section 611.921 or Section 611.922, and it does not have sufficient Subpart I monitoring locations to identify the required number of Subpart Y compliance monitoring locations indicated in Section 611.925(b), the supplier must identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified. The supplier must also provide the rationale for identifying the locations as having high levels of TTHM or HAA5. If the supplier has more Subpart I monitoring locations than required for Subpart Y compliance monitoring in Section 611.925(b), it must identify which locations it will use for Subpart Y compliance monitoring by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of Subpart Y compliance monitoring locations have been identified.

b) A Subpart B system supplier that serves more than 3,300 people must submit a copy of its monitoring plan to the Agency prior to the date it conducts its initial monitoring pursuant to this Subpart Y, unless the supplier's IDSE report submitted under Subpart W of this Part contains all the information required by this Section.

c) After consultation with the Agency regarding the need for and appropriateness of changes and issuance of a SEP pursuant to Section 611.110 that provides for the changes, a supplier may revise its monitoring plan to reflect changes in treatment, distribution system operations and layout (including new service areas), or other factors that may affect TTHM or HAA5 formation, or for Agency-approved reasons. If the supplier changes monitoring locations, the supplier must replace existing compliance monitoring locations with the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels. The Agency may, by a SEP issued pursuant to Section 611.110, also require modifications in the supplier's monitoring plan. If a supplier is a Subpart B system supplier that serves more than 3,300 people, it must submit a copy of its modified monitoring plan to the Agency prior to the date when it is required to comply with the revised monitoring plan.

BOARD NOTE: Derived from 40 CFR 141.622 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.973 Reduced Monitoring

a) A supplier may reduce monitoring to the level specified in the applicable of subsections (a)(1) through (a)(13) of this Section, subject to the limitation of subsection (a)(14) of this Section, any time the LRAA is 0.040 mg/ℓ or less for TTHM and 0.030 mg/ℓ or less for HAA5 at all monitoring locations. The supplier may only use data collected pursuant to the provisions of this Subpart Y or pursuant to Subpart I of this Part to qualify for reduced monitoring. In addition, the source water annual average TOC level, before any treatment, must be 4.0 mg/ℓ or less at each treatment plant treating surface water or groundwater under the direct influence of surface water, based on monitoring conducted pursuant to either Section 611.382(b)(1)(C) or Section 611.382(d).

1) A Subpart B system supplier that serves fewer than 500 persons may not qualify for reduced monitoring.

2) A Subpart B system supplier that serves 500 to 3,300 persons may qualify for reduced monitoring to a minimum of one TTHM sample collected annually from the location and during the quarter with the highest single TTHM measurement and one HAA5 sample collected annually from the location and during the quarter with the highest single HAA5

measurement, with the two samples collected as one dual sample set if the highest TTHM and HAA5 measurements occurred at the same location and during the same quarter.

3) A Subpart B system supplier that serves 3,301 to 9,999 persons may qualify for reduced monitoring to a minimum of one dual sample set collected annually for TTHM from the location and during the quarter with the highest single TTHM measurement and one dual sample set collected annually for HAA5 from the location and during the quarter with the highest single HAA5 measurement.

4) A Subpart B system supplier that serves 10,000 to 49,999 persons may qualify for reduced monitoring to a minimum of two dual sample sets collected quarterly from the locations with the highest single TTHM and HAA5 LRAAs.

5) A Subpart B system supplier that serves 50,000 to 249,999 persons may qualify for reduced monitoring to a minimum of four dual sample sets collected quarterly from the locations with the two highest TTHM and two HAA5 LRAAs.

6) A Subpart B system supplier that serves 250,000 to 999,999 persons may qualify for reduced monitoring to a minimum of six dual sample sets collected quarterly from the locations with the three highest TTHM and three HAA5 LRAAs.

7) A Subpart B system supplier that serves 1,000,000 to 4,999,999 persons may qualify for reduced monitoring to a minimum of eight dual sample sets collected quarterly from the locations with the four highest TTHM and four HAA5 LRAAs.

8) A Subpart B system supplier that serves more than 5,000,000 persons may qualify for reduced monitoring to a minimum of 10 dual sample sets collected quarterly from the locations with the five highest TTHM and five HAA5 LRAAs.

9) A groundwater system supplier that serves fewer than 500 persons may qualify for reduced monitoring to a minimum of one TTHM sample collected triennially from the location and during the quarter with the highest single TTHM measurement and one HAA5 sample collected annually from the location and during the quarter with the highest single HAA5 measurement, with the two samples collected as one dual sample set if the highest TTHM and HAA5 measurements occurred at the same location and during the same quarter.

10) A groundwater system supplier that serves 500 to 9,999 persons may

qualify for reduced monitoring to a minimum of one TTHM sample collected triennially from the location and during the quarter with the highest single TTHM measurement and one HAA5 sample collected annually from the location and during the quarter with the highest single HAA5 measurement, with the two samples collected as one dual sample set if the highest TTHM and HAA5 measurements occurred at the same location and during the same quarter.

11) A groundwater system supplier that serves 10,000 to 99,999 persons may qualify for reduced monitoring to a minimum of one TTHM dual sample set collected annually from the location and during the quarter with the highest single TTHM measurement and one HAA5 dual sample set collected annually from the location and one HAA5 sample collected annually from the location and during the quarter with the highest single HAA5 measurement.

12) A groundwater system supplier that serves 100,000 to 499,999 persons may qualify for reduced monitoring to a minimum of two dual sample sets collected quarterly from the locations with the highest single TTHM and highest HAA5 LRAAs.

13) A groundwater system supplier that serves more than 500,000 persons may qualify for reduced monitoring to a minimum of four dual sample sets collected quarterly from the two locations with the highest TTHM and two highest HAA5 LRAAs.

14) A supplier on quarterly monitoring must take dual sample sets every 90 days.

b) The supplier may remain on reduced monitoring as long as the TTHM LRAA remains less than or equal to 0.040 mg/ℓ and the HAA5 LRAA remains less than or equal to 0.030 mg/ℓ at each monitoring location (for a supplier with quarterly reduced monitoring) or each TTHM sample is less than or equal to 0.060 mg/ℓ and each HAA5 sample is less than or equal to 0.045 mg/ℓ (for a supplier with annual or less frequent monitoring). In addition, the source water annual average TOC level, before any treatment, must be less than or equal to 4.0 mg/ℓ at each treatment plant treating surface water or groundwater under the direct influence of surface water, based on monitoring conducted pursuant to either Section 611.382(b)(1)(C) or 611.382(d).

c) If the LRAA based on quarterly monitoring at any monitoring location exceeds either 0.040 mg/ℓ for TTHM or 0.030 mg/ℓ for HAA5, if the annual (or less frequent) sample at any location exceeds either 0.060 mg/ℓ for TTHM or 0.045 mg/ℓ for HAA5, or if the source water annual average TOC level, before any treatment, exceeds 4.0 mg/ℓ at any treatment plant treating surface water or groundwater under the direct influence of surface water, the supplier must resume

routine monitoring pursuant to Section 611.971 or begin increased monitoring if Section 611.975 applies.

d) The Agency may return a supplier to routine monitoring by a SEP issued pursuant to Section 611.110.

BOARD NOTE: Derived from 40 CFR 141.623 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.974 Additional Requirements for Consecutive Systems

If a supplier has a consecutive system that does not add a disinfectant but which delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light, it must comply with the analytical and monitoring requirements for chlorine and chloramines in Sections 611.381(c) and 611.382(c)(1) and with the compliance requirements in Section 611.383(c)(1) beginning April 1, 2009, unless the supplier is required to comply earlier by the Agency, and the supplier must report monitoring results pursuant to Section 611.384(c).

BOARD NOTE: Derived from 40 CFR 141.624 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.975 Conditions Requiring Increased Monitoring

a) If a supplier is required to monitor at a particular location annually or less frequently than annually pursuant to Section 611.971 or 611.973, it must increase monitoring to dual sample sets once per quarter (taken every 90 days) at all locations if a TTHM sample exceeds 0.080 mg/ℓ or a HAA5 sample exceeds 0.060 mg/ℓ at any location.

b) A supplier is in violation of the MCL when the LRAA exceeds the Subpart Y MCLs in Section 611.312(b)(2), calculated based on four consecutive quarters of monitoring (or the LRAA calculated based on fewer than four quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters). The supplier is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if it fails to monitor.

c) A supplier may return to routine monitoring once it has conducted increased monitoring for at least four consecutive quarters, and the LRAA for every monitoring location is less than or equal to 0.060 mg/ℓ for TTHM and less than or equal to 0.045 mg/ℓ for HAA5.

BOARD NOTE: Derived from 40 CFR 141.625 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.976 Operational Evaluation Levels

a) A supplier has exceeded the operational evaluation level at any monitoring location where the sum of the two previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by 4 to determine an average, exceeds 0.080 mg/ℓ, or where the sum of the two previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by 4 to determine an average, exceeds 0.060 mg/ℓ.

b) Effects of exceeding the operational evaluation level.

1) If a supplier exceeds the operational evaluation level, the supplier must conduct an operational evaluation and submit a written report of the evaluation to the Agency no later than 90 days after being notified of the analytical result that causes it to exceed the operational evaluation level. The written report must be made available to the public upon request.

2) The supplier's operational evaluation must include an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedences.

A) A supplier may request and the Agency may allow the supplier to limit the scope of its evaluation if the supplier is able to identify the cause of the operational evaluation level exceedence.

B) A supplier's request to limit the scope of the evaluation does not extend the schedule in subsection (b)(1) of this Section for submitting the written report. The Agency must approve this limited scope of evaluation in writing, and the supplier must keep that approval with the completed report.

BOARD NOTE: Derived from 40 CFR 141.626 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.977 Requirements for Remaining on Reduced TTHM and HAA5 Monitoring Based on Subpart I Results

A supplier may remain on reduced monitoring after the applicable dates identified in Section 611.970(c) for compliance with this Subpart Y only if the supplier fulfills each of the requirements set forth in subsections (a) through (c) of this Section, subject to the limitations of

subsection (d) of this Section:

a) The supplier qualifies for a 40/30 certification pursuant to Section 611.923 or it has received a very small system waiver pursuant to Section 611.924;

b) The supplier meets the reduced monitoring criteria set forth in Section 611.973(a); and

c) The supplier does not change or add monitoring locations from those used for compliance monitoring under Subpart I of this Part.

d) If the supplier's monitoring locations pursuant to this Subpart Y differ from its monitoring locations pursuant to Subpart I of this Part, the supplier may not remain on reduced monitoring after the dates identified in Section 611.970(c) for the purposes of compliance with this Subpart Y.

BOARD NOTE: Derived from 40 CFR 141.627 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.978 Requirements for Remaining on Increased TTHM and HAA5 Monitoring Based on Subpart I Results

If a supplier was on increased monitoring pursuant to Section 611.382(b)(1), it must remain on increased monitoring until it qualifies for a return to routine monitoring pursuant to Section 611.975(c). The supplier must conduct increased monitoring pursuant to Section 611.975 at the monitoring locations in the monitoring plan developed pursuant to Section 611.972 beginning at the applicable date identified in Section 611.970(c) for compliance with this Subpart Y, and it must remain on increased monitoring until the supplier qualifies for a return to routine monitoring pursuant to Section 611.975(c).

BOARD NOTE: Derived from 40 CFR 141.628 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.979 Reporting and Recordkeeping Requirements

a) Reporting.

1) A supplier must report the following information to the Agency within 10 days of the end of any quarter in which monitoring is required for each monitoring location:

A) The number of samples taken during the last quarter;

B) The date and results of each sample taken during the last quarter;

C) The arithmetic average of quarterly results for the last four quarters for each monitoring location (LRAA), beginning at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter. If the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, the supplier must report this information to the Agency as part of the first report due following the compliance date or anytime thereafter that this determination is made. If the supplier is required to conduct monitoring at a frequency that is less than quarterly, it must make compliance calculations beginning with the first compliance sample taken after the compliance date, unless the supplier is required to conduct increased monitoring pursuant to Section 611.975;

D) A statement whether, based on Section 611.312(b)(2) and this Subpart Y, the MCL was violated at any monitoring location; and

E) Any operational evaluation levels that were exceeded during the quarter and, if so, the location and date, and the calculated TTHM and HAA5 levels.

2) If a supplier is a Subpart B system supplier that seeks to qualify for or remain on reduced TTHM and HAA5 monitoring, it must report the following source water TOC information for each treatment plant that treats surface water or groundwater under the direct influence of surface water to the Agency within 10 days of the end of any quarter in which monitoring is required:

A) The number of source water TOC samples taken each month during last quarter;

B) The date and result of each sample taken during last quarter;

C) The quarterly average of monthly samples taken during last quarter or the result of the quarterly sample;

D) The running annual average (RAA) of quarterly averages from the past four quarters; and

E) Whether the RAA exceeded 4.0 mg/ℓ.

3) The Agency may, by a SEP issued pursuant to Section 611.110, choose to perform calculations and determine whether the MCL was exceeded or the system is eligible for reduced monitoring in lieu of having the system

report that information pursuant to this Section.

b) Recordkeeping. A supplier must retain any Subpart Y monitoring plans and the supplier's Subpart Y monitoring results as required by Section 611.860.

BOARD NOTE: Derived from 40 CFR 141.629 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM

Section 611.1000 General Requirements

a) The requirements of this Subpart Z are NPDWRs. The regulations in this Subpart Z establish or extend treatment technique requirements in lieu of maximum contaminant levels for Cryptosporidium. These requirements are in addition to requirements for filtration and disinfection in Subparts B, R, and X of this Part.

b) Applicability. The requirements of this Subpart Z apply to all Subpart B systems, which are PWSs supplied by a surface water source and PWSs supplied by a groundwater source under the direct influence of surface water.

1) A wholesale system supplier, as defined in Section 141.2, must comply with the requirements of this Subpart Z based on the population of the largest system in the combined distribution system.

2) The requirements of this Subpart Z for filtered system suppliers apply to a supplier required by NPDWRs to provide filtration treatment, whether or not the supplier is currently operating a filtration system.

3) The requirements of this Subpart Z for an unfiltered system supplier apply only to an unfiltered system supplier that timely met and continued to meet the filtration avoidance criteria in Subparts B, R, and X of this Part, as applicable.

c) Requirements. A supplier subject to this Subpart Z must comply with the following requirements:

1) The supplier must conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source. This monitoring may include sampling for Cryptosporidium, E. coli, and turbidity as described in Sections 611.1001 through 611.1006, to determine what level, if any, of additional Cryptosporidium treatment the supplier must provide.

2) The supplier that plans to make a significant change to its disinfection

practice must develop disinfection profiles and calculate disinfection benchmarks, as described in Sections 611.1008 through 611.1009.

3) A filtered system supplier must determine its Cryptosporidium treatment bin classification as described in Section 611.1010, and provide additional treatment for Cryptosporidium, if required, as described in Section 611.1011. An unfiltered system supplier must provide treatment for Cryptosporidium as described in Section 611.1012. A filtered or unfiltered system supplier must implement Cryptosporidium treatment according to the schedule in Section 611.1013.

4) A supplier whose system has uncovered finished water storage facilities must comply with the requirements to cover the facility or treat the discharge from the facility as described in Section 611.1014.

5) A supplier required to provide additional treatment for Cryptosporidium must implement microbial toolbox options that are designed and operated as described in Sections 611.1015 through 611.1020.

6) The supplier must comply with the applicable recordkeeping and reporting requirements described in Sections 611.1021 through 611.1022.

7) The supplier must address significant deficiencies identified in sanitary surveys performed by USEPA or the Agency, as described in Section 611.1023.

BOARD NOTE: Derived from 40 CFR 141.700 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1001 Source Water Monitoring Requirements: Source Water Monitoring

a) Initial round of source water monitoring. A supplier must conduct the following monitoring on the schedule in subsection (c) of this Section, unless it meets the monitoring exemption criteria in subsection (d) of this Section.

1) A filtered system supplier that serves 10,000 or more people must sample its source water for Cryptosporidium, E. coli, and turbidity at least monthly for 24 months.

2) An unfiltered system supplier that serves 10,000 or more people must sample its source water for Cryptosporidium at least monthly for 24 months.

3) Smaller system supplier monitoring for E. coli.

A) A filtered system supplier that serves fewer than 10,000 people must sample its source water for E. coli at least once every two weeks for 12 months.

B) A filtered system supplier that serves fewer than 10,000 people may avoid E. coli monitoring if the system notifies the State that it will monitor for Cryptosporidium as described in subsection (a)(4) of this Section. The system must notify the Agecny no later than three months prior to the date before which the system is otherwise required to start E. coli monitoring pursuant to Section 611.1001(c).

4) Smaller system supplier monitoring for Cryptosporidium. A filtered system supplier that serves fewer than 10,000 people must sample their source water for Cryptosporidium at least twice per month for 12 months or at least monthly for 24 months if it meets any of the conditions set forth in subsections (a)(4)(A) through (a)(4)(C) of this Section, subject to the limitations of subsection (a)(4)(D) of this Section, based on monitoring conducted pursuant to subsection (a)(3) of this Section:

A) For a supplier whose system uses lake or reservoir sources, the annual mean E. coli concentration is greater than 10 E. coli/100 m.

B) For a supplier whose system uses flowing stream sources, the annual mean E. coli concentration is greater than 50 E. coli/ 100 mℓ.

C) The supplier does not conduct E. coli monitoring as described in subsection (a)(3) of this Section.

D) A supplier that uses groundwater under the direct influence of surface water must comply with the requirements of subsection (a)(4) of this Section based on the E. coli level that applies to the nearest surface water body. If no surface water body is nearby, the system must comply based on the requirements that apply to a supplier whose system uses lake or reservoir sources.

5) For a filtered system supplier that serves fewer than 10,000 people, the Agency may, by a SEP issued pursuant to Section 611.110, approve monitoring for an indicator other than E. coli pursuant to subsection (a)(3) of this Section. The Agency may also, by a SEP issued pursuant to Section 611.110, approve an alternative to the E. coli concentration in subsection (a)(4)(A), (a)(4)(B) or (a)(4)(D) of this Section to trigger Cryptosporidium monitoring. This approval by the Agency must be provided to the supplier in writing, and it must include the basis for the Agency's determination that the alternative indicator or trigger level will

provide a more accurate identification of whether a system will exceed the Bin 1 Cryptosporidium level set forth in Section 611.1010.

6) An unfiltered system supplier that serves fewer than 10,000 people must sample its source water for Cryptosporidium at least twice per month for 12 months or at least monthly for 24 months.

7) A supplier may sample more frequently than required by this Section if the sampling frequency is evenly spaced throughout the monitoring period.

b) Second round of source water monitoring. A supplier must conduct a second round of source water monitoring that meets the requirements for monitoring parameters, frequency, and duration described in subsection (a) of this Section, unless it meets the monitoring exemption criteria in subsection (d) of this Section. The supplier must conduct this monitoring on the schedule set forth in subsection (c) of this Section.

c) Monitoring schedule. A supplier must begin the monitoring required in subsections (a) and (b) of this Section no later than the month beginning with the applicable date listed in subsections (c)(1) through (c)(5) of this Section.

1) A supplier that serves 100,000 or more persons must begin the first round of source water monitoring no later than the month beginning October 1, 2006, and it must begin the second round or source water monitoring no later than the month beginning April 1, 2015.

2) A supplier that serves 50,000 to 99,999 persons must begin the first round of source water monitoring no later than the month beginning April 1, 2007, and it must begin the second round or source water monitoring no later than the month beginning October 1, 2015.

3) A supplier that serves 10,000 to 49,999 persons must begin the first round of source water monitoring no later than the month beginning April 1, 2008, and it must begin the second round or source water monitoring no later than the month beginning October 1, 2016.

4) A supplier that serves fewer than 10,000 persons, that is a filtered system supplier, and which monitors for E. coli must begin the first round of source water monitoring no later than the month beginning October 1, 2008, and it must begin the second round or source water monitoring no later than the month beginning October 1, 2016.

5) A supplier that serves fewer than 10,000 persons, that is a filtered system supplier, which meets the conditions of subsection (a)(4) of this Section, and which monitors for Cryptosporidium must begin the first round of

source water monitoring no later than the month beginning April 1, 2010, and it must begin the second round or source water monitoring no later than the month beginning April 1, 2019.

d) Monitoring avoidance.

1) A filtered system supplier is not required to conduct source water monitoring pursuant to this Subpart Z if the system will provide a total of at least 5.5-log of treatment for Cryptosporidium, equivalent to meeting the treatment requirements of Bin 4 in Section 611.1011.

2) An unfiltered system supplier is not required to conduct source water monitoring pursuant to this Subpart Z if the system will provide a total of at least 3-log Cryptosporidium inactivation, equivalent to meeting the treatment requirements for an unfiltered system supplier with a mean Cryptosporidium concentration of greater than 0.01 oocysts/ℓ in Section 611.1012.

3) If a supplier chooses to provide the level of treatment set forth in subsection (d)(1) or (d)(2) of this Section, as applicable, rather than start source water monitoring, it must notify the Agency in writing no later than the date on which the system is otherwise required to submit a sampling schedule for monitoring pursuant to Section 611.1002. Alternatively, a supplier may choose to stop sampling at any point after it has initiated monitoring if it notifies the Agency in writing that it will provide this level of treatment. The supplier must install and operate technologies to provide this level of treatment before the applicable treatment compliance date set forth in Section 611.1013.

e) Plants operating only part of the year. A supplier that has a Subpart B plant that operates for only part of the year must conduct source water monitoring in accordance with this Subpart Z, but with the following modifications:

1) The supplier must sample its source water only during the months that the plant operates, unless the Agency, by a SEP issued pursuant to Section 611.110, specifies another monitoring period based on plant operating practices.

2) A supplier with plants that operate less than six months per year and which monitors for Cryptosporidium must collect at least six Cryptosporidium samples per year during each of two years of monitoring. Samples must be evenly spaced throughout the period during which the plant operates.

f) New sources and new systems.

1) New sources. A supplier that begins using a new source of surface water or groundwater under the direct influence of surface water after the supplier is required to begin monitoring pursuant to subsection (c) of this Section must monitor the new source on a schedule that the Agency has approved by a SEP issued pursuant to Section 611.110. Source water monitoring must meet the requirements of this Subpart Z. The supplier must also meet the bin classification and Cryptosporidium treatment requirements of Sections 611.1010 and 611.1011 or Section 611.1012, as applicable, for the new source on a schedule that the Agency has approved by a SEP issued pursuant to Section 611.110.

2) The requirements of Section 611.1001(f) apply to a Subpart B system supplier that begins operation after the applicable monitoring start date set forth in subsection (c) of this Section.

3) The supplier must begin a second round of source water monitoring no later than six years following the applicable of the initial bin classification pursuant to Section 611.1010 or the determination of the mean Cryptosporidium level pursuant to Section 611.1012.

g) Failure to collect any source water sample required under this Section in accordance with the sampling schedule, sampling location, analytical method, approved laboratory, and reporting requirements of Sections 611.1002 through 611.1006 is a monitoring violation.

h) Grandfathering monitoring data. A supplier may use (grandfather) monitoring data collected prior to the applicable monitoring start date in subsection (c) of this Section to meet the initial source water monitoring requirements in subsection (a) of this Section. Grandfathered data may substitute for an equivalent number of months at the end of the monitoring period. All data submitted pursuant to this subsection must meet the requirements set forth in Section 611.1007.

BOARD NOTE: Derived from 40 CFR 141.701 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1002 Source Water Monitoring Requirements: Sampling Schedules

a) A supplier required to conduct source water monitoring pursuant to Section 611.1001 must submit a sampling schedule that specifies the calendar dates on which it will collect each required sample.

1) The supplier must submit sampling schedules no later than three months prior to the applicable date listed in Section 611.1001(c) for each round of required monitoring.

2) Submission of the sampling schedule to USEPA.

A) A supplier that serves at least 10,000 people must submit its sampling schedule for the initial round of source water monitoring pursuant to Section 611.1001(a) to USEPA electronically at https://intranet.epa.gov/lt2/.

B) If a supplier is unable to submit the sampling schedule electronically, the supplier may use an alternative approach for submitting the sampling schedule that USEPA approves.

3) A supplier that serves fewer than 10,000 people must submit its sampling schedules for the initial round of source water monitoring Section 611.1001(a) to the Agency.

4) A supplier must submit sampling schedules for the second round of source water monitoring Section 611.1001(b) to the Agency.

5) If USEPA or the Agency does not respond to a supplier regarding its sampling schedule, the supplier must sample at the reported schedule.

b) A supplier must collect samples within two days before or two days after the dates indicated in its sampling schedule (i.e., within a five-day period around the schedule date) unless one of the conditions of subsection (b)(1) or (b)(2) of this Section applies.

1) If an extreme condition or situation exists that may pose danger to the sample collector, or one that cannot be avoided and which causes the supplier to be unable to sample in the scheduled five-day period, the supplier must sample as close to the scheduled date as is feasible, unless the State approves an alternative sampling date by a SEP issued pursuant to Section 611.110. The supplier must submit an explanation for the delayed sampling date to the Agency concurrent with the shipment of the sample to the laboratory.

2) Replacement samples.

A) If a supplier is unable to report a valid analytical result for a scheduled sampling date due to equipment failure; loss of or damage to the sample; failure to comply with the analytical method requirements, including the quality control requirements in Section 611.1004; or the failure of an approved laboratory to analyze the sample, then the supplier must collect a replacement sample.

B) The supplier must collect the replacement sample not later than 21

days after receiving information that an analytical result cannot be reported for the scheduled date, unless the supplier demonstrates that collecting a replacement sample within this time frame is not feasible or the Agency approves an alternative resampling date by a SEP issued pursuant to Section 611.110. The supplier must submit an explanation for the delayed sampling date to the Agency concurrent with the shipment of the sample to the laboratory.

c) A supplier that fails to meet the criteria of subsection (b) of this Section for any source water sample required pursuant to Section 611.1001 must revise its sampling schedule to add dates for collecting all missed samples. A supplier must submit the revised schedule to the Agency for approval prior to collecting the missed samples.

BOARD NOTE: Derived from 40 CFR 141.702 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1003 Source Water Monitoring Requirements: Sampling Locations

a) A supplier required to conduct source water monitoring pursuant to Section 611.1001 must collect samples for each plant that treats a surface water or groundwater under the direct influence of surface water source. Where multiple plants draw water from the same influent, such as the same pipe or intake, the Agency may, by a SEP issued pursuant to Section 611.110, approve one set of monitoring results to be used to satisfy the requirements of Section 611.1001 for all of the plants.

b) Source water sampling.

1) A supplier must collect source water samples prior to chemical treatment, such as coagulants, oxidants, and disinfectants, unless the supplier meets the condition of subsection (b)(2) of this Section.

2) The Agency may, by a SEP issued pursuant to Section 611.110, approve a supplier to collect a source water sample after chemical treatment. To grant this approval, the Agency must determine that collecting a sample prior to chemical treatment is not feasible for the supplier and that the chemical treatment is unlikely to have a significant adverse effect on the analysis of the sample.

c) A supplier that recycles filter backwash water must collect source water samples prior to the point of filter backwash water addition.

d) Bank filtration.

1) A supplier that receives Cryptosporidium treatment credit for bank filtration pursuant to Section 611.743(b) or 611.955(c)(1), as applicable, must collect source water samples in the surface water prior to bank filtration.

2) A supplier that uses bank filtration as pretreatment to a filtration plant must collect source water samples from the well (i.e., after bank filtration). The use of bank filtration during monitoring must be consistent with routine operational practice. A supplier collecting samples after a bank filtration process may not receive treatment credit for the bank filtration pursuant to Section 611.1017(c).

e) Multiple sources. A supplier with plants that use multiple water sources, including multiple surface water sources and blended surface water and groundwater sources, must collect samples as specified in subsection (e)(1) or (e)(2) of this Section. The use of multiple sources during monitoring must be consistent with routine operational practice.

1) If a sampling tap is available where the sources are combined prior to treatment, the supplier must collect samples from the tap.

2) If a sampling tap where the sources are combined prior to treatment is not available, the supplier must collect samples at each source near the intake on the same day, and it must follow either subsection (e)(2)(i) or (e)(2)(ii) of this Section for sample analysis.

A) The supplier may composite samples from each source into one sample prior to analysis. The volume of sample from each source must be weighted according to the proportion of the source in the total plant flow at the time the sample is collected; or

B) The supplier may analyze samples from each source separately and calculate a weighted average of the analysis results for each sampling date. The weighted average must be calculated by multiplying the analysis result for each source by the fraction the source contributed to total plant flow at the time the sample was collected and then summing these values.

f) Additional Requirements. A supplier must submit a description of its sampling locations to the Agency at the same time as the sampling schedule required pursuant to Section 611.1002. This description must address the position of the sampling location in relation to the supplier's water sources and treatment processes, including pretreatment, points of chemical treatment, and filter backwash recycle. If the Agency does not respond to a supplier regarding sampling locations, the supplier must sample at the reported locations.

BOARD NOTE: Derived from 40 CFR 141.703 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1004 Source Water Monitoring Requirements: Analytical Methods

a) Cryptosporidium. A supplier must analyze for Cryptosporidium using USEPA Method 1623 (05) or USEPA Method 1622 (05), each incorporated by reference in Section 611.102.

1) The supplier must analyze at least a 10 ℓ sample or a packed pellet volume of at least 2 mℓ as generated by the methods listed in subsection (a) of this Section. A supplier unable to process a 10 ℓ sample must analyze as much sample volume as can be filtered by two filters approved by USEPA for the methods listed in subsection (a) of this Section, up to a packed pellet volume of at least 2 mℓ.

2) Matrix spike (MS) samples.

A) MS samples, as required by the methods in subsection (a) of this Section, must be spiked and filtered by a laboratory approved for Cryptosporidium analysis pursuant to Section 611.1005.

B) If the volume of the MS sample is greater than 10 ℓ, the supplier may filter all but 10 ℓ of the MS sample in the field, and ship the filtered sample and the remaining 10 ℓ of source water to the laboratory. In this case, the laboratory must spike the remaining 10 ℓ of water and filter it through the filter used to collect the balance of the sample in the field.

3) Flow cytometer-counted spiking suspensions must be used for MS samples and ongoing precision and recovery samples.

b) E. coli. A supplier must use methods for enumeration of E. coli in source water approved in 40 CFR 136.3(a), incorporated by reference in Section 611.102.

1) The time from sample collection to initiation of analysis may not exceed 30 hours, unless the supplier meets the condition of subsection (b)(2) of this Section.

2) The Agency may, by a SEP issued pursuant to Section 611.110, approve on a case-by-case basis the holding of an E. coli sample for up to 48 hours between sample collection and initiation of analysis if it determines that analyzing an E. coli sample within 30 hours is not feasible. E. coli samples held between 30 to 48 hours must be analyzed by the Autoanalysis Colilert System reagent version of Standard Methods, 18th,

19th, and 20th ed., Method 9223, as listed in 40 CFR 136.3(a), incorporated by reference in Section 611.102.

3) A supplier must maintain samples between 0ºC and 10ºC during storage and transit to the laboratory.

c) Turbidity. A supplier must use methods for turbidity measurement approved in Section 611.531(a).

BOARD NOTE: Derived from 40 CFR 141.704 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1005 Source Water Monitoring Requirements: Approved Laboratories

a) Cryptosporidium. A supplier must have Cryptosporidium samples analyzed by a laboratory that is approved under USEPA's Laboratory Quality Assurance Evaluation Program for Analysis of Cryptosporidium in Water or a laboratory that has been certified for Cryptosporidium analysis by the Agency.

b) E. coli. Any laboratory certified by the USEPA, by the National Environmental Laboratory Accreditation Conference, or by the Agency for total coliform or fecal coliform analysis pursuant to Section 611.531 is approved for E. coli analysis pursuant to this Subpart Z when the laboratory uses the same technique for E. coli that the laboratory uses for the purposes of Section 611.531.

c) Turbidity. Measurements of turbidity must be made by a party approved by the Agency.

BOARD NOTE: Derived from 40 CFR 141.705 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1006 Source Water Monitoring Requirements: Reporting Source Water Monitoring Results

a) A supplier must report results from the source water monitoring required pursuant to Section 611.1001 no later than 10 days after the end of the first month following the month when the sample is collected.

b) Submission of analytical results to USEPA.

1) All suppliers that serves at least 10,000 people must report the results from the initial source water monitoring required pursuant to Section 611.1001(a) to USEPA electronically at https://intranet.epa.gov/lt2/.

2) If a supplier is unable to report monitoring results electronically, the supplier may use an alternative approach for reporting monitoring results that USEPA approves.

c) A supplier that serves fewer than 10,000 people must report results from the initial source water monitoring required pursuant to Section 611.1001(a) to the Agency.

d) All suppliers must report results from the second round of source water monitoring required pursuant to Section 611.1001(b) to the Agency.

e) A supplier must report the applicable information in subsections (e)(1) and (e)(2) of this Section for the source water monitoring required pursuant to Section 611.1001.

1) A supplier must report the data elements set forth in subsection (e)(1)(D) of this Section for each Cryptosporidium analysis:

A) For matrix spike samples, a supplier must also report the sample volume spiked and estimated number of oocysts spiked. These data are not required for field samples.

B) For samples in which less than 10 ℓ is filtered or less than 100% of the sample volume is examined, the supplier must also report the number of filters used and the packed pellet volume.

C) For samples in which less than 100% of sample volume is examined, the supplier must also report the volume of resuspended concentrate and volume of this resuspension processed through immunomagnetic separation.

D) Data elements.

i) PWS ID.

ii) Facility ID.

iii) Sample collection date.

iv) Sample type (field or matrix spike).

v) Sample volume filtered (ℓ), to nearest 1⁄4 ℓ.

vi) Was 100% of filtered volume examined.

vii) Number of oocysts counted.

BOARD NOTE: Subsection (e)(1)(D) is derived from unnumbered tabulated text in 40 CFR 141.706(e)(1) (2006).

2) A supplier must report the following data elements for each E. coli analysis:

A) PWS ID;

B) Facility ID;

C) Sample collection date;

D) Analytical method number;

E) Method type;

F) Source type (flowing stream, lake or reservoir, groundwater under the direct influence of surface water);

G) E. coli/100 mℓ.

H) Turbidity, except that a supplier which serves fewer than 10,000 people that is not required to monitor for turbidity pursuant to Section 611.1001 is not required to report turbidity with their E. coli results.

BOARD NOTE: Derived from 40 CFR 141.706 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1007 Source Water Monitoring Requirements: Grandfathering Previously Collected Data

a) Initial source monitoring and Cryptosporidium samples.

1) A supplier may comply with the initial source water monitoring requirements of Section 611.1001(a) by grandfathering sample results collected before the supplier is required to begin monitoring (i.e., previously collected data). To be grandfathered, the sample results and analysis must meet the criteria in this Section and the Agency must approve the use of the data by a SEP issued pursuant to Section 611.110.

2) A filtered system supplier may grandfather Cryptosporidium samples to meet the requirements of Section 611.1001(a) when the supplier does not have corresponding E. coli and turbidity samples. A supplier that

grandfathers Cryptosporidium samples without E. coli and turbidity samples is not required to collect E. coli and turbidity samples when the it completes the requirements for Cryptosporidium monitoring pursuant to Section 611.1001(a).

b) E. coli sample analysis. The analysis of E. coli samples must meet the analytical method and approved laboratory requirements of Sections 611.1004 through 611.1005.

c) Cryptosporidium sample analysis. The analysis of Cryptosporidium samples must meet the criteria in this subsection (c).

1) Laboratories analyzed Cryptosporidium samples using one of the analytical methods in subsections (c)(1)(A) through (c)(1)(D) of this Section.

A) USEPA Method 1623 (05), incorporated by reference in Section 611.102; or

B) USEPA Method 1622 (05), incorporated by reference in Section 611.102.

C) USEPA Method 1623 (01), incorporated by reference in Section 611.102; or

D) USEPA Method 1622 (01), incorporated by reference in Section 611.102.

E) USEPA Method 1623 (99), incorporated by reference in Section 611.102; or

F) USEPA Method 1622 (99), incorporated by reference in Section 611.102.

2) For each Cryptosporidium sample, the laboratory analyzed at least 10 ℓ of sample or at least 2 mℓ of packed pellet or as much volume as could be filtered by two filters that USEPA approved for the methods listed in subsection (c)(1) of this Section.

d) Sampling location. The sampling location must meet the conditions in Section 611.1003.

e) Sampling frequency. Cryptosporidium samples were collected no less frequently than each calendar month on a regular schedule, beginning no earlier than January 1999. Sample collection intervals may vary for the conditions specified in Section 611.1002(b)(1) and (b)(2) if the supplier provides documentation of the

condition when reporting monitoring results.

1) The Agency may, by a SEP issued pursuant to Section 611.110, approve grandfathering of previously collected data where there are time gaps in the sampling frequency if the supplier conducts additional monitoring that the Agency has specified by a SEP issued pursuant to Section 611.110 to ensure that the data used to comply with the initial source water monitoring requirements of Section 611.1001(a) are seasonally representative and unbiased.

2) A supplier may grandfather previously collected data where the sampling frequency within each month varied. If the Cryptosporidium sampling frequency varied, the supplier must follow the monthly averaging procedure in Section 611.1010(b)(5) or Section 611.1012(a)(3), as applicable, when calculating the bin classification for a filtered system supplier or the mean Cryptosporidium concentration for an unfiltered system supplier.

f) Reporting monitoring results for grandfathering. A supplier that requests to grandfather previously collected monitoring results must report the following information by the applicable dates listed in this subsection. A supplier must report this information to the Agency.

1) A supplier must report that they intend to submit previously collected monitoring results for grandfathering. This report must specify the number of previously collected results the supplier will submit, the dates of the first and last sample, and whether a supplier will conduct additional source water monitoring to meet the requirements of Section 611.1001(a). The supplier must report this information no later than the applicable date set forth in Section 611.1002 is required.

2) A supplier must report previously collected monitoring results for grandfathering, along with the associated documentation listed in subsections (f)(2)(A) through (f)(2)(D) of this Section, no later than two months after the applicable date listed in Section 611.1001(c).

A) For each sample result, a supplier must report the applicable data elements in Section 611.1006.

B) A supplier must certify that the reported monitoring results include all results that it generated during the time period beginning with the first reported result and ending with the final reported result. This applies to samples that were collected from the sampling location specified for source water monitoring pursuant to this Subpart Z, which were not spiked, and which were analyzed using the laboratory's routine process for the analytical methods listed in

this Section.

C) The supplier must certify that the samples were representative of a plant's source waters and the source waters have not changed. It must report a description of the sampling locations, which must address the position of the sampling location in relation to its water sources and treatment processes, including points of chemical addition and filter backwash recycle.

D) For Cryptosporidium samples, the laboratory or laboratories that analyzed the samples must provide a letter certifying that the quality control criteria specified in the methods listed in subsection (c)(1) of this Section were met for each sample batch associated with the reported results. Alternatively, the laboratory may provide bench sheets and sample examination report forms for each field, matrix spike, IPR, ongoing precision and recovery, and method blank sample associated with the reported results.

g) If the Agency determines that a previously collected data set submitted for grandfathering was generated during source water conditions that were not normal for the supplier, such as a drought, the Agency may, by a SEP issued pursuant to Section 611.110, disapprove the data. Alternatively, the Agency may, by a SEP issued pursuant to Section 611.110, approve the previously collected data if the supplier reports additional source water monitoring data, as determined by the State, to ensure that the data set used pursuant to Section 611.1010 or 611.1012 represents average source water conditions for the supplier.

h) If a supplier submits previously collected data that fully meet the number of samples required for initial source water monitoring pursuant to Section 611.1001(a), and some of the data are rejected due to not meeting the requirements of this Section, the supplier must conduct additional monitoring to replace rejected data on a schedule that the Agency has approved by a SEP issued pursuant to Section 611.110. A supplier is not required to begin this additional monitoring until two months after notification that data have been rejected and additional monitoring is necessary.

BOARD NOTE: Derived from 40 CFR 141.707 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1008 Disinfection Profiling and Benchmarking Requirements: Requirements When Making a Significant Change in Disinfection Practice

a) Following the completion of initial source water monitoring pursuant to Section 611.1001(a), a supplier that plans to make a significant change to its disinfection practice, as defined in subsection (b) of this Section, must develop disinfection

profiles and calculate disinfection benchmarks for Giardia lamblia and viruses, as described in Section 611.1009. Prior to changing the disinfection practice, the supplier must notify the Agency, and it must include in this notice the following information:

1) A completed disinfection profile and disinfection benchmark for Giardia lamblia and viruses, as described in Section 611.1009;

2) A description of the proposed change in disinfection practice; and

3) An analysis of how the proposed change will affect the current level of disinfection.

b) Significant changes to disinfection practice are defined as any of the following:

1) Changes to the point of disinfection;

2) Changes to the disinfectants used in the treatment plant;

3) Changes to the disinfection process; or

4) Any other modification identified by the Agency, by a SEP issued pursuant to Section 611.110, as a significant change to disinfection practice.

BOARD NOTE: Derived from 40 CFR 141.708 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1009 Disinfection Profiling and Benchmarking Requirements: Developing the Disinfection Profile and Benchmark

a) A supplier required to develop disinfection profiles pursuant to Section 611.1008 must follow the requirements of this Section. The supplier must monitor at least weekly for a period of 12 consecutive months to determine the total log inactivation for Giardia lamblia and viruses. If the supplier monitors more frequently than weekly, the monitoring frequency must be evenly spaced. A supplier that operates for fewer than 12 months per year must monitor weekly during the period of operation. A supplier must determine log inactivation for Giardia lamblia through the entire plant, based on the applicable $CT_{99.9}$ values in Appendix B to this Part. A supplier must determine log inactivation for viruses through the entire treatment plant based on a protocol approved by the Agency by a SEP issued pursuant to Section 611.110.

b) A supplier with a single point of disinfectant application prior to the entrance to the distribution supplier must conduct the monitoring in subsections (b)(1)

through (b)(4) of this Section. A supplier with more than one point of disinfectant application must conduct the monitoring in subsections (b)(1) through (b)(4) of this Section for each disinfection segment. A supplier must monitor the parameters necessary to determine the total inactivation ratio, using analytical methods in Section 611.531.

1) For a supplier using a disinfectant other than UV, the temperature of the disinfected water must be measured at each residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the Agency by a SEP issued pursuant to Section 611.110.

2) For a supplier using chlorine, the pH of the disinfected water must be measured at each chlorine residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the Agency by a SEP issued pursuant to Section 611.110.

3) The disinfectant contact times (t) must be determined during peak hourly flow.

4) The residual disinfectant concentrations (C) of the water before or at the first customer and prior to each additional point of disinfectant application must be measured during peak hourly flow.

c) In lieu of conducting new monitoring pursuant to subsection (b) of this Section, a supplier may elect to meet the following requirements:

1) A supplier that has at least one year of existing data that are substantially equivalent to data collected pursuant to the provisions of subsection (b) of this Section may use these data to develop disinfection profiles as specified in this Section if the supplier has neither made a significant change to its treatment practice nor changed sources since the data were collected. The supplier may develop disinfection profiles using up to three years of existing data.

2) A supplier may use disinfection profiles developed pursuant to Section 141.172 or 611.953 in lieu of developing a new profile if the supplier has neither made a significant change to its treatment practice nor changed sources since the profile was developed. A supplier that has not developed a virus profile pursuant to Section 141.172 or 611.953 must develop a virus profile using the same monitoring data on which the Giardia lamblia profile is based.

d) A supplier must calculate the total inactivation ratio for Giardia lamblia, as specified in subsections (d)(1) through (d)(3) of this Section.

1) A supplier using only one point of disinfectant application may determine the total inactivation ratio for the disinfection segment based on either of the following methods:

A) It may determine one inactivation ratio (Ai) before or at the first customer during peak hourly flow; or

B) Determine successive Ai values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. The supplier must calculate the total inactivation ratio by determining Ai for each sequence and then adding the Ai values together to determine the total inactivation ratio (Σ Ai).

2) A supplier using more than one point of disinfectant application before the first customer must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The Ai value of each segment and Σ Ai must be calculated using the method in subsection (d)(1)(B) of this Section.

3) The supplier must determine the total logs of inactivation by multiplying the value calculated in subsection (d)(1) or (d)(2) of this Section by 3.0.

4) The supplier must calculate the log of inactivation for viruses using a protocol approved by the Agency by regulation or by a SEP issued pursuant to Section 611.110.

e) A supplier must use the following procedures to calculate a disinfection benchmark:

1) For each year of profiling data collected and calculated pursuant to subsections (a) through (d) of this Section, the supplier must determine the lowest mean monthly level of both Giardia lamblia and virus inactivation. A supplier must determine the mean Giardia lamblia and virus inactivation for each calendar month for each year of profiling data by dividing the sum of daily or weekly Giardia lamblia and virus log inactivation by the number of values calculated for that month.

2) The disinfection benchmark is the lowest monthly mean value (for a supplier with one year of profiling data) or the mean of the lowest monthly mean values (for a supplier with more than one year of profiling data) of Giardia lamblia and virus log inactivation in each year of profiling data.

BOARD NOTE: Derived from 40 CFR 141.709 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1010 Treatment Technique Requirements: Bin Classification for Filtered Suppliers

a) Following completion of the initial round of source water monitoring required pursuant to Section 611.1001(a), a filtered system supplier must calculate an initial Cryptosporidium bin concentration for each plant for which monitoring was required. Calculation of the bin concentration must use the Cryptosporidium results reported pursuant to Section 611.1001(a) and must follow the appropriate of the procedures set forth in subsection (b) of this Section.

b) Bin concentration calculation procedures.

1) For a supplier that collects a total of at least 48 samples, the bin concentration is equal to the arithmetic mean of all sample concentrations.

2) For a supplier that collects a total of at least 24 samples, but not more than 47 samples, the bin concentration is equal to the highest arithmetic mean of all sample concentrations in any 12 consecutive months during which Cryptosporidium samples were collected.

3) For a supplier that serves fewer than 10,000 people and which monitors for Cryptosporidium for only one year (i.e., collect 24 samples in 12 months), the bin concentration is equal to the arithmetic mean of all sample concentrations.

4) For a supplier with plants operating only part of the year that monitors fewer than 12 months per year pursuant to Section 611.1001(e), the bin concentration is equal to the highest arithmetic mean of all sample concentrations during any year of Cryptosporidium monitoring.

5) If the monthly Cryptosporidium sampling frequency varies, a supplier must first calculate a monthly average for each month of monitoring. A supplier must then use these monthly average concentrations, rather than individual sample concentrations, in the applicable calculation for bin classification in subsections (b)(1) through (b)(4) of this Section.

c) A filtered system supplier must determine its initial bin classification according to subsections (c)(1) through (c)(5), subject to the limitations of subsection (c)(6) of this Section, and using the Cryptosporidium bin concentration calculated pursuant to subsections (a) and (b) of this Section.

1) For a supplier that is required to monitor for Cryptosporidium pursuant to Section 611.1001 and which has a Cryptosporidium bin concentration of less than 0.075 oocysts/ℓ, the bin classification is Bin 1.

2) For a supplier that is required to monitor for Cryptosporidium pursuant to Section 611.1001 and which has a Cryptosporidium bin concentration of 0.075 oocysts/ℓ or more, but less than 1.0 oocysts/ℓ, the bin classification is Bin 2.

3) For a supplier that is required to monitor for Cryptosporidium pursuant to Section 611.1001 and which has a Cryptosporidium bin concentration of 1.0 oocysts/ℓ or more, but less than 3.0 oocysts/ℓ, the bin classification is Bin 3.

4) For a supplier that is required to monitor for Cryptosporidium pursuant to Section 611.1001 and which has a Cryptosporidium bin concentration of 3.0 oocysts/ℓ or more, the bin classification is Bin 4.

5) For a supplier that that serves fewer than 10,000 people and which is not required to monitor for Cryptosporidium pursuant to Section 611.1001(a)(4), the bin classification is Bin 1.

6) The Cryptosporidium concentration is based on the applicable of the calculations set forth in subsection (a) or (d) of this Section.

d) Following completion of the second round of source water monitoring required pursuant to Section 611.1001(b), a filtered system supplier must recalculate their Cryptosporidium bin concentration using the Cryptosporidium results reported pursuant to Section 611.1001(b) and following the applicable of the procedures set forth in subsection (b)(1) through (b)(4) of this Section. A supplier must then redetermine its bin classification using this bin concentration and subsection (c) of this Section.

e) Reporting the bin classification.

1) A filtered supplier supplier must report its initial bin classification pursuant to subsection (c) of this Section to the Agency for approval no later than six months after the supplier is required to complete initial source water monitoring based on the applicable schedule set forth in Section 611.1001(c).

2) A supplier must report its bin classification pursuant to subsection (d) of this Section to the Agency for approval no later than six months after the supplier is required to complete the second round of source water monitoring based on the applicable schedule set forth in Section 611.1001(c).

3) The bin classification report to the Agency must include a summary of source water monitoring data and the calculation procedure used to

determine bin classification.

f) A failure to comply with the conditions of subsection (e) of this Section is a violation of the treatment technique requirement.

BOARD NOTE: Derived from 40 CFR 141.710 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1011 Treatment Technique Requirements: Filtered System Additional Cryptosporidium Treatment Requirements

a) A filtered system supplier must provide the level of additional treatment for Cryptosporidium specified in subsections (a)(1) through (a)(4) of this Section based on its bin classification, as determined pursuant to Section 611.1010, and according to the applicable schedule set forth in Section 611.1013.

1) If the supplier's bin classification is bin 1, no additional treatment is required.

2) If the supplier's bin classification is bin 2, and the supplier uses conventional filtration treatment (including softening) in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are a 1-log treatment.

3) If the supplier's bin classification is bin 2, and the supplier uses direct filtration in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are a 1.5-log treatment.

4) If the supplier's bin classification is bin 2, and the supplier uses slow sand or diatomaceous earth filtration in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are a 1-log treatment.

5) If the supplier's bin classification is bin 2, and the supplier uses alternative filtration ttechnologies in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are as determined by the Agency, by a SEP issued pursuant to Section 611.110, such that the total Cryptosporidium removal and inactivation is at least 4.0-log.

6) If the supplier's bin classification is bin 3, and the supplier uses conventional filtration treatment (including softening) in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then

the additional Cryptosporidium treatment requirements are a 2-log treatment.

7) If the supplier's bin classification is bin 3, and the supplier uses direct filtration in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are a 2.5-log treatment.

8) If the supplier's bin classification is bin 3, and the supplier uses slow sand or diatomaceous earth filtration in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are a 2-log treatment.

9) If the supplier's bin classification is bin 3, and the supplier uses alternative filtration ttechnologies in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are as determined by the Agency, by a SEP issued pursuant to Section 611.110, such that the total Cryptosporidium removal and inactivation is at least 5.0-log.

10) If the supplier's bin classification is bin 4, and the supplier uses conventional filtration treatment (including softening) in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are a 2.5-log treatment.

11) If the supplier's bin classification is bin 4, and the supplier uses direct filtration in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are a 3-log treatment.

12) If the supplier's bin classification is bin 4, and the supplier uses slow sand or diatomaceous earth filtration in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are a 2.5-log treatment.

13) If the supplier's bin classification is bin 4, and the supplier uses alternative filtration ttechnologies in full compliance with the applicable provisions of Subparts B, R, and X of this Part, then the additional Cryptosporidium treatment requirements are as determined by the Agency, by a SEP issued pursuant to Section 611.110, such that the total Cryptosporidium removal and inactivation is at least 5.5-log.

b) Required treatment.

1) A filtered system supplier must use one or more of the treatment and

management options listed in Section 611.1015, termed the microbial toolbox, to comply with the additional Cryptosporidium treatment required in subsection (a) of this Section.

2) A supplier classified in Bin 3 or Bin 4 must achieve at least 1-log of the additional Cryptosporidium treatment required pursuant to subsection (a) of this Section using either one or a combination of the following: bag filters, bank filtration, cartridge filters, chlorine dioxide, membranes, ozone, or UV, as described in Sections 611.1016 through 611.1020.

c) A failure by a supplier in any month to achieve treatment credit by meeting criteria in Sections 611.1016 through 611.1020 for microbial toolbox options that is at least equal to the level of treatment required in subsection (a) of this Section is a violation of the treatment technique requirement.

d) If the Agency determines, by a SEP issued pursuant to Section 611.110, during a sanitary survey or an equivalent source water assessment that after a supplier completed the monitoring conducted pursuant to Section 611.1001(a) or 611.1001(b), significant changes occurred in the supplier's watershed that could lead to increased contamination of the source water by Cryptosporidium, the supplier must take actions specified by the Agency in the SEP to address the contamination. These actions may include additional source water monitoring or implementing microbial toolbox options listed in Section 611.1015.

BOARD NOTE: Derived from 40 CFR 141.711 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1012 Treatment Technique Requirements: Unfiltered System Cryptosporidium Treatment Requirements

a) Determination of the mean Cryptosporidium level.

1) Following completion of the initial source water monitoring required by Section 611.1001(a), an unfiltered system supplier must calculate the arithmetic mean of all Cryptosporidium sample concentrations reported pursuant to Section 611.1001(a). The supplier must report this value to the Agency for approval no later than six months after the month the supplier is required to complete initial source water monitoring based on the applicable schedule set forth in Section 611.1001(c).

2) Following completion of the second round of source water monitoring required pursuant to Section 611.1001(b), an unfiltered system supplier must calculate the arithmetic mean of all Cryptosporidium sample concentrations reported pursuant to Section 611.1001(b). The supplier must report this value to the Agency for approval no later than six months

after the month the supplier is required to complete the second round of source water monitoring based on the applicable schedule set forth in Section 611.1001(c).

3) If the monthly Cryptosporidium sampling frequency varies, a supplier must first calculate a monthly average for each month of monitoring. The supplier must then use these monthly average concentrations, rather than individual sample concentrations, in the calculation of the mean Cryptosporidium level in subsection (a)(1) or (a)(2) of this Section.

4) The report to the Agency of the mean Cryptosporidium levels calculated pursuant to subsections (a)(1) and (a)(2) of this Section must include a summary of the source water monitoring data used for the calculation.

5) A failure to comply with the conditions of subsection (a) of this Section is a violation of the treatment technique requirement.

b) Cryptosporidium inactivation requirements. An unfiltered system supplier must provide the level of inactivation for Cryptosporidium specified in this subsection, based on its mean Cryptosporidium levels, as determined pursuant to subsection (a) of this Section and according to the applicable schedule set forth in Section 611.1013.

1) An unfiltered system supplier with a mean Cryptosporidium level of 0.01 oocysts/ℓ or less must provide at least 2-log Cryptosporidium inactivation.

2) An unfiltered system supplier with a mean Cryptosporidium level of greater than 0.01 oocysts/ℓ must provide at least 3-log Cryptosporidium inactivation.

c) Inactivation treatment technology requirements. An unfiltered system supplier must use chlorine dioxide, ozone, or UV, as described in Section 611.1020, to meet the Cryptosporidium inactivation requirements of this Section.

1) A supplier that uses chlorine dioxide or ozone and fails to achieve the Cryptosporidium inactivation required in subsection (b) of this Section on more than one day in the calendar month is in violation of the treatment technique requirement.

2) A supplier that uses UV light and fails to achieve the Cryptosporidium inactivation required in subsection (b) of this Section by meeting the criteria in Section 611.1020(d)(3)(B) is in violation of the treatment technique requirement.

d) Use of two disinfectants. An unfiltered system supplier must meet the combined Cryptosporidium inactivation requirements of this Section and Giardia lamblia and virus

inactivation requirements of Section 611.241 using a minimum of two disinfectants, and each of two disinfectants must separately achieve the total inactivation required for any of Cryptosporidium, Giardia lamblia, or viruses.

BOARD NOTE: Derived from 40 CFR 141.712 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1013 Treatment Technique Requirements: Schedule for Compliance with Cryptosporidium Treatment Requirements

a) Following initial bin classification pursuant to Section 611.1010(c), a filtered system supplier must provide the level of treatment for Cryptosporidium required by Section 611.1011 according to the applicable schedule set forth in subsection (c) of this Section.

b) Following initial determination of the mean Cryptosporidium level pursuant to Section 611.1012(a)(1), an unfiltered system supplier must provide the level of treatment for Cryptosporidium required by Section 611.1012 according to the applicable schedule set forth in subsection (c) of this Section.

c) Cryptosporidium treatment compliance dates.

1) A supplier that serves 100,000 or more persons must comply with Cryptosporidium treatment requirements before April 1, 2012.

2) A supplier that serves 50,000 to 99,999 persons must comply with Cryptosporidium treatment requirements before October 1, 2012.

3) A supplier that serves 10,000 to 49,999 persons must comply with Cryptosporidium treatment requirements before October 1, 2013.

4) A supplier that serves fewer than 10,000 persons must comply with Cryptosporidium treatment requirements before October 1, 2014.

5) The Agency may, by a SEP issued pursuant to Section 611.110, allow up to an additional two years from the applicable date set forth in this subsection (c) for complying with the treatment requirement if it determines that the additional time is necessary for the supplier to make capital improvements to implement the treatment.

d) If the bin classification for a filtered system supplier changes following the second round of source water monitoring, as determined pursuant to Section 611.1010(d), the supplier must provide the level of treatment for Cryptosporidium required by Section 611.1011 on a schedule approved by the Agency by a SEP issued pursuant to Section 611.110.

e) If the mean Cryptosporidium level for an unfiltered system supplier changes following the second round of monitoring, as determined by Section 611.1012(a)(2), and if the supplier must provide a different level of Cryptosporidium treatment pursuant to Section 611.1012 due to this change, the supplier must meet this treatment requirement on a schedule the approved by the Agency.

BOARD NOTE: Derived from 40 CFR 141.713 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1014 Treatment Technique Requirements: Requirements for Uncovered Finished Water Storage Facilities

a) A supplier that uses uncovered finished water storage facilities must comply with the conditions of this Section.

b) A supplier must notify the Agency in writing of the use of each uncovered finished water storage facility no later than April 1, 2008.

c) A supplier must meet either of the following conditions for each uncovered finished water storage facility, or it must be in compliance with an Agency-approved schedule to meet these conditions, no later than April 1, 2009.

1) The supplier must cover any uncovered finished water storage facility; or

2) The supplier must treat the discharge from the uncovered finished water storage facility to the distribution system to achieve inactivation or removal of at least 4-log virus, 3-log Giardia lamblia, and 2-log Cryptosporidium using a protocol approved by the Agency.

d) A failure to comply with the requirements of this Section is a violation of the treatment technique requirement.

BOARD NOTE: Derived from 40 CFR 141.714 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1015 Requirements for Microbial Toolbox Components: Microbial Toolbox Options for Meeting Cryptosporidium Treatment Requirements

a) Treatment credits.

1) A supplier receives the applicable of the treatment credits set forth in subsection (b) of this Section by meeting the conditions for microbial

toolbox options described in Sections 611.1016 through 611.1020. The supplier applies these treatment credits to meet the applicable treatment requirements in Section 611.1011 or Section 611.1012.

2) An unfiltered system supplier is eligible for treatment credits for the microbial toolbox options described in Section 611.1020 only.

b) Subsections (b)(1) through (b)(5) of this Section summarize options in the microbial toolbox:

1) Source protection and management toolbox options.

A) Watershed control program: 0.5-log credit for Agency-approved program comprising required elements, annual program status report to Agency, and regular watershed survey. An unfiltered system supplier is not eligible for credit. Specific criteria are set forth in Section 611.1016(a).

B) Alternative source or intake management: No prescribed credit. A supplier may conduct simultaneous monitoring for treatment bin classification at alternative intake locations or under alternative intake management strategies. Specific criteria are set forth in Section 611.1016(b).

2) Pre filtration toolbox options.

A) Presedimentation basin with coagulation: 0.5-log credit during any month that presedimentation basins achieve a monthly mean reduction of 0.5-log or greater in turbidity or alternative Agency-approved performance criteria. To be eligible, basins must be operated continuously with coagulant addition and all plant flow must pass through basins. Specific criteria are set forth in Section 611.1017(a).

B) Two-stage lime softening: 0.5-log credit for two-stage softening where chemical addition and hardness precipitation occur in both stages. All plant flow must pass through both stages. Single-stage softening is credited as equivalent to conventional treatment. Specific criteria are set forth in Section 611.1017(b).

C) Bank filtration: 0.5-log credit for 25-foot setback or 1.0-log credit for 50-foot setback; the aquifer must be unconsolidated sand containing at least 10 percent fines and average turbidity in the wells must be less than 1 NTU. A supplier using wells followed by filtration when conducting source water monitoring must sample the well to determine bin classification and is not eligible

for additional credit. Specific criteria are set forth in Section 611.1017(c).

3) Treatment performance toolbox options.

A) Combined filter performance: 0.5-log credit for combined filter effluent turbidity less than or equal to 0.15 NTU in at least 95 percent of measurements each month. Specific criteria are set forth in Section 611.1018(a).

B) Individual filter performance: 0.5-log credit (in addition to 0.5-log combined filter performance credit) if individual filter effluent turbidity is less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter and is never greater than 0.3 NTU in two consecutive measurements in any filter. Specific criteria are set forth in Section 611.1018(b).

C) Demonstration of performance: Credit awarded to unit process or treatment train based on a demonstration to the State with an Agency-approved protocol. Specific criteria are set forth in Section 611.1018(c).

4) Additional filtration toolbox options.

A) Bag or cartridge filters (individual filters): Up to 2-log credit based on the removal efficiency demonstrated during challenge testing with a 1.0-log factor of safety. Specific criteria are set forth in Section 611.1019(a).

B) Bag or cartridge filters (in series): Up to 2.5-log credit based on the removal efficiency demonstrated during challenge testing with a 0.5-log factor of safety. Specific criteria are set forth in Section 611.1019(a).

C) Membrane filtration: Log credit equivalent to removal efficiency demonstrated in challenge test for device if supported by direct integrity testing. Specific criteria are set forth in Section 611.1019(b).

D) Second stage filtration: 0.5-log credit for second separate granular media filtration stage if treatment train includes coagulation prior to first filter. Specific criteria are set forth in Section 611.1019(c)

E) Slow sand filters: 2.5-log credit as a secondary filtration step or 3.0-log credit as a primary filtration process. No prior chlorination for either option. Specific criteria are set forth in Section

611.1019(d).

5) Inactivation toolbox options.

A) Chlorine dioxide: Log credit based on measured CT in relation to CT table. Specific criteria are set forth in Section 611.1020(b)

B) Ozone: Log credit based on measured CT in relation to CT table. Specific criteria are set forth in Section 611.1020(b).

C) UV: Log credit based on validated UV dose in relation to UV dose table; reactor validation testing required to establish UV dose and associated operating conditions. Specific criteria are set forth in Section 611.1020(d).

BOARD NOTE: Derived from 40 CFR 141.715 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1016 Requirements for Microbial Toolbox Components: Source Toolbox Components

a) Watershed control program. A supplier receives 0.5-log Cryptosporidium treatment credit for implementing a watershed control program that meets the requirements of this Section.

1) A supplier that intends to apply for the watershed control program credit must notify the Agency of its intent no later than two years prior to the treatment compliance date applicable to the supplier in Section 611.1013.

2) A supplier must submit to the Agency a proposed watershed control plan no later than one year before the applicable treatment compliance date in Section 611.1013. The Agency must approve the watershed control plan for the supplier to receive watershed control program treatment credit. The watershed control plan must include the following elements:

A) Identification of an "area of influence" outside of which the likelihood of Cryptosporidium or fecal contamination affecting the treatment plant intake is not significant. This is the area to be evaluated in future watershed surveys pursuant to subsection (a)(5)(B) of this Section;

B) Identification of both potential and actual sources of Cryptosporidium contamination and an assessment of the relative impact of these sources on the supplier's source water quality;

C) An analysis of the effectiveness and feasibility of control measures that could reduce Cryptosporidium loading from sources of contamination to the supplier's source water; and

D) A statement of goals and specific actions the supplier will undertake to reduce source water Cryptosporidium levels. The plan must explain how the actions are expected to contribute to specific goals, identify watershed partners and their roles, identify resource requirements and commitments, and include a schedule for plan implementation with deadlines for completing specific actions identified in the plan.

3) A supplier with an existing watershed control programs (i.e., a programs in place on January 5, 2006) is eligible to seek this credit. Its watershed control plans must meet the criteria in subsection (a)(2) of this Section and must specify ongoing and future actions that will reduce source water Cryptosporidium levels.

4) If the Agency does not respond to a supplier regarding approval of a watershed control plan submitted pursuant to this Section and the supplier meets the other requirements of this Section, the watershed control program will be considered approved and 0.5 log Cryptosporidium treatment credit will be awarded, unless and until the Agency subsequently withdraws such approval by a SEP issued pursuant to Section 611.110.

5) A supplier must complete each of the following actions to maintain the 0.5-log credit.

A) It must submit an annual watershed control program status report to the Agency. The annual watershed control program status report must describe the supplier's implementation of the approved plan and assess the adequacy of the plan to meet its goals. The report must explain how the supplier is addressing any shortcomings in plan implementation, including those previously identified by the Agency or as the result of the watershed survey conducted pursuant to subsection (a)(5)(B) of this Section. The report must also describe any significant changes that have occurred in the watershed since the last watershed sanitary survey. If a supplier determines during implementation that making a significant change to its approved watershed control program is necessary, the supplier must notify the Agency prior to making any such changes. If any change is likely to reduce the level of source water protection, the supplier must also list in its notification the actions the supplier will take to mitigate this effect;

B) The supplier must undergo a watershed sanitary survey every three years for a CWS supplier and every five years for a non-CWS supplier and submit the survey report to the Agency. The survey must be conducted according to Agency guidelines and by persons that the Agency approves.

i) The watershed sanitary survey must meet the following criteria: it must encompass the region identified in the Agency-approved watershed control plan as the area of influence; assess the implementation of actions to reduce source water Cryptosporidium levels; and identify any significant new sources of Cryptosporidium;

ii) If the Agency determines that significant changes may have occurred in the watershed since the previous watershed sanitary survey, the supplier must undergo another watershed sanitary survey by a date the Agency requires by a SEP issued pursuant to Section 611.110, which may be earlier than the regular date in subsection (a)(5)(B) of this Section; and

C) The supplier must make the watershed control plan, annual status reports, and watershed sanitary survey reports available to the public upon request. These documents must be in a plain language style and include criteria by which to evaluate the success of the program in achieving plan goals. The Agency may, by a SEP issued pursuant to Section 611.110, approve that a supplier withhold from the public portions of the annual status report, watershed control plan, and watershed sanitary survey based on water supply security considerations.

6) If the Agency determines that a supplier is not carrying out the approved watershed control plan, the Agency may, by a SEP issued pursuant to Section 611.110, withdraw the watershed control program treatment credit.

b) Alternative source.

1) A supplier may conduct source water monitoring that reflects a different intake location (either in the same source or for an alternate source) or a different procedure for the timing or level of withdrawal from the source (alternative source monitoring). If the Agency approves by a SEP issued pursuant to Section 611.110, a supplier may determine its bin classification pursuant to Section 611.1010 based on the alternative source monitoring results.

2) If a supplier conducts alternative source monitoring pursuant to subsection (b)(1) of this Section, it must also monitor their current plant intake concurrently as described in Section 611.1001.

3) Alternative source monitoring pursuant to subsection (b)(1) of this Section must meet the requirements for source monitoring to determine bin classification, as described in Sections 611.1001 through 611.1006. A supplier must report the alternative source monitoring results to the Agency, along with supporting information documenting the operating conditions under which the samples were collected.

4) If a supplier determines its bin classification pursuant to Section 611.1010 using alternative source monitoring results that reflect a different intake location or a different procedure for managing the timing or level of withdrawal from the source, the supplier must relocate the intake or permanently adopt the withdrawal procedure, as applicable, no later than the applicable treatment compliance date in Section 611.1013.

BOARD NOTE: Derived from 40 CFR 141.716 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1017 Requirements for Microbial Toolbox Components: Pre-Filtration Treatment Toolbox Components

a) Presedimentation. A supplier receives 0.5-log Cryptosporidium treatment credit for a presedimentation basin during any month the process meets the criteria in this subsection (a).

1) The presedimentation basin must be in continuous operation and must treat the entire plant flow taken from a surface water or groundwater under the direct influent of surface water source.

2) The supplier must continuously add a coagulant to the presedimentation basin.

3) The presedimentation basin must achieve both of the following performance criteria:

A) It demonstrates at least 0.5-log mean reduction of influent turbidity. This reduction must be determined using daily turbidity measurements in the presedimentation process influent, and effluent and must be calculated as follows: log10(monthly mean of daily influent turbidity)-log10(monthly mean of daily effluent turbidity); and

B) It complies with Agency-approved performance criteria that demonstrate at least 0.5-log mean removal of micronsized particulate material through the presedimentation process.

b) Two-stage lime softening. A supplier receives an additional 0.5-log Cryptosporidium treatment credit for a two-stage lime softening plant if chemical addition and hardness precipitation occur in two separate and sequential softening stages prior to filtration. Both softening stages must treat the entire plant flow taken from a surface water or groundwater under the direct influent of surface water source.

c) Bank filtration. A supplier receives Cryptosporidium treatment credit for bank filtration that serves as pretreatment to a filtration plant by meeting the criteria in this subsection. A supplier using bank filtration when they begin source water monitoring pursuant to Section 611.1001(a) must collect samples as described in Section 611.1003(d), and it is are not eligible for this credit.

1) A well with a groundwater flow path of at least 25 feet receives 0.5-log treatment credit, or a well with a groundwater flow path of at least 50 feet receives 1.0-log treatment credit. The groundwater flow path must be determined as specified in subsection (c)(4) of this Section.

2) Only a well in granular aquifers is eligible for treatment credit. A granular aquifer is one comprised of sand, clay, silt, rock fragments, pebbles or larger particles, and minor cement. A supplier must characterize the aquifer at the well site to determine aquifer properties. A supplier must extract a core from the aquifer and demonstrate that in at least 90 percent of the core length, grains less than 1.0 mm in diameter constitute at least 10 percent of the core material.

3) Only horizontal and vertical wells are eligible for treatment credit.

4) For a vertical well, the groundwater flow path is the measured distance from the edge of the surface water body under high flow conditions (determined by the 100 year floodplain elevation boundary or by the floodway, as defined in Federal Emergency Management Agency flood hazard maps) to the well screen. For a horizontal well, the groundwater flow path is the measured distance from the bed of the river under normal flow conditions to the closest horizontal well lateral screen.

5) The supplier must monitor each wellhead for turbidity at least once every four hours while the bank filtration process is in operation. If monthly average turbidity levels, based on daily maximum values in the well, exceed 1 NTU, the supplier must report this result to the Agency and conduct an assessment within 30 days to determine the cause of the high turbidity levels in the well. If the Agency determines that microbial

removal has been compromised, it may, by a SEP issued pursuant to Section 611.110, revoke treatment credit until the supplier implements corrective actions approved by the Agency to remediate the problem.

6) Springs and infiltration galleries are not eligible for treatment credit pursuant to this Section, but are eligible for credit pursuant to Section 611.1018(c).

7) Bank filtration demonstration of performance. The Agency may, by a SEP issued pursuant to Section 611.110, approve Cryptosporidium treatment credit for bank filtration based on a demonstration of performance study that meets the criteria in this subsection. This treatment credit may be greater than 1.0-log and may be awarded to bank filtration that does not meet the criteria in subsections (c)(1) through (c)(5) of this Section.

A) The study must follow an Agency-approved protocol and must involve the collection of data on the removal of Cryptosporidium or a surrogate for Cryptosporidium and related hydrogeologic and water quality parameters during the full range of operating conditions.

B) The study must include sampling both from the production wells and from monitoring wells that are screened and located along the shortest flow path between the surface water source and the production wells.

BOARD NOTE: Derived from 40 CFR 141.717 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1018 Requirements for Microbial Toolbox Components: Treatment Performance Toolbox Components

a) Combined filter performance. A supplier that uses conventional filtration treatment or direct filtration treatment receives an additional 0.5-log Cryptosporidium treatment credit during any month it meets the criteria in this subsection (a). Its combined filter effluent (CFE) turbidity must be less than or equal to 0.15 NTU in at least 95 percent of the measurements. Turbidity must be measured as described in Sections 611.531 and 611.533.

b) Individual filter performance. A supplier using conventional filtration treatment or direct filtration treatment receive 0.5-log Cryptosporidium treatment credit, which can be in addition to the 0.5-log credit pursuant to subsection (a) of this Section, during any month it meets the criteria in this subsection (b). Compliance with these criteria must be based on individual filter turbidity monitoring as

described in Section 141.174 or Section 141.560, as applicable.

1) The filtered water turbidity for each individual filter must be less than or equal to 0.15 NTU in at least 95 percent of the measurements recorded each month.

2) No individual filter may have a measured turbidity greater than 0.3 NTU in two consecutive measurements taken 15 minutes apart.

3) Any supplier that has received treatment credit for individual filter performance and fails to meet the requirements of subsection (b)(1) or (b)(2) of this Section during any month does not receive a treatment technique violation pursuant to Section 611.1011(c) if the Agency determines the following:

A) The failure was due to unusual and short-term circumstances that could not reasonably be prevented through optimizing treatment plant design, operation, and maintenance; and

B) The supplier has experienced no more than two such failures in any calendar year.

c) Demonstration of performance. The Agency may, by a SEP issued pursuant to Section 611.110, approve Cryptosporidium treatment credit for drinking water treatment processes based on a demonstration of performance study that meets the criteria in this subsection (c). This treatment credit may be greater than or less than the prescribed treatment credits in Section 611.1011 or Sections 611.1017 through 611.1020 and may be awarded to treatment processes that do not meet the criteria for the prescribed credits.

1) The supplier cannot receive the prescribed treatment credit for any toolbox box option in Sections 611.1017 through 611.1020 if that toolbox option is included in a demonstration of performance study for which treatment credit is awarded pursuant to this subsection (b).

2) The demonstration of performance study must follow an Agency-approved protocol and must demonstrate the level of Cryptosporidium reduction the treatment process will achieve under the full range of expected operating conditions for the supplier.

3) Approval by the Agency must be in writing and may include monitoring and treatment performance criteria that the supplier must demonstrate and report on an ongoing basis to remain eligible for the treatment credit. The Agency may, by a SEP issued pursuant to Section 611.110, designate such criteria where necessary to verify that the conditions under which the demonstration of performance credit was approved are maintained during

routine operation.

BOARD NOTE: Derived from 40 CFR 141.718 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1019 Requirements for Microbial Toolbox Components: Additional Filtration Toolbox Components

a) Bag and cartridge filters. A supplier receives Cryptosporidium treatment credit of up to 2.0-log for individual bag or cartridge filters and up to 2.5-log for bag or cartridge filters operated in series by meeting the criteria set forth in subsections (a)(1) through (a)(10) of this Section. To be eligible for this credit, the supplier must report the results of challenge testing that meets the requirements of subsections (a)(2) through (a)(9) of this Section to the Agency. The filters must treat the entire plant flow taken from a Subpart B source.

1) The Cryptosporidium treatment credit awarded to bag or cartridge filters must be based on the removal efficiency demonstrated during challenge testing that is conducted according to the criteria set forth in subsections (a)(2) through (a)(9) of this Section. A factor of safety equal to 1-log for individual bag or cartridge filters and 0.5-log for bag or cartridge filters in series must be applied to challenge testing results to determine removal credit. A supplier may use results from challenge testing conducted prior to January 5, 2006 if the prior testing was consistent with the criteria specified in subsections (a)(2) through (a)(9) of this Section.

2) Challenge testing must be performed on full-scale bag or cartridge filters, and the associated filter housing or pressure vessel, that are identical in material and construction to the filters and housings the supplier will use for removal of Cryptosporidium. Bag or cartridge filters must be challenge tested in the same configuration that the supplier will use, either as individual filters or as a series configuration of filters.

3) Challenge testing must be conducted using Cryptosporidium or a surrogate that is removed no more efficiently than Cryptosporidium. The microorganism or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate must be determined using a method capable of discreetly quantifying the specific microorganism or surrogate used in the test; gross measurements such as turbidity may not be used.

4) The maximum feed water concentration that can be used during a challenge test must be based on the detection limit of the challenge particulate in the filtrate (i.e., filtrate detection limit) and must be calculated using the following equation:

Maximum Feed Concentration = $1 \times 10^4 \times$ (Filtrate Detection Limit)

5) Challenge testing must be conducted at the maximum design flow rate for the filter as specified by the manufacturer.

6) Each filter evaluated must be tested for a duration sufficient to reach 100 percent of the terminal pressure drop, which establishes the maximum pressure drop under which the filter may be used to comply with the requirements of this Subpart Z.

7) Removal efficiency of a filter must be determined from the results of the challenge test and expressed in terms of log removal values using the following equation:

$$LRV = Log_{10}(C_f) - Log_{10}(C_p)$$

Where:

LRV = log removal value demonstrated during challenge testing

C_f = the feed concentration measured during the challenge test

C_p = the filtrate concentration measured during the challenge test. In applying this equation, the same units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, then the term Cp must be set equal to the detection limit.

8) Each filter tested must be challenged with the challenge particulate during three periods over the filtration cycle: within two hours of start-up of a new filter; when the pressure drop is between 45 and 55 percent of the terminal pressure drop; and at the end of the cycle after the pressure drop has reached 100 percent of the terminal pressure drop. An LRV must be calculated for each of these challenge periods for each filter tested. The LRV for the filter (LRV_{filter}) must be assigned the value of the minimum LRV observed during the three challenge periods for that filter.

9) If fewer than 20 filters are tested, the overall removal efficiency for the filter product line must be set equal to the lowest LRV_{filter} among the filters tested. If 20 or more filters are tested, the overall removal efficiency for the filter product line must be set equal to the 10th percentile of the set of LRV_{filter} values for the various filters tested. The percentile is defined by (i/(n+1)) where i is the rank of n individual data

points ordered lowest to highest. If necessary, the 10th percentile may be calculated using linear interpolation.

10) If a previously tested filter is modified in a manner that could change the removal efficiency of the filter product line, challenge testing to demonstrate the removal efficiency of the modified filter must be conducted and submitted in writing to the Agency.

b) Membrane filtration.

1) A supplier receives Cryptosporidium treatment credit for membrane filtration that meets the criteria of this subsection (b). Membrane cartridge filters that meet the definition of membrane filtration in Section 611.102 are eligible for this credit. The level of treatment credit a supplier receives is equal to the lower of the following values:

A) The removal efficiency demonstrated during challenge testing conducted pursuant to the conditions in subsection (b)(2) of this Section; or

B) The maximum removal efficiency that can be verified through direct integrity testing used with the membrane filtration process pursuant to the conditions in subsection (b)(3) of this Section.

2) Challenge Testing. The membrane used by the supplier must undergo challenge testing to evaluate removal efficiency, and the supplier must report the results of challenge testing to the Agency. Challenge testing must be conducted according to the criteria set forth in subsections (b)(2)(A) through (b)(2)(G) of this Section. A supplier may use data from challenge testing conducted prior to January 5, 2006 if the prior testing was consistent with the criteria set forth in subsections (b)(2)(A) through (b)(2)(G) of this Section.

A) Challenge testing must be conducted on either a full-scale membrane module, identical in material and construction to the membrane modules used in the supplier's treatment facility, or a smaller-scale membrane module, identical in material and similar in construction to the full-scale module. A module is defined as the smallest component of a membrane unit in which a specific membrane surface area is housed in a device with a filtrate outlet structure.

B) Challenge testing must be conducted using Cryptosporidium oocysts or a surrogate that is removed no more efficiently than Cryptosporidium oocysts. The organism or surrogate used during challenge testing is referred to as the challenge particulate. The

concentration of the challenge particulate, in both the feed and filtrate water, must be determined using a method capable of discretely quantifying the specific challenge particulate used in the test; gross measurements such as turbidity may not be used.

C) The maximum feed water concentration that can be used during a challenge test is based on the detection limit of the challenge particulate in the filtrate and must be determined according to the following equation:

Maximum Feed Concentration = $3.16 \times 10^6 \times$ (Filtrate Detection Limit)

D) Challenge testing must be conducted under representative hydraulic conditions at the maximum design flux and maximum design process recovery specified by the manufacturer for the membrane module. Flux is defined as the throughput of a pressure driven membrane process expressed as flow per unit of membrane area. Recovery is defined as the volumetric percent of feed water that is converted to filtrate over the course of an operating cycle uninterrupted by events such as chemical cleaning or a solids removal process (i.e., backwashing).

E) Removal efficiency of a membrane module must be calculated from the challenge test results and expressed as a log removal value according to the following equation:

$$LRV = \text{Log}_{10}(C_f) - \text{Log}_{10}(C_p)$$

Where:

LRV = log removal value demonstrated during the challenge test

C_f = the feed concentration measured during the challenge test

C_p = the filtrate concentration measured during the challenge test. Equivalent units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, the term C_p is set equal to the detection limit for the purpose of calculating the LRV. An LRV must be calculated for each membrane module evaluated during the challenge test.

F) The removal efficiency of a membrane filtration process demonstrated during challenge testing must be expressed as a log removal value ($LRV_{C\text{-}Test}$). If fewer than 20 modules are tested, then $LRV_{C\text{-}Test}$ is equal to the lowest of the representative LRVs among the modules tested. If 20 or more modules are tested, then LRVC-Test is equal to the 10th percentile of the representative LRVs among the modules tested. The percentile is defined by (i/(n+1)) where i is the rank of n individual data points ordered lowest to highest. If necessary, the 10th percentile may be calculated using linear interpolation.

G) The challenge test must establish a quality control release value (QCRV) for a non-destructive performance test that demonstrates the Cryptosporidium removal capability of the membrane filtration module. This performance test must be applied to each production membrane module used by the supplier that was not directly challenge tested in order to verify Cryptosporidium removal capability. Production modules that do not meet the established QCRV are not eligible for the treatment credit demonstrated during the challenge test.

H) If a previously tested membrane is modified in a manner that could change the removal efficiency of the membrane or the applicability of the non-destructive performance test and associated QCRV, additional challenge testing to demonstrate the removal efficiency of, and determine a new QCRV for, the modified membrane must be conducted and submitted to the Agency.

3) Direct integrity testing. A supplier must conduct direct integrity testing in a manner that demonstrates a removal efficiency equal to or greater than the removal credit awarded to the membrane filtration process and meets the requirements described in subsections (b)(3)(A) through (b)(3)(F) of this Section. A "direct integrity test" is defined as a physical test applied to a membrane unit in order to identify and isolate integrity breaches (i.e., one or more leaks that could result in contamination of the filtrate).

A) The direct integrity test must be independently applied to each membrane unit in service. A membrane unit is defined as a group of membrane modules that share common valving that allows the unit to be isolated from the rest of the supplier for the purpose of integrity testing or other maintenance.

B) The direct integrity method must have a resolution of three micrometers or less, where resolution is defined as the size of the smallest integrity breach that contributes to a response from the

direct integrity test.

C) The direct integrity test must have a sensitivity sufficient to verify the log treatment credit awarded to the membrane filtration process by the Agency, where sensitivity is defined as the maximum log removal value that can be reliably verified by a direct integrity test. Sensitivity must be determined using the appropriate of the following approaches, considering the type of direct integrity test the supplier uses:

i) For a direct integrity test that uses an applied pressure or vacuum, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = Log_{10}\left(\frac{Q_p}{VCF \times Q_{breach}}\right)$$

Where:

LRV_{DIT} = the sensitivity of the direct integrity test

Q_p = total design filtrate flow from the membrane unit

Q_{breach} = flow of water from an integrity breach associated with the smallest integrity test response that can be reliably measured

VCF = volumetric concentration factor. The volumetric concentration factor is the ratio of the suspended solids concentration on the high pressure side of the membrane relative to that in the feed water; or

ii) For a direct integrity test that uses a particulate or molecular marker, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = Log_{10}(C_f) - Log_{10}(C_p)$$

Where:

LRV_{DIT} = the sensitivity of the direct integrity test

C_f = the typical feed concentration of the marker used in the test

C_p = the filtrate concentration of the marker from an integral membrane unit

D) A supplier must establish a control limit within the sensitivity limits of the direct integrity test that is indicative of an integral membrane unit capable of meeting the removal credit awarded by the Agency.

E) If the result of a direct integrity test exceeds the control limit established pursuant to subsection (b)(3)(D) of this Section, the supplier must remove the membrane unit from service. The supplier must conduct a direct integrity test to verify any repairs, and it may return the membrane unit to service only if the direct integrity test is within the established control limit.

F) A supplier must conduct direct integrity testing on each membrane unit at a frequency of not less than once each day that the membrane unit is in operation. The Agency may, by a SEP issued pursuant to Section 611.110, approve less frequent testing, based on demonstrated process reliability, the use of multiple barriers effective for Cryptosporidium, or reliable process safeguards.

4) Indirect integrity monitoring. A supplier must conduct continuous indirect integrity monitoring on each membrane unit according to the criteria in subsections (b)(4)(A) through (b)(4)(E) of this Section. "Indirect integrity monitoring" is defined as monitoring some aspect of filtrate water quality that is indicative of the removal of particulate matter. A supplier that implements continuous direct integrity testing of membrane units in accordance with the criteria in subsections (b)(3)(A) through (b)(3)(E) of this Section is not subject to the requirements for continuous indirect integrity monitoring. The supplier must submit a monthly report to the State summarizing all continuous indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken in each case.

A) Unless the Agency approves an alternative parameter by a SEP issued pursuant to Section 611.110, continuous indirect integrity monitoring must include continuous filtrate turbidity monitoring.

B) Continuous indirect integrity monitoring must be conducted at a frequency of no less than once every 15 minutes.

C) Continuous indirect integrity monitoring must be separately conducted on each membrane unit.

D) If continuous indirect integrity monitoring includes turbidity and if the filtrate turbidity readings are above 0.15 NTU for a period greater than 15 minutes (i.e., two consecutive 15-minute readings above 0.15 NTU), direct integrity testing must immediately be performed on the associated membrane unit, as specified in subsections (b)(3)(A) through (b)(3)(E) of this Section.

E) If indirect integrity monitoring includes an Agency-approved alternative parameter and if the alternative parameter exceeds an Agency-approved control limit for a period greater than 15 minutes, direct integrity testing must immediately be performed on the associated membrane units as specified in subsections (b)(3)(A) through (b)(3)(E) of this Section.

c) Second stage filtration. A supplier receives 0.5-log Cryptosporidium treatment credit for a separate second stage of filtration that consists of sand, dual media, GAC, or other fine grain media following granular media filtration if the Agency approves by a SEP issued pursuant to Section 611.110. To be eligible for this credit, the first stage of filtration must be preceded by a coagulation step and both filtration stages must treat the entire plant flow taken from a surface water or groundwater under the direct influent of surface water source. A cap, such as GAC, on a single stage of filtration is not eligible for this credit. The Agency must approve the treatment credit based on an assessment of the design characteristics of the filtration process.

d) Slow sand filtration (as secondary filter). A supplier are eligible to receive 2.5-log Cryptosporidium treatment credit by a SEP issued pursuant to Section 611.110 for a slow sand filtration process that follows a separate stage of filtration if both filtration stages treat entire plant flow taken from a surface water or groundwater under the direct influent of surface water source and no disinfectant residual is present in the influent water to the slow sand filtration process. The Agency must approve the treatment credit based on an assessment of the design characteristics of the filtration process. This subsection (d) does not apply to treatment credit awarded to slow sand filtration used as a primary filtration process.

BOARD NOTE: Derived from 40 CFR 141.719 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1020 Requirements for Microbial Toolbox Components: Inactivation Toolbox Components

a) Calculation of CT values.

1) CT is the product of the disinfectant contact time (T, in minutes) and disinfectant concentration (C, in milligrams per liter). A supplier with treatment credit for chlorine dioxide or ozone pursuant to subsection (b) or (c) of this Section must calculate CT at least once each day, with both C and T measured during peak hourly flow, as specified in Sections 611.531 and 611.532.

2) A supplier with several disinfection segments in sequence may calculate CT for each segment, where a disinfection segment is defined as a treatment unit process with a measurable disinfectant residual level and a liquid volume. Under this approach, the supplier must add the Cryptosporidium CT values in each segment to determine the total CT for the treatment plant.

b) CT values for chlorine dioxide and ozone.

1) A supplier receives the Cryptosporidium treatment credit listed in Table H to this Part by meeting the corresponding chlorine dioxide CT value for the applicable water temperature, as described in subsection (a) of this Section.

2) A supplier receives the Cryptosporidium treatment credit listed in Table I to this Part by meeting the corresponding ozone CT values for the applicable water temperature, as described in subsection (a) of this Section.

c) Site-specific study. The Agency may, by a SEP issued pursuant to Section 611.110, approve alternative chlorine dioxide or ozone CT values to those listed in Tables H and I to this Part on a site-specific basis. The Agency must base this approval on a site-specific study conducted by the supplier according to an Agency-approved protocol.

d) Ultraviolet light. A supplier receives Cryptosporidium, Giardia lamblia, and virus treatment credits for ultraviolet (UV) light reactors by achieving the corresponding UV dose values shown in Table J to this Part. The supplier must validate and monitor UV reactors, as described in subsections (d)(2) and (d)(3) of this Section, to demonstrate that they are achieving a particular UV dose value for treatment credit.

1) UV dose table. The treatment credits listed in Table J to this Part are for

UV light at a wavelength of 254 nm as produced by a low-pressure mercury vapor lamp. To receive treatment credit for other lamp types, suppliers must demonstrate an equivalent germicidal dose through reactor validation testing, as described in subsection (d)(2) of this Section. The UV dose values in this table are applicable only to post-filter applications of UV in a filtered system supplier and to an unfiltered ssystem supplier.

2) Reactor validation testing. A supplier must use UV reactors that have undergone validation testing to determine the operating conditions under which the reactor delivers the UV dose required in subsection (d)(1) of this Section (i.e., validated operating conditions). These operating conditions must include flow rate; UV intensity, as measured by a UV sensor; and UV lamp status.

A) When determining validated operating conditions, a supplier must account for the following factors: UV absorbance of the water; lamp fouling and aging; measurement uncertainty of on-line sensors; UV dose distributions arising from the velocity profiles through the reactor; failure of UV lamps or other critical supplier components; and inlet and outlet piping or channel configurations of the UV reactor.

B) Validation testing must include the following: Full scale testing of a reactor that conforms uniformly to the UV reactors used by the supplier and inactivation of a test microorganism whose dose response characteristics have been quantified with a low pressure mercury vapor lamp.

C) The Agency may, by a SEP issued pursuant to Section 611.110, approve an alternative approach to validation testing.

3) Reactor monitoring.

A) A supplier must monitor their UV reactors to determine if the reactors are operating within validated conditions, as determined pursuant to subsection (d)(2) of this Section. This monitoring must include UV intensity, as measured by a UV sensor; flow rate; lamp status; and other parameters that the Agency has designated by a SEP issued pursuant to Section 611.110 based on UV reactor operation. A supplier must verify the calibration of UV sensors and must recalibrate sensors in accordance with a protocol that the Agency has approved by the SEP.

B) To receive treatment credit for UV light, a supplier must treat at least 95 percent of the water delivered to the public during each month by UV reactors operating within validated conditions for the

required UV dose, as described in subsections (d)(1) and (d)(2) of this Section. The supplier must demonstrate compliance with this condition by the monitoring required pursuant to subsection (d)(3)(A) of this Section.

BOARD NOTE: Derived from 40 CFR 141.720 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1021 Reporting and Recordkeeping Requirements: Reporting Requirements

a) A supplier must report sampling schedules pursuant to Section 611.1002 and source water monitoring results pursuant to Section 611.1006 unless it notifies the Agency that it will not conduct source water monitoring because the supplier meets the criteria of Section 611.1001(d).

b) A supplier must report the use of uncovered finished water storage facilities to the Agency, as described in Section 611.1014.

c) A filtered system supplier must report its Cryptosporidium bin classification, as described in Section 611.1010.

d) An unfiltered system supplier must report its mean source water Cryptosporidium level, as described in Section 611.1012.

e) A supplier must report disinfection profiles and benchmarks to the Agency, as described in Sections 611.1008 through 611.1009, prior to making a significant change in disinfection practice.

f) A supplier must report to the Agency in accordance with subsections (f)(1) through (f)(15) of this Section for any microbial toolbox options used to comply with treatment requirements pursuant to Section 611.1011 or Section 611.1012. Alternatively, the Agency may, by a SEP issued pursuant to Section 611.110, approve a supplier to certify operation within required parameters for treatment credit rather than reporting monthly operational data for toolbox options.

1) A supplier using the watershed control program toolbox option must submit the following information on the indicated schedule:

A) A notice of intention to develop a new or continue an existing watershed control program no later than two years before the applicable treatment compliance date in Section 611.1013;

B) A watershed control plan no later than one year before the applicable treatment compliance date in Section 611.1013.

C) An annual watershed control program status report every 12 months, beginning one year after the applicable treatment compliance date in Section 611.1013; and

D) A watershed sanitary survey report: for a CWS supplier, every three years beginning three years after the applicable treatment compliance date in Section 611.1013 or, for a non-CWS supplier, every five years beginning five years after the applicable treatment compliance date in Section 611.1013.

2) A supplier using the alternative source or intake management toolbox option must submit verification that it has relocated the intake or adopted the intake withdrawal procedure reflected in monitoring results no later than the applicable treatment compliance date in Section 611.1013.

3) A supplier using the presedimentation toolbox option must submit monthly verification of the information set forth in each of subsections (f)(3)(A) through (f)(3)(D) of this Section, subject to the limitations of subsection (f)(3)(E) of this Section:

A) Continuous basin operation;

B) Treatment of 100% of the flow;

C) Continuous addition of a coagulant; and

D) At least 0.5-log mean reduction of influent turbidity or compliance with alternative Agency-approved performance criteria.

E) Monthly reporting must occur within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013.

4) A supplier using the two-stage lime softening toolbox option must submit monthly verification of the information set forth in each of subsections (f)(4)(A) and (f)(4)(B) of this Section, subject to the limitations of subsection (f)(4)(C) of this Section:

A) That chemical addition and hardness precipitation occurred in two separate and sequential softening stages prior to filtration; and

B) That both stages treated 100% of the plant flow.

C) Monthly reporting must occur within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013.

5) A supplier using the bank filtration toolbox option must submit the following information on the indicated schedule:

A) An initial demonstration of the following no later than the applicable treatment compliance date in Section 611.1013:

i) The existence of unconsolidated, predominantly sandy aquifer; and

ii) A setback distance of at least 25 ft. (0.5-log credit) or 50 ft. (1.0-log credit).

B) If the monthly average of daily max turbidity is greater than 1 NTU, then the supplier must report that result and submit an assessment of the cause within 30 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013.

6) A supplier using the combined filter performance toolbox option must submit monthly verification of combined filter effluent (CFE) turbidity levels less than or equal to 0.15 NTU in at least 95 percent of the four-hour CFE measurements taken each month. Monthly reporting must occur within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013.

7) A supplier using the individual filter performance toolbox option must submit monthly verification of the information set forth in each of subsections (f)(7)(A) and (f)(7)(B) of this Section, subject to the limitations of subsection (f)(7)(C) of this Section:

A) That individual filter effluent (IFE) turbidity were levels less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter; and

B) That no individual filter measured greater than 0.3 NTU in two consecutive readings 15 minutes apart.

C) Monthly reporting must occur within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013.

8) A supplier using the demonstration of performance toolbox option must submit the information set forth in each of subsections (f)(8)(A) and (f)(8)(B) of this Section on the indicated schedule:

A) Results from testing following an Agency-approved protocol no later than the applicable treatment compliance date in Section 611.1013.

B) As required by the Agency, monthly verification of operation within conditions of Agency-approval for demonstration of performance credit within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013..

9) A supplier using the bag filters and cartridge filters toolbox option must submit the information set forth in each of subsections (f)(9)(A) and (f)(9)(B) of this Section on the indicated schedule:

A) A demonstration, no later than the applicable treatment compliance date in Section 611.1013, that the following criteria are met:

i) That the process meets the definition of bag or cartridge filtration; and

ii) That the removal efficiency established through challenge testing that meets criteria in this Subpart Z; and

B) Monthly verification, within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013, that 100% of plant flow was filtered.

10) A supplier using the membrane filtration toolbox option must submit the following information on the indicated schedule:

A) Results of verification testing no later than the applicable treatment compliance date in Section 611.1013 that demonstrate the following:

i) Removal efficiency established through challenge testing that meets criteria set forth in this Subpart Z; and

ii) The integrity test method and parameters, including resolution, sensitivity, test frequency, control limits, and associated baseline; and

B) A monthly report within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013, that summarizes the

following:

i) All direct integrity tests above the control limit; and

ii) If applicable, any turbidity or alternative state-approved indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken.

11) A supplier using the second stage filtration toolbox option must submit monthly verification within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013, that 100% of flow was filtered through both stages and that first stage was preceded by coagulation step.

12) A supplier using the slow sand filtration (as secondary filter) toolbox option must submit monthly verification within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013, that both a slow sand filter and a preceding separate stage of filtration treated 100% of flow from Subpart B sources.

13) A supplier using the chlorine dioxide toolbox option must submit a monthly summary of CT values for each day within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013, as described in Section 611.1020.

14) A supplier using the ozone toolbox option must submit a monthly summary of CT values for each day within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013, as described in Section 611.1020.

15) A supplier using the UV toolbox option must submit the following information on the indicated schedule:

A) Validation test results no later than the applicable treatment compliance date in Section 611.1013, that demonstrate operating conditions that achieve required UV dose.

B) A monthly report summarizing the percentage of water entering the distribution system that was not treated by UV reactors operating within validated conditions for the required dose within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in Section 611.1013, as specified in 611.1020(d).

BOARD NOTE: Derived from 40 CFR 141.721 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1022 Reporting and Recordkeeping Requirements: Recordkeeping Requirements

a) A supplier must keep results from the initial round of source water monitoring pursuant to Section 611.1001(a) and the second round of source water monitoring pursuant to Section 611.1001(b) until three years after bin classification pursuant to Section 611.1010 for a filtered system supplier or determination of the mean Cryptosporidium level pursuant to Section 611.1010 for an unfiltered system supplier for the particular round of monitoring.

b) A supplier must keep any notification to the Agency that it will not conduct source water monitoring due to meeting the criteria of Section 611.1001(d) for three years.

c) A supplier must keep the results of treatment monitoring associated with microbial toolbox options pursuant to Sections 611.1016 through 611.1020 and with uncovered finished water reservoirs pursuant to Section 611.1014, as applicable, for three years.

BOARD NOTE: Derived from 40 CFR 141.722 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.1023 Requirements to respond to significant deficiencies identified in sanitary surveys performed by USEPA or the Agency.

a) A "sanitary survey" is an onsite review of the water source (identifying sources of contamination by using results of source water assessments where available), facilities, equipment, operation, maintenance, and monitoring compliance of a PWS to evaluate the adequacy of the PWS, its sources and operations, and the distribution of safe drinking water.

b) For the purposes of this Section, a "significant deficiency" includes a defect in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution supplier that USEPA or the Agency determines to be causing, or has the potential for causing the introduction of contamination into the water delivered to consumers.

c) For sanitary surveys performed by USEPA or the Agency, the supplier must respond in writing to significant deficiencies identified in sanitary survey reports no later than 45 days after receipt of the report, indicating how and on what schedule the supplier will address significant deficiencies noted in the survey.

d) A supplier must correct significant deficiencies identified in sanitary survey reports according to the schedule approved by USEPA or the Agency, or if there is no approved schedule, according to the schedule reported pursuant to subsection (c) of this Section if such deficiencies are within the control of the supplier.

BOARD NOTE: Derived from 40 CFR 141.723 (2006).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.Appendix A Regulated Contaminants

Microbiological contaminants.

Contaminant (units): Total Coliform Bacteria
Traditional MCL in mg/ℓ: MCL: (a supplier that collects 40 or more samples/month) five percent or fewer of monthly samples are positive; (systems that collect fewer than 40 samples/month) one or fewer positive monthly samples.
To convert for CCR, multiply by: --
MCL in CCR units: MCL: (a supplier that collects 40 or more samples/month) five percent or fewer of monthly samples are positive; (a supplier that collects fewer than 40 samples/month) one or fewer positive monthly samples.
MCLG: 0
Major sources in drinking water: Naturally present in the environment.
Health effects language: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Contaminant (units): Fecal coliform and E. coli
Traditional MCL in mg/ℓ: 0
To convert for CCR, multiply by: --
MCL in CCR units: 0
MCLG: 0
Major sources in drinking water: Human and animal fecal waste.
Health effects language: Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Contaminant (units): Fecal Indicators (enterococci or coliphage).
Traditional MCL in mg/ℓ: TT.
To convert for CCR, multiply by: --

MCL in CCR units: TT.
MCLG: N/A
Major sources in drinking water: Human and animal fecal waste.
Health effects language: Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

Contaminant (units): Total organic carbon (ppm)
Traditional MCL in mg/ℓ: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: N/A
Major sources in drinking water: Naturally present in the environment.
Health effects language: Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

Contaminant (units): Turbidity (NTU)
Traditional MCL in mg/ℓ: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: N/A
Major sources in drinking water: Soil runoff.
Health effects language: Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Radioactive contaminants.

Contaminant (units): Beta/photon emitters (mrem/yr)
Traditional MCL in mg/ℓ: 4 mrem/yr
To convert for CCR, multiply by: --
MCL in CCR units: 4
MCLG: 0
Major sources in drinking water: Decay of natural and man-made deposits.
Health effects language: Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta particle and photon radioactivity in excess of the MCL over many

years may have an increased risk of getting cancer.

Contaminant (units): Alpha emitters (pCi/ℓ)
Traditional MCL in mg/ℓ: 15 pCi/ℓ
To convert for CCR, multiply by: --
MCL in CCR units: 15
MCLG: 0
Major sources in drinking water: Erosion of natural deposits.
Health effects language: Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Combined radium (pCi/ℓ)
Traditional MCL in mg/ℓ: 5 pCi/ℓ
To convert for CCR, multiply by: --
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Erosion of natural deposits.
Health effects language: Some people who drink water containing radium-226 or -228 in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Uranium (µg/ℓ)
Traditional MCL in mg/ℓ: 30 µg/ℓ
To convert for CCR, multiply by: --
MCL in CCR units: 30
MCLG: 0
Major sources in drinking water: Erosion of natural deposits.
Health effects language: Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

Inorganic contaminants.

Contaminant (units): Antimony (ppb)
Traditional MCL in mg/ℓ: 0.006
To convert for CCR, multiply by: 1000
MCL in CCR units: 6
MCLG: 6
Major sources in drinking water: Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Health effects language: Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

Contaminant (units): Arsenic (ppb)

Traditional MCL in mg/ℓ: 0.05 until January 23, 2006 or 0.010 effective January 23, 2006
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: 0 (effective January 26, 2006)
Major sources in drinking water: Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Health effects language: Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Contaminant (units): Asbestos (MFL)
Traditional MCL in mg/ℓ: 7 MFL
To convert for CCR, multiply by: --
MCL in CCR units: 7
MCLG: 7
Major sources in drinking water: Decay of asbestos cement water mains; erosion of natural deposits.
Health effects language: Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.

Contaminant (units): Barium (ppm)
Traditional MCL in mg/ℓ: 2
To convert for CCR, multiply by: --
MCL in CCR units: 2
MCLG: 2
Major sources in drinking water: Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Health effects language: Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

Contaminant (units): Beryllium (ppb)
Traditional MCL in mg/ℓ: 0.004
To convert for CCR, multiply by: 1000
MCL in CCR units: 4
MCLG: 4
Major sources in drinking water: Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Health effects language: Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.

Contaminant (units): Bromate (ppb)
Traditional MCL in mg/ℓ: 0.010
To convert for CCR, multiply by: 1000
MCL in CCR units: 10

MCLG: 0
Major sources in drinking water: By-product of drinking water disinfection.
Health effects language: Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Cadmium (ppb)
Traditional MCL in mg/ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 5
Major sources in drinking water: Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Health effects language: Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

Contaminant (units): Chloramines (ppm)
Traditional MCL in mg/ℓ: MRDL=4
To convert for CCR, multiply by: --
MCL in CCR units: MRDL=4
MCLG: MRDLG=4
Major sources in drinking water: Water additive used to control microbes.
Health effects language: Some people who drink water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.

Contaminant (units): Chlorine (ppm)
Traditional MCL in mg/ℓ: MRDL=4
To convert for CCR, multiply by: --
MCL in CCR units: MRDL=4
MCLG: MRDLG=4
Major sources in drinking water: Water additive used to control microbes.
Health effects language: Some people who drink water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

Contaminant (units): Chlorine dioxide (ppb)
Traditional MCL in mg/ℓ: MRDL=800
To convert for CCR, multiply by: 1000
MCL in CCR units: MRDL=800
MCLG: MRDLG=800
Major sources in drinking water: Water additive used to control microbes.
Health effects language: Some infants and young children who drink water containing chlorine dioxide well in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water

containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.

Contaminant (units): Chlorite (ppm)
Traditional MCL in mg/ℓ: MRDL=1
To convert for CCR, multiply by: --
MCL in CCR units: MRDL=1
MCLG: MRDLG=0.8
Major sources in drinking water: By-product of drinking water disinfection.
Health effects language: Some infants and young children who drink water containing chlorite well in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.

Contaminant (units): Chromium (ppb)
Traditional MCL in mg/ℓ: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from steel and pulp mills; erosion of natural deposits.
Health effects language: Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

Contaminant (units): Copper (ppm)
Traditional MCL in mg/ℓ: AL=1.3
To convert for CCR, multiply by: --
MCL in CCR units: AL=1.3
MCLG: 1.3
Major sources in drinking water: Corrosion of household plumbing systems; erosion of natural deposits.
Health effects language: Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Contaminant (units): Cyanide (ppb)
Traditional MCL in mg/ℓ: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Discharge from steel/metal factories; discharge from plastic and fertilizer factories.
Health effects language: Some people who drink water containing cyanide well in excess

of the MCL over many years could experience nerve damage or problems with their thyroid.

Contaminant (units): Fluoride (ppm)
Traditional MCL in mg/ℓ: 4
To convert for CCR, multiply by: --
MCL in CCR units: 4
MCLG: 4
Major sources in drinking water: Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Health effects language: Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.

Contaminant (units): Lead (ppb)
Traditional MCL in mg/ℓ: AL=0.015
To convert for CCR, multiply by: 1000
MCL in CCR units: AL=15
MCLG: 0
Major sources in drinking water: Corrosion of household plumbing systems; erosion of natural deposits.
Health effects language: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Contaminant (units): Mercury (inorganic) (ppb)
Traditional MCL in mg/ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 2
Major sources in drinking water: Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Health effects language: Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.

Contaminant (units): Nitrate (ppm)
Traditional MCL in mg/ℓ: 10
To convert for CCR, multiply by: --
MCL in CCR units: 10
MCLG: 10
Major sources in drinking water: Runoff from fertilizer use; leaching from septic tanks,

sewage; erosion of natural deposits.
Health effects language: Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Contaminant (units): Nitrite (ppm)
Traditional MCL in mg/ℓ: 1
To convert for CCR, multiply by: --
MCL in CCR units: 1
MCLG: 1
Major sources in drinking water: Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Health effects language: Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Contaminant (units): Selenium (ppb)
Traditional MCL in mg/ℓ: 0.05
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: 50
Major sources in drinking water: Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Health effects language: Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

Contaminant (units): Thallium (ppb)
Traditional MCL in mg/ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0.5
Major sources in drinking water: Leaching from ore-processing sites; discharge from electronics, glass, and drug factories.
Health effects language: Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

Synthetic organic contaminants including pesticides and herbicides.

Contaminant (units): 2,4-D (ppb)
Traditional MCL in mg/ℓ: 0.07
To convert for CCR, multiply by: 1000
MCL in CCR units: 70
MCLG: 70

Major sources in drinking water: Runoff from herbicide used on row crops.
Health effects language: Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

Contaminant (units): 2,4,5-TP (silvex) (ppb)
Traditional MCL in mg/ℓ: 0.05
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: 50
Major sources in drinking water: Residue of banned herbicide.
Health effects language: Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.

Contaminant (units): Acrylamide
Traditional MCL in mg/ℓ: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: 0
Major sources in drinking water: Added to water during sewage/wastewater treatment.
Health effects language: Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.

Contaminant (units): Alachlor (ppb)
Traditional MCL in mg/ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0
Major sources in drinking water: Runoff from herbicide used on row crops.
Health effects language: Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.

Contaminant (units): Atrazine (ppb)
Traditional MCL in mg/ℓ: 0.003
To convert for CCR, multiply by: 1000
MCL in CCR units: 3
MCLG: 3
Major sources in drinking water: Runoff from herbicide used on row crops.
Health effects language: Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.

Contaminant (units): Benzo(a)pyrene (PAH) (nanograms/ℓ)
Traditional MCL in mg/ℓ: 0.0002

To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 0
Major sources in drinking water: Leaching from linings of water storage tanks and distribution lines.
Health effects language: Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.

Contaminant (units): Carbofuran (ppb)
Traditional MCL in mg/ℓ: 0.04
To convert for CCR, multiply by: 1000
MCL in CCR units: 40
MCLG: 40
Major sources in drinking water: Leaching of soil fumigant used on rice and alfalfa.
Health effects language: Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.

Contaminant (units): Chlordane (ppb)
Traditional MCL in mg/ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0
Major sources in drinking water: Residue of banned termiticide.
Health effects language: Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.

Contaminant (units): Dalapon (ppb)
Traditional MCL in mg/ℓ: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Runoff from herbicide used on rights of way.
Health effects language: Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

Contaminant (units): Di(2-ethylhexyl)adipate (ppb)
Traditional MCL in mg/ℓ: 0.4
To convert for CCR, multiply by: 1000
MCL in CCR units: 400
MCLG: 400
Major sources in drinking water: Discharge from chemical factories.
Health effects language: Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience

toxic effects, such as weight loss, liver enlargement, or possible reproductive difficulties.

Contaminant (units): Di(2-ethylhexyl)phthalate (ppb)
Traditional MCL in mg/ℓ: 0.006
To convert for CCR, multiply by: 1000
MCL in CCR units: 6
MCLG: 0
Major sources in drinking water: Discharge from rubber and chemical factories.
Health effects language: Some people who drink water containing di(2-ethylhexyl)phthalate well in excess of the MCL over many years may have problems with their liver or experience reproductive difficulties, and they may have an increased risk of getting cancer.

Contaminant (units): Dibromochloropropane (DBCP) (ppt)
Traditional MCL in mg/ℓ: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 0
Major sources in drinking water: Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Health effects language: Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.

Contaminant (units): Dinoseb (ppb)
Traditional MCL in mg/ℓ: 0.007
To convert for CCR, multiply by: 1000
MCL in CCR units: 7
MCLG: 7
Major sources in drinking water: Runoff from herbicide used on soybeans and vegetables.
Health effects language: Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.

Contaminant (units): Diquat (ppb)
Traditional MCL in mg/ℓ: 0.02
To convert for CCR, multiply by: 1000
MCL in CCR units: 20
MCLG: 20
Major sources in drinking water: Runoff from herbicide use.
Health effects language: Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.

Contaminant (units): Dioxin (2,3,7,8-TCDD) (ppq)
Traditional MCL in mg/ℓ: 0.00000003

To convert for CCR, multiply by: 1,000,000,000
MCL in CCR units: 30
MCLG: 0
Major sources in drinking water: Emissions from waste incineration and other combustion; discharge from chemical factories.
Health effects language: Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

Contaminant (units): Endothall (ppb)
Traditional MCL in mg/ℓ: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Runoff from herbicide use.
Health effects language: Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.

Contaminant (units): Endrin (ppb)
Traditional MCL in mg/ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 2
Major sources in drinking water: Residue of banned insecticide.
Health effects language: Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

Contaminant (units): Epichlorohydrin
Traditional MCL in mg/ℓ: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: 0
Major sources in drinking water: Discharge from industrial chemical factories; an impurity of some water treatment chemicals.
Health effects language: Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

Contaminant (units): Ethylene dibromide (ppt)
Traditional MCL in mg/ℓ: 0.00005
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 50
MCLG: 0
Major sources in drinking water: Discharge from petroleum refineries.
Health effects language: Some people who drink water containing ethylene dibromide in

excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.

Contaminant (units): Glyphosate (ppb)
Traditional MCL in mg/ℓ: 0.7
To convert for CCR, multiply by: 1000
MCL in CCR units: 700
MCLG: 700
Major sources in drinking water: Runoff from herbicide use.
Health effects language: Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.

Contaminant (units): Heptachlor (ppt)
Traditional MCL in mg/ℓ: 0.0004
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 400
MCLG: 0
Major sources in drinking water: Residue of banned pesticide.
Health effects language: Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.

Contaminant (units): Heptachlor epoxide (ppt)
Traditional MCL in mg/ℓ: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 0
Major sources in drinking water: Breakdown of heptachlor.
Health effects language: Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

Contaminant (units): Hexachlorobenzene (ppb)
Traditional MCL in mg/ℓ: 0.001
To convert for CCR, multiply by: 1000
MCL in CCR units: 1
MCLG: 0
Major sources in drinking water: Discharge from metal refineries and agricultural chemical factories.
Health effects language: Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.

Contaminant (units): Hexachlorocyclopentadiene (ppb)
Traditional MCL in mg/ℓ: 0.05
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: 50
Major sources in drinking water: Discharge from chemical factories.
Health effects language: Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.

Contaminant (units): Lindane (ppt)
Traditional MCL in mg/ℓ: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Runoff/leaching from insecticide used on cattle, lumber, gardens.
Health effects language: Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

Contaminant (units): Methoxychlor (ppb)
Traditional MCL in mg/ℓ: 0.04
To convert for CCR, multiply by: 1000
MCL in CCR units: 40
MCLG: 40
Major sources in drinking water: Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock.
Health effects language: Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.

Contaminant (units): Oxamyl (vydate) (ppb)
Traditional MCL in mg/ℓ: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Runoff/leaching from insecticide used on apples, potatoes and tomatoes.
Health effects language: Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.

Contaminant (units): PCBs (polychlorinated biphenyls) (ppt)
Traditional MCL in mg/ℓ: 0.0005
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 500
MCLG: 0
Major sources in drinking water: Runoff from landfills; discharge of waste chemicals.

Health effects language: Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.

Contaminant (units): Pentachlorophenol (ppb)
Traditional MCL in mg/ℓ: 0.001
To convert for CCR, multiply by: 1000
MCL in CCR units: 1
MCLG: 0
Major sources in drinking water: Discharge from wood preserving factories.
Health effects language: Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.

Contaminant (units): Picloram (ppb)
Traditional MCL in mg/ℓ: 0.5
To convert for CCR, multiply by: 1000
MCL in CCR units: 500
MCLG: 500
Major sources in drinking water: Herbicide runoff.
Health effects language: Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): Simazine (ppb)
Traditional MCL in mg/ℓ: 0.004
To convert for CCR, multiply by: 1000
MCL in CCR units: 4
MCLG: 4
Major sources in drinking water: Herbicide runoff.
Health effects language: Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.

Contaminant (units): Toxaphene (ppb)
Traditional MCL in mg/ℓ: 0.003
To convert for CCR, multiply by: 1000
MCL in CCR units: 3
MCLG: 0
Major sources in drinking water: Runoff/leaching from insecticide used on cotton and cattle.
Health effects language: Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

Volatile organic contaminants.

Contaminant (units): Benzene (ppb)
Traditional MCL in mg/ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from factories; leaching from gas storage tanks and landfills.
Health effects language: Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.

Contaminant (units): Carbon tetrachloride (ppb)
Traditional MCL in mg/ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from chemical plants and other industrial activities.
Health effects language: Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Contaminant (units): Chlorobenzene (ppb)
Traditional MCL in mg/ℓ: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from chemical and agricultural chemical factories.
Health effects language: Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.

Contaminant (units): o-Dichlorobenzene (ppb)
Traditional MCL in mg/ℓ: 0.6
To convert for CCR, multiply by: 1000
MCL in CCR units: 600
MCLG: 600
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

Contaminant (units): p-Dichlorobenzene (ppb)

Traditional MCL in mg/ℓ: 0.075
To convert for CCR, multiply by: 1000
MCL in CCR units: 75
MCLG: 75
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia; damage to their liver, kidneys, or spleen; or changes in their blood.

Contaminant (units): 1,2-Dichloroethane (ppb)
Traditional MCL in mg/ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): 1,1-Dichloroethylene (ppb)
Traditional MCL in mg/ℓ: 0.007
To convert for CCR, multiply by: 1000
MCL in CCR units: 7
MCLG: 7
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): cis-1,2-Dichloroethylene (ppb)
Traditional MCL in mg/ℓ: 0.07
To convert for CCR, multiply by: 1000
MCL in CCR units: 70
MCLG: 70
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): trans-1,2-Dichloroethylene (ppb)
Traditional MCL in mg/ℓ: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): Dichloromethane (ppb)
Traditional MCL in mg/ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from pharmaceutical and chemical factories.
Health effects language: Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

Contaminant (units): 1,2-Dichloropropane (ppb)
Traditional MCL in mg/ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Ethylbenzene (ppb)
Traditional MCL in mg/ℓ: 0.7
To convert for CCR, multiply by: 1000
MCL in CCR units: 700
MCLG: 700
Major sources in drinking water: Discharge from petroleum refineries.
Health effects language: Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.

Contaminant (units): Haloacetic acids (HAA5) (ppb)
Traditional MCL in mg/ℓ: 0.060
To convert for CCR, multiply by: 1000
MCL in CCR units: 60
MCLG: N/A
Major sources in drinking water: Byproduct of drinking water disinfection.
Health effects language: Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Styrene (ppb)
Traditional MCL in mg/ℓ: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from rubber and plastic factories; leaching

from landfills.
Health effects language: Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.

Contaminant (units): Tetrachloroethylene (ppb)
Traditional MCL in mg/ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from factories and dry cleaners.
Health effects language: Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.

Contaminant (units): 1,2,4-Trichlorobenzene (ppb)
Traditional MCL in mg/ℓ: 0.07
To convert for CCR, multiply by: 1000
MCL in CCR units: 70
MCLG: 70
Major sources in drinking water: Discharge from textile-finishing factories.
Health effects language: Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

Contaminant (units): 1,1,1-Trichloroethane (ppb)
Traditional MCL in mg/ℓ: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Discharge from metal degreasing sites and other factories.
Health effects language: Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

Contaminant (units): 1,1,2-Trichloroethane (ppb)
Traditional MCL in mg/ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 3
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

Contaminant (units): Trichloroethylene (ppb)
Traditional MCL in mg/ℓ: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from metal degreasing sites and other factories.
Health effects language: Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Contaminant (units): TTHMs (total trihalomethanes) (ppb)
Traditional MCL in mg/ℓ: 0.10/0.080
To convert for CCR, multiply by: 1000
MCL in CCR units: 100/80
MCLG: N/A
Major sources in drinking water: Byproduct of drinking water disinfection.
Health effects language: Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Contaminant (units): Toluene (ppm)
Traditional MCL in mg/ℓ: 1
To convert for CCR, multiply by: --
MCL in CCR units: 1
MCLG: 1
Major sources in drinking water: Discharge from petroleum factories.
Health effects language: Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.

Contaminant (units): Vinyl Chloride (ppb)
Traditional MCL in mg/ℓ: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0
Major sources in drinking water: Leaching from PVC piping; discharge from plastics factories.
Health effects language: Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Xylenes (ppm)
Traditional MCL in mg/ℓ: 10
To convert for CCR, multiply by: --
MCL in CCR units: 10

MCLG: 10
Major sources in drinking water: Discharge from petroleum factories; discharge from chemical factories.
Health effects language: Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

Key.

Abbreviation	Meaning
AL	action level
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
MFL	million fibers per liter
MRDL	maximum residual disinfectant level
MRDLG	maximum residual disinfectant level goal
mrem/year	millirems per year (a measure of radiation absorbed by the body)
N/A	not applicable
NTU	nephelometric turbidity units(a measure of water clarity)
pCi/ℓ	picocuries per liter (a measure of radioactivity)
ppm	parts per million, or milligrams per liter (mg/ℓ)
ppb	parts per billion, or micrograms per liter (µg/ℓ)
ppt	parts per trillion, or nanograms per liter
ppq	parts per quadrillion, or picograms per liter
TT	treatment technique

BOARD NOTE: Derived from Appendix A to Subpart O to 40 CFR 141 ~~(2003)~~ (2006), as amended at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.Appendix C Common Names of Organic Chemicals

The following common names are used for certain organic chemicals:

Common Name	CAS No.	CAS Name
Aldrin	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha, 4alpha, 4abeta, 5alpha, 8alpha, 8abeta)-
Bromoform	75-25-2	Methane, tribromo-
Chlordane	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
Chloroform	67-66-3	Methane, trichloro-
2,4-D	94-75-7	Acetic acid, 2,4-dichlorophenoxy-

DDT	50-29-3	Benzene, 1,1'-(2, 2, 2-trichloroethylidene) bis(4-chloro-
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth(2,3-b)oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha, 2beta, 2aalpha, 3beta, 6beta, 6aalpha, 7beta, 7aalpha)-
Endrin	72-20-8	2,7:3,6-Dimethanonaphth(2,3-b)oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha, 2beta, 2abeta, 3alpha, 6alpha, 6abeta, 7beta, 7aalpha)-,
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
Heptachlor epoxide	1024-57-3	2, 5-Methano-2H-indeno(1, 2b)oxirene, 2, 3, 4, 5, 6, 7, 7-heptachloro-1a, 1b, 5, 5a, 6, 6a-hexahydro-, (1a alpha, 1b beta, 2 alpha, 5 alpha, 5a beta, 6beta, 6a alpha)-
Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1 alpha,2 alpha,3 beta,4 alpha,5 alpha,6 beta)-
Methoxychlor	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-methoxy-
Silvex (2,4,5-TP)	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
Toxaphene	8001-35-2	Toxaphene
TTHM	Total trihalomethanes (See Section 611.101)	

BOARD NOTE: Derived from 40 CFR 141.30 and 261, Appendix VIII ~~(2002)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.Appendix G NPDWR Violations and Situations Requiring Public Notice

See note 1 at the end of this Appendix G for an explanation of the Agency's authority to alter the magnitude of a violation from that set forth in the following table.

	MCL/MRDL/TT violations[2]		Monitoring & testing procedure violations	
Contaminant	Tier of public notice	Citation	Tier of public notice	Citation

	required		required	

I. Violations of National Primary Drinking Water Regulations (NPDWR):[3]

A. Microbiological Contaminants

1. Total coliform	2	611.325(a)	3	611.521-611.525
2. Fecal coliform/E. coli	1	611.325(b)	[4] 1, 3	611.525
3. Turbidity MCL	2	611.320(a)	3	611.560
4. Turbidity MCL (average of two days' samples greater than 5 NTU)	[5] 2, 1	611.320(b)	3	611.560
5. Turbidity (for TT violations resulting from a single exceedence of maximum allowable turbidity level)	[6] 2, 1	611.231(b), 611.233(b)(1), 611.250(a)(2), 611.250(b)(2), 611.250(c)(2), 611.250(d), 611.743(a)(2), 611.743(b), 611.955(b)(2)	3	611.531(a), 611.532(b), 611.533(a), 611.744, 611.956(a)(1)-(a)(3), 611.956(b)
6. Surface Water Treatment Rule violations, other than violations resulting from single exceedence of max. allowable turbidity level (TT)	2	611.211, 611.213, 611.220, 611.230-611.233, 611.240-611.242, 611.250	3	611.531-611.533
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from single exceedence of max. turbidity level (TT)	2	[7] 611.740-611.743, 611.950-611.955	3	611.742, 611.744, 611.953, 611.954, 611.956
8. Filter Backwash Recycling Rule violations	2	611.276(c)	3	611.276(b), (d)
9. Long Term 1 Enhanced Surface Water Treatment Rule violations	2	611.950-611.955	3	611.953, 611.954, 611.956
10. LT2ESWTR violations	2	611.1010-611.1020	[22] 2, 3	611.1001-611.1005 and 611.1008-611.1009
11. Groundwater Rule violations	2	611.804	3	611.802(h)

B. Inorganic Chemicals (IOCs)

1. Antimony	2	611.301(b)	3	611.600, 611.601, 611.603
2. Arsenic	2	~~10~~ 8 611.301(b)	3	~~9~~ 11 611.601, 611.612(a), 611.612(b)
3. Asbestos (fibers greater than 10 μm)	2	611.301(b)	3	611.600, 611.601, 611.602
4. Barium	2	611.301(b)	3	611.600, 611.601, 611.603
5. Beryllium	2	611.301(b)	3	611.600, 611.601, 611.603
6. Cadmium	2	611.301(b)	3	611.600, 611.601, 611.603
7. Chromium (total)	2	611.301(b)	3	611.600, 611.601, 611.603
8. Cyanide	2	611.301(b)	3	611.600, 611.601, 611.603
9. Fluoride	2	611.301(b)	3	611.600, 611.601, 611.603
10. Mercury (inorganic)	2	611.301(b)	3	611.600, 611.601, 611.603
11. Nitrate	1	611.301(b)	~~10~~ 12 1, 3	611.600, 611.601, 611.604, 611.606
12. Nitrite	1	611.301(b)	~~10~~ 12 1, 3	611.600, 611.601, 611.605, 611.606
13. Total Nitrate and Nitrite	1	611.301(b)	3	611.600, 611.601
14. Selenium	2	611.301(b)	3	611.600, 611.601, 611.603

15. Thallium	2	611.301(b)	3	611.600, 611.601, 611.603

C. Lead and Copper Rule (Action Level for lead is 0.015 mg/ℓ, for copper is 1.3 mg/ℓ)

1. Lead and Copper Rule (TT)	2	611.350-611.355	3	611.356-611.359

D. Synthetic Organic Chemicals (SOCs)

1. 2,4-D	2	611.310(c)	3	611.648
2. 2,4,5-TP (silvex)	2	611.310(c)	3	611.648
3. Alachlor	2	611.310(c)	3	611.648
4. Atrazine	2	611.310(c)	3	611.648
5. Benzo(a)pyrene (PAHs)	2	611.310(c)	3	611.648
6. Carbofuran	2	611.310(c)	3	611.648
7. Chlordane	2	611.310(c)	3	611.648
8. Dalapon	2	611.310(c)	3	611.648
9. Di(2-ethylhexyl)adipate	2	611.310(c)	3	611.648
10. Di(2-ethylhexyl)phthalate	2	611.310(c)	3	611.648
11. Dibromochloropropane (DBCP)	2	611.310(c)	3	611.648
12. Dinoseb	2	611.310(c)	3	611.648
13. Dioxin (2,3,7,8-TCDD)	2	611.310(c)	3	611.648
14. Diquat	2	611.310(c)	3	611.648
15. Endothall	2	611.310(c)	3	611.648
16. Endrin	2	611.310(c)	3	611.648
17. Ethylene dibromide	2	611.310(c)	3	611.648
18. Glyphosate	2	611.310(c)	3	611.648
19. Heptachlor	2	611.310(c)	3	611.648
20. Heptachlor epoxide	2	611.310(c)	3	611.648
21. Hexachlorobenzene	2	611.310(c)	3	611.648
22. Hexachlorocyclopentadiene	2	611.310(c)	3	611.648
23. Lindane	2	611.310(c)	3	611.648
24. Methoxychlor	2	611.310(c)	3	611.648
25. Oxamyl (Vydate)	2	611.310(c)	3	611.648
26. Pentachlorophenol	2	611.310(c)	3	611.648
27. Picloram	2	611.310(c)	3	611.648
28. Polychlorinated biphenyls (PCBs)	2	611.310(c)	3	611.648
29. Simazine	2	611.310(c)	3	611.648
30. Toxaphene	2	611.310(c)	3	611.648

E. Volatile Organic Chemicals (VOCs)

1. Benzene	2	611.310(a)	3	611.646

2. Carbon tetrachloride	2	611.310(a)	3	611.646
3. Chlorobenzene (monochlorobenzene)	2	611.310(a)	3	611.646
4. o-Dichlorobenzene	2	611.310(a)	3	611.646
5. p-Dichlorobenzene	2	611.310(a)	3	611.646
6. 1,2-Dichloroethane	2	611.310(a)	3	611.646
7. 1,1-Dichloroethylene	2	611.310(a)	3	611.646
8. cis-1,2-Dichloroethylene	2	611.310(a)	3	611.646
9. trans-1,2-Dichloroethylene	2	611.310(a)	3	611.646
10. Dichloromethane	2	611.310(a)	3	611.646
11. 1,2-Dichloropropane	2	611.310(a)	3	611.646
12. Ethylbenzene	2	611.310(a)	3	611.646
13. Styrene	2	611.310(a)	3	611.646
14. Tetrachloroethylene	2	611.310(a)	3	611.646
15. Toluene	2	611.310(a)	3	611.646
16. 1,2,4-Trichlorobenzene	2	611.310(a)	3	611.646
17. 1,1,1-Trichloroethane	2	611.310(a)	3	611.646
18. 1,1,2-Trichloroethane	2	611.310(a)	3	611.646
19. Trichloroethylene	2	611.310(a)	3	611.646
20. Vinyl chloride	2	611.310(a)	3	611.646
21. Xylenes (total)	2	611.310(a)	3	611.646

F. Radioactive Contaminants

1. Beta/photon emitters	2	611.330(d)	3	611.720(a), 611.732
2. Alpha emitters	2	611.330(c)	3	611.720(a), 611.731
3. Combined radium (226 & 228)	2	611.330(b)	3	611.720(a), 611.731
4. Uranium	2	611.330(e)	3	611.720(a), 611.731

G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). USEPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).[13]

1. Total trihalomethanes (TTHMs)	2	~~611.312(a)~~ [14] 611.312(b)	3	~~611.382(a)-(b)~~ Subparts W and Y of this Part
2. Haloacetic Acids (HAA5)	2	~~611.312(a)~~ 611.312(b)	3	~~611.382(a)-(b)~~ Subpart Y of this Part
3. Bromate	2	611.312(a)	3	611.382(a)-(b)

4. Chlorite	2	611.312(a)	3	611.382(a)-(b)
5. Chlorine (MRDL)	2	611.313(a)	3	611.382(a), (c)
6. Chloramine (MRDL)	2	611.313(a)	3	611.382(a), (c)
7. Chlorine dioxide (MRDL), where any two consecutive daily samples at entrance to distribution system only are above MRDL	2	611.313(a), 611.383(c)(3)	2 [15], 3	611.382(a), (c), 611.383(c)(2)
8. Chlorine dioxide (MRDL), where samples in distribution system the next day are also above MRDL	[16] 1	611.313(a), 611.383(c)(3)	1	611.382(a), (c), 611.383(c)(2)
9. Control of DBP precursors--TOC (TT)	2	611.385(a)-(b)	3	611.382(a), (d)
10. Benchmarking and disinfection profiling	N/A	N/A	3	611.742, 611.953, 611.954
11. Development of monitoring plan	N/A	N/A	3	611.382(f)

H. Other Treatment Techniques

1. Acrylamide (TT)	2	611.296	N/A	N/A
2. Epichlorohydrin (TT)	2	611.296	N/A	N/A

II. Unregulated Contaminant Monitoring: [17]

A. Unregulated contaminants	N/A	N/A	3	611.510
B. Nickel	N/A	N/A	3	611.603, 611.611

III. Public Notification for Relief Equivalent to a SDWA section 1415 Variance or a section 1416 Exemption.

A. Operation under relief equivalent to a SDWA section 1415 variance or a section 1416 exemption	3	[18] 1415, 1416	N/A	N/A
B. Violation of conditions of relief equivalent to a SDWA section 1415 variance or a section 1416 exemption	2	1415, 1416, [19] 611.111, 611.112	N/A	N/A

IV. Other Situations Requiring Public Notification.

A. Fluoride secondary maximum contaminant level (SMCL) exceedence	3	611.858	N/A	N/A

B. Exceedence of nitrate MCL for a non-CWS supplier, as allowed by the Agency	1	611.300(d)	N/A	N/A
C. Availability of unregulated contaminant monitoring data	3	611.510	N/A	N/A
D. Waterborne disease outbreak	1	611.101, 611.233(b)(2)	N/A	N/A
E. Other waterborne emergency[20]	1	N/A	N/A	N/A
~~F.~~ G. Other situations, as determined by the Agency by a SEP issued pursuant to Section 611.110	[21] 1, 2, 3	N/A	N/A	N/A
F. Source water sample positive for groundwater rule fecal indicators: E. coli, enterococci, or coliphage	1	611.802(g)	N/A	N/A

Appendix G--Endnotes

1. Violations and other situations not listed in this table (e.g., failure to prepare Consumer Confidence Reports) do not require notice, unless otherwise determined by the Agency by a SEP issued pursuant to Section 611.110. The Agency may, by a SEP issued pursuant to Section 611.110, further require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under Sections 611.902(a) and 611.903(a).

2. Definition of the abbreviations used: "MCL" means maximum contaminant level, "MRDL" means maximum residual disinfectant level, and "TT" means treatment technique.

3. The term "violations of National Primary Drinking Water Regulations (NPDWR)" is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.

4. Failure to test for fecal coliform or E. coli is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3 violations.

5. A supplier that violates the turbidity MCL of 5 NTU based on an average of measurements over two consecutive days must consult with the Agency within 24 hours after learning of the violation. Based on this consultation, the Agency may subsequently decide to issue a SEP pursuant to Section 611.110 that elevates the violation to a Tier 1 violation. If a supplier is unable to make contact with the Agency in the 24-hour period, the violation is automatically elevated to a Tier 1 violation.

6. A supplier with a treatment technique violation involving a single exceedence of a maximum turbidity limit under the Surface Water Treatment Rule (SWTR), the Interim Enhanced Surface Water Treatment Rule (IESWTR), or the Long Term 1 Enhanced Surface Water Treatment Rule are required to consult with the Agency within 24 hours after learning of the violation. Based on this consultation, the Agency may subsequently decide to issue a SEP pursuant to Section 611.110 that elevates the violation to a Tier 1 violation. If a supplier is unable to make contact with the Agency in the 24-hour period, the violation is automatically elevated to a Tier 1 violation.

7. The Surface Water Treatment Rule (SWTR) remains in effect for a supplier ~~serving~~ that serves at least 10,000 persons; the Interim Enhanced Surface Water Treatment Rule adds additional requirements and does not in many cases supercede the SWTR.

8. ~~The arsenic MCL citations are effective January 23, 2006. Until then, the citations are Sections 611.330(b) and 611.612(c).~~This endnote 8 corresponds with the endnote to the table in Appendix A to Subpart Q of 40 CFR 141 (2006), which stated a past effective date. This statement maintains structural consistency with the federal regulations.

9. ~~The arsenic Tier 3 violation MCL citations are effective January 23, 2006. Until then, the citations are Sections 611.100, 611.101, and 611.612.~~This endnote 8 corresponds with the endnote to the table in Appendix A to Subpart Q of 40 CFR 141 (2006), which stated a past effective date. This statement maintains structural consistency with the federal regulations.

10. Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are Tier 3.

11. This endnote 11 corresponds with the endnote to the table in Appendix A to Subpart Q of 40 CFR 141 ~~(2003)~~ (2006), which stated a past effective date. This statement maintains structural consistency with the federal regulations.

12. This endnote 12 corresponds with the endnote to the table in Appendix A to Subpart Q of 40 CFR 141 ~~(2003)~~ (2006), which stated a past effective date. This statement maintains structural consistency with the federal regulations.

13. A Subpart B community or non-transient non-community system supplier must comply with new DBP MCLs, disinfectant MRDLs, and related monitoring requirements. A Subpart B transient non-community system supplier ~~serving~~ that serves10,000 or more persons that uses chlorine dioxide as a disinfectant or oxidant or a Subpart B transient non-community system supplier that serves fewer than 10,000 persons, which uses only groundwater not under the direct influence of surface water, and which uses chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL.

14. ~~This endnote 14 corresponds with the endnote to the table in Appendix A to Subpart Q of 40 CFR 141 (2003), which stated a past effective date. This statement maintains structural consistency with the federal regulations.~~Sections 611.312(b)(1) and 611.382(a) and (b) apply until Subpart Y of this Part takes effect under the schedule set forth in Section 611.970(c).

15. Failure 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 is a Tier 2 violation.

16. If 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. A failure to take the required samples in the distribution system after the MRDL is exceeded at the entry point also triggers Tier 1 notification.

17. Some water suppliers must monitor for certain unregulated contaminants listed in Section 611.510.

18. This citation refers to sections 1415 and 1416 of the federal Safe Drinking Water Act. sections 1415 and 1416 require that "a schedule prescribed . . . for a public water system granted relief equivalent to a SDWA section 1415 variance or a section 1416 exemption must require compliance by the system . . .."

19. In addition to sections 1415 and 1416 of the federal Safe Drinking Water Act, 40 CFR 142.307 specifies the items and schedule milestones that must be included in relief equivalent to a SDWA section 1415 small system variance. In granting any form of relief from an NPDWR, the Board will consider all applicable federal requirements for and limitations on the State's ability to grant relief consistent with federal law.

20. Other waterborne emergencies require a Tier 1 public notice under Section 611.902(a) for situations that do not meet the definition of a waterborne disease outbreak given in Section 611.101, but which still have the potential to have serious adverse effects on health as a result of short-term exposure. These could include outbreaks not related to treatment deficiencies, as well as situations that have the potential to cause outbreaks, such as failures or significant interruption in water treatment processes, natural disasters that disrupt the water supply or distribution system, chemical spills, or unexpected loading of possible pathogens into the source water.

21. The Agency may place any other situation in any tier it deems appropriate in writing, based on the prospective threat which it determines that the situation poses to public health, and subject to Board review pursuan to Section 40 of the Act [415 ILCS 5/40].

22. A failure to collect three or more samples for Cryptosporidium analysis is a Tier 2 violation requiring special notice, as specified in Section 611.911. All other monitoring and testing procedure violations are Tier 3.

BOARD NOTE: Derived from Appendix A to Subpart Q to 40 CFR 141 ~~(2003)~~ (2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.Appendix H Standard Health Effects Language for Public Notification

Contaminant	MCLG[1] mg/ℓ	MCL[2] mg/ℓ	Standard health effects language for public notification
National Primary Drinking Water Regulations (NPDWR):			
A. Microbiological Contaminants			
1a. Total coliform	Zero	See footnote 3	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
1b. Fecal coliform/E. coli	Zero	Zero	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
1c. Fecal indicators (GWR): i. E. coli ii. enterococci iii. coliphage	 Zero None None	 TT TT TT	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
1d. Groundwater Rule TT violations	None	TT	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

2a. Turbidity (MCL) [4]	None	1 NTU[5]/ 5 NTU	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
2b. Turbidity (SWTR TT)	None	TT[7]	Turbidity has no health effects. However,[6] turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
2c. Turbidity (IESWTR TT and LT1ESWTR TT)	None	TT	Turbidity has no health effects. However,[8] turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
B. Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), and Filter Backwash Recycling Rule (FBRR) violations:			
3. Giardia lamblia (SWTR/IESWTR/ LT1ESWTR)	Zero	TT[10]	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

4. Viruses (SWTR/IESWTR/ LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
5. Heterotrophic plate count (HPC) bacteria[9] (SWTR/IESWTR/ LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
6. Legionella (SWTR/IESWTR/ LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
7. Cryptosporidium (IESWTR/FBRR/ LT1ESWTR)			Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
C. Inorganic Chemicals (IOCs)			
8. Antimony	0.006	0.006	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
9. Arsenic[11]	0	0.010	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

10. Asbestos (10 µm)	7 MFL[12]	7 MFL	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
11. Barium	2	2	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
12. Beryllium	0.004	0.004	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
13. Cadmium	0.005	0.005	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
14. Chromium (total)	0.1	0.1	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
15. Cyanide	0.2	0.2	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
16. Fluoride	4.0	4.0	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.

17. Mercury (inorganic)	0.002	0.002	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
18. Nitrate	10	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
19. Nitrite	1	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
20. Total Nitrate and Nitrite	10	10	Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
21. Selenium	0.05	0.05	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
22. Thallium	0.0005	0.002	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

D. Lead and Copper Rule			
23. Lead	Zero	TT[13]	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
24. Copper	1.3	TT[14]	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
E. Synthetic Organic Chemicals (SOCs)			
25. 2,4-D	0.07	0.07	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
26. 2,4,5-TP (silvex)	0.05	0.05	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
27. Alachlor	Zero	0.002	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.

28. Atrazine	0.003	0.003	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
29. Benzo(a)pyrene (PAHs).	Zero	0.0002	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
30. Carbofuran	0.04	0.04	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
31. Chlordane	Zero	0.002	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
32. Dalapon	0.2	0.2	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
33. Di(2-ethylhexyl)adipate	0.4	0.4	Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience toxic effects, such as weight loss, liver enlargement, or possible reproductive difficulties.
34. Di(2-ethylhexyl)-phthalate	Zero	0.006	Some people who drink water containing di(2-ethylhexyl)phthalate well in excess of the MCL over many years may have problems with their liver or experience reproductive difficulties, and they may have an increased risk of getting cancer.

35. Dibromochloropropane (DBCP)	Zero	0.0002	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
36. Dinoseb	0.007	0.007	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
37. Dioxin (2,3,7,8-TCDD)	Zero	3×10^{-8}	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
38. Diquat	0.02	0.02	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
39. Endothall	0.1	0.1	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
40. Endrin	0.002	0.002	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
41. Ethylene dibromide	Zero	0.00005	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
42. Glyphosate	0.7	0.7	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.

43. Heptachlor	Zero	0.0004	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
44. Heptachlor epoxide	Zero	0.0002	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
45. Hexachlorobenzene	Zero	0.001	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
46. Hexachlorocyclopenta-diene	0.05	0.05	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
47. Lindane	0.0002	0.0002	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
48. Methoxychlor	0.04	0.04	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
49. Oxamyl (Vydate)	0.2	0.2	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.

50. Pentachlorophenol	Zero	0.001	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
51. Picloram	0.5	0.5	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
52. Polychlorinated biphenyls (PCBs)	Zero	0.0005	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
53. Simazine	0.004	0.004	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
54. Toxaphene	Zero	0.003	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
F. Volatile Organic Chemicals (VOCs)			
55. Benzene	Zero	0.005	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
56. Carbon tetrachloride	Zero	0.005	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

57. Chlorobenzene (monochlorobenzene)	0.1	0.1	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
58. o-Dichlorobenzene	0.6	0.6	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
59. p-Dichlorobenzene	0.075	0.075	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
60. 1,2-Dichloroethane	Zero	0.005	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
61. 1,1-Dichloroethylene	0.007	0.007	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
62. cis-1,2-Dichloroethylene	0.07	0.07	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
63. trans-1,2-Dichloroethylene	0.1	0.1	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
64. Dichloromethane	Zero	0.005	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

65. 1,2-Dichloropropane	Zero	0.005	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
66. Ethylbenzene	0.7	0.7	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
67. Styrene	0.1	0.1	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
68. Tetrachloroethylene	Zero	0.005	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
69. Toluene	1	1	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
70. 1,2,4-Trichlorobenzene	0.07	0.07	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
71. 1,1,1-Trichloroethane	0.2	0.2	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
72. 1,1,2-Trichloroethane	0.003	0.005	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

73. Trichloroethylene	Zero	0.005	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
74. Vinyl chloride	Zero	0.002	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
75. Xylenes (total)	10	10	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.
G. Radioactive Contaminants			
76. Beta/photon emitters	Zero	4 mrem/yr[15]	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
77. Alpha emitters	Zero	15 pCi/ℓ[~~16~~17]	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
78. Combined radium (226 & 228)	Zero	5 pCi/ℓ	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
79. Uranium	Zero	30 μg/ℓ	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

H. Disinfection Byproducts (DBPs), Byproduct Precursors, and Disinfectant Residuals: Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). USEPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAA5)[18]			
80. Total trihalomethanes (TTHMs)	N/A	0.080[19, 20]	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
81. Haloacetic Acids (HAA5)	N/A	0.060[21]	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
82. Bromate	Zero	0.010	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
83. Chlorite	0.08	1.0	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
84. Chlorine	4 (MRDLG)[22]	4.0 (MRDL)[23]	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

85. Chloramines	4 (MRDLG)	4.0 (MRDL)	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
85a. Chlorine dioxide, where any two consecutive daily samples taken at the entrance to the distribution system are above the MRDL	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. Add for public notification only: The chlorine dioxide violations reported today are the result of exceedences at the treatment facility only, not within the distribution system that delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.
86a. Chlorine dioxide, where one or more distribution system samples are above the MRDL	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.

			Add for public notification only: The chlorine dioxide violations reported today include exceedences of the USEPA standard within the distribution system that delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.
87. Control of DBP precursors (TOC)	None	TT	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
I. Other Treatment Techniques:			
88. Acrylamide	Zero	TT	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
89. Epichlorohydrin	Zero	TT	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

Appendix H--Endnotes

1. “MCLG” means maximum contaminant level goal.

2. “MCL” means maximum contaminant level.

3. For a water supplier analyzing at least 40 samples per month, no more than 5.0 percent of the monthly samples may be positive for total coliforms. For a supplier analyzing fewer than 40 samples per month, no more than one sample per month may be positive for total coliforms.

4. There are various regulations that set turbidity standards for different types of systems, including Section 611.320, the 1989 Surface Water Treatment Rule (SWTR), the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR), and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR). The MCL for the monthly turbidity average is 1 NTU; the MCL for the 2-day average is 5 NTU for a supplier that is required to filter but has not yet installed filtration (Section 611.320).

5. “NTU” means nephelometric turbidity unit.

6. There are various regulations that set turbidity standards for different types of systems, including Section 611.320, the 1989 SWTR, the 1998 IESWTR, and the 2002 LT1ESWTR. A supplier subject to the SWTR (both filtered and unfiltered) may not exceed 5 NTU. In addition, in filtered systems, 95 percent of samples each month must not exceed 0.5 NTU in systems using conventional or direct filtration and must not exceed 1 NTU in systems using slow sand or diatomaceous earth filtration or other filtration technologies approved by the Agency.

7. “TT” means treatment technique.

8. There are various regulations that set turbidity standards for different types of systems, including Section 611.320, the 1989 SWTR, the 1998 IESWTR, and the 2002 LT1ESWTR. For a supplier subject to the IESWTR (systems ~~serving~~ that serves at least 10,000 people, using surface water or groundwater under the direct influence of surface water), that use conventional filtration or direct filtration, the turbidity level of a system’s combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system’s combined filter effluent must not exceed 1 NTU at any time. A supplier subject to the IESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the Agency. For a supplier subject to the LT1ESWTR (a supplier that serves fewer than 10,000 people, using surface water or groundwater under the direct influence of surface water) that uses conventional filtration or direct filtration, after January 1, 2005, the turbidity level of the supplier’s combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of the supplier’s combined filter effluent must not exceed 1 NTU at any time. A supplier subject to the LT1ESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the Agency.

9. The bacteria detected by heterotrophic plate count (HPC) are not necessarily harmful. HPC is

simply an alternative method of determining disinfectant residual levels. The number of such bacteria is an indicator of whether there is enough disinfectant in the distribution system.

10. SWTR, IESWTR, and LT1ESWTR treatment technique violations that involve turbidity exceedences may use the health effects language for turbidity instead.

11. These arsenic values are effective January 23, 2006. Until then, the MCL is 0.05 mg/ℓ and there is no MCLG.

12. Millions of fibers per liter.

13. Action Level = 0.015 mg/ℓ.

14. Action Level = 1.3 mg/ℓ.

15. Millirems per year.

16. Picocuries per liter.

17. This endnote 17 corresponds with the endnote to the table in Appendix B to Subpart Q of 40 CFR 141 ~~(2003)~~ (2006), which stated a past effective date. This statement maintains structural consistency with the federal regulations.

18. A surface water system supplier or a groundwater system supplier under the direct influence of surface water is regulated under Subpart B of this Part. A Supbart B community water system supplier or a non-transient non-community system supplier ~~that serves 10,000 or more persons~~ must comply with Subpart I DBP MCLs and disinfectant maximum residual disinfectant levels (MRDLs). ~~All other community and non-transient non-community system suppliers must meet the MCLs and MRDLs beginning January 1, 2004.~~ A Subpart B transient non-community system ~~suppliers serving 10,000 or more persons and using~~ that uses chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL. ~~Subpart B transient non-community system suppliers serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.~~

19. ~~This endnote 19 corresponds with the endnote to the table in Appendix B to Subpart Q of 40 CFR 141 (2003), which expired by its own terms on January 1, 2004. This statement maintains structural consistency with the federal regulations.~~ Community and non-transient non-community systems must comply with Subpart Y TTHM and HAA5 MCLs of 0.080 mg/ℓ and 0.060 mg/ℓ, respectively (with compliance calculated as a locational running annual average) on the schedule in Section 611.970.

20. The MCL for total trihalomethanes is the sum of the concentrations of the individual trihalomethanes.

21. The MCL for haloacetic acids is the sum of the concentrations of the individual haloacetic

acids.

22. "MRDLG" means maximum residual disinfectant level goal.

23. "MRDL" means maximum residual disinfectant level.

BOARD NOTE: Derived from Appendix B to Subpart Q to 40 CFR 141 ~~(2003)~~ (2006), as amended at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.Appendix I Acronyms Used in Public Notification Regulation

CCR	Consumer Confidence Report
CWS	Community Water System
DBP	Disinfection Byproduct
GWR	Groundwater Rule
HPC	Heterotrophic Plate Count
IESWTR	Interim Enhanced Surface Water Treatment Rule
IOC	Inorganic Chemical
LCR	Lead and Copper Rule
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
NCWS	Non-Community Water System
NPDWR	National Primary Drinking Water Regulation
NTNCWS	Non-Transient Non-Community Water System
NTU	Nephelometric Turbidity Unit
OGWDW	USEPA, Office of Ground Water and Drinking Water
OW	USEPA, Office of Water
PN	Public Notification
PWS	Public Water System
SDWA	Safe Drinking Water Act
SMCL	Secondary Maximum Contaminant Level
SOC	Synthetic Organic Chemical
SWTR	Surface Water Treatment Rule
TCR	Total Coliform Rule
TT	Treatment Technique
TWS	Transient Non-Community Water System
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Chemical

BOARD NOTE: Derived from Appendix C to Subpart Q to 40 CFR 141~~, as added at 65 Fed. Reg. 26048 (May 4, 2000)~~ (2006), as amended at 71 Fed. Reg. 65574 (Nov. 8, 2006).

(Source: Amended at 31 Ill. Reg. _____, effective _____)

Section 611.Table H CT Values (mg·min/ℓ) for Cryptosporidium Inactivation by Chlorine Dioxide

	Water Temperature (°C)										
Log Credit	≤0.5	1	2	3	5	7	10	15	20	25	30
0.25	159	153	140	128	107	90	69	45	29	19	12
0.5	319	305	279	256	214	180	138	89	58	38	24
1.0	637	610	558	511	429	360	277	179	116	75	49
1.5	956	915	838	767	643	539	415	268	174	113	73
2.0	1275	1220	1117	1023	858	719	553	357	232	150	98
2.5	1594	1525	1396	1278	1072	899	691	447	289	188	122
3.0	1912	1830	1675	1534	1286	1079	830	536	347	226	147

A supplier may use the following equation to determine log credit between the indicated values:

$$\text{Log credit} = (0.001506 \times (1.09116)^{\text{Temp(in °C)}}) \times \text{CT}.$$

BOARD NOTE: Derived from the table at 40 CFR 141.720(b)(1) (2006), which corresponds with Section 611.1020(b)(1).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.Table I CT Values (mg·min/ℓ) for Cryptosporidium Inactivation by Ozone

	Water Temperature (°C)										
Log Credit	≤0.5	1	2	3	5	7	10	15	20	25	30
0.25	6.0	5.8	5.2	4.8	4.0	3.3	2.5	1.6	1.0	0.6	0.39
0.5	12	12	10	9.5	7.9	6.5	4.9	3.1	2.0	1.2	0.78
1.0	24	23	21	19	16	13	9.9	6.2	3.9	2.5	1.6
1.5	36	35	31	29	24	20	15	9.3	5.9	3.7	2.4
2.0	48	46	42	38	32	26	20	12	7.8	4.9	3.1
2.5	60	58	52	48	40	33	25	16	9.8	6.2	3.9
3.0	72	69	63	57	47	39	30	19	12	7.4	4.7

A supplier may use the following equation to determine log credit between the indicated values:

$$\text{Log credit} = (0.0397 \times (1.09757)^{\text{Temp(in °C)}}) \times \text{CT}.$$

BOARD NOTE: Derived from the table at 40 CFR 141.720(b)(2) (2006), which corresponds with Section 611.1020(b)(2).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.Table J UV Dose Table for Cryptosporidium, Giardia lamblia, and Virus Inactivation Credit

Log credit	UV dose (mJ/cm^2)		
	Cryptosporidium	Giardia lamblia	Virus
0.5	1.6	1.5	39
1.0	2.5	2.1	58
1.5	3.9	3.0	79
2.0	5.8	5.2	100
2.5	8.5	7.7	121
3.0	12	11	143
3.5	15	15	163
4.0	22	22	186

BOARD NOTE: Derived from the table at 40 CFR 141.720(d)(1) (2006), which corresponds with Section 611.1020(d)(1).

(Source: Added at 31 Ill. Reg. _____, effective _____)

Section 611.Table Z Federal Effective Dates

The following are the effective dates of the various federal NPDWRs:

Fluoride (40 CFR 141.60(b)(1)) October 2, 1987
(corresponding with Section 611.301(b))

Phase I VOCs (40 CFR 141.60(a)(1)) July 9, 1989
(corresponding with Section 611.311(a))
(benzene, carbon tetrachloride, p-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethylene, 1,1,1-trichloroethane, trichloroethylene, and vinyl chloride)

Lead and Copper (40 CFR, Subpart I) July 7, 1991
(corresponding with Subpart G of this Part)
(lead and copper monitoring, reporting, and recordkeeping requirements of 40 CFR 141.86 through 141.91)

Phase II IOCs (40 CFR 141.60(b)(2)) July 30, 1992
(corresponding with Section 611.301(b))
(asbestos, cadmium, chromium, mercury, nitrate, nitrite, and selenium)

Phase II VOCs (40 CFR 141.60(a)(2)) July 30, 1992
(corresponding with Section 611.311(a))
(o-dichlorobenzene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, 1,2-dichloropropane, ethylbenzene, monochlorobenzene, styrene, tetrachloroethylene, toluene, and xylenes (total))

Phase II SOCs (40 CFR 141.60(a)(2)) July 30, 1992
(corresponding with Section 611.311(c))
(alachlor, atrazine, carbofuran, chlordane, dibromochloropropane, ethylene dibromide, heptachlor, heptachlor epoxide, lindane, methoxychlor, polychlorinated biphenyls, toxaphene, 2,4-D, and 2,4,5-TP (silvex))

Lead and Copper (40 CFR, Subpart I) December 7, 1992
(corresponding with Subpart G of this Part)
(lead and copper corrosion control, water treatment, public education, and lead service line replacement requirements of 40 CFR 141.81 through 141.85)

Phase IIB IOC (40 CFR 141.60(b)(2)) January 1, 1993
(corresponding with Section 611.301(b))
(barium)

Phase IIB SOCs (40 CFR 141.60(a)(2)) January 1, 1993
(corresponding with Section 611.311(c))
(aldicarb, aldicarb sulfone, aldicarb sulfoxide, and pentachlorophenol. See the Board note appended to Section 611.311(c) for information relating to implementation of requirements relating to aldicarb, aldicarb sulfone, and aldicarb sulfoxide.)

Phase V IOCs (40 CFR 141.60(b)(3)) January 17, 1994
(corresponding with Section 611.301(b))
(antimony, beryllium, cyanide, nickel, and thallium)

Phase V VOCs (40 CFR 141.60(a)(3)) January 17, 1994
(corresponding with Section 611.311(a))
(dichloromethane, 1,2,4-trichlorobenzene, and 1,1,2-trichloroethane)

Phase V SOCs (40 CFR 141.60(a)(3)) January 17, 1994
(corresponding with Section 611.311(c))
(benzo(a)pyrene, dalapon, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate dinoseb, diquat, endothall, endrin, glyphosate, hexachlorobenzene, hexachlorocyclopentadiene, oxamyl, picloram, simazine, and 2,3,7,8-TCDD)

Consumer Confidence Report Rule (40 CFR 141, Subpart Q) September 18, 1998
(corresponding with Subpart O)
(notification to public of drinking water quality)

Interim Enhanced Surface Water Treatment Rule (40 CFR 141, Subpart P)
February 16, 1999
(corresponding with Subpart R of this Part)
(applicable to suppliers providing water to fewer than 10,000 persons)
(Giardia lamblia, viruses, heterotrophic plate count bacteria, Legionella,

Cryptosporidium, and turbidity)

Public Notification Rule (40 CFR 141, Subpart Q) June 5, 2000
(corresponding with Subpart V of this Part)
(notification to public of NPDWR violations, variances or exemptions, or other situations that could bear on public health)

Filter Backwash Rule (40 CFR 141.76) August 7, 2001
(corresponding with Section 611.276)
(reuse of spent filter backwash water, thickener supernatant, or liquids from dewatering processes)

Disinfection/Disinfectant Byproducts Rule (40 CFR 141.64, 141.65 & 141, Subpart L)
Smaller Systems (serving 10,000 or fewer persons) December 16, 2001
Larger Systems (serving more than 10,000 persons) December 16, 2003
(corresponding with Sections 611.312 & 611.313)
(total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramines, and chlorine dioxide)

Long Term 1 Enhanced Surface Water Treatment Rule (40 CFR 141, Subpart T)
February 13, 2002
(corresponding with Subpart X of this Part)
(applicable to suppliers providing water to 10,000 or more persons)
(Giardia lamblia, viruses, heterotrophic plate count bacteria, Legionella, Cryptosporidium, and turbidity)

Radionuclides (40 CFR 141.66) December 8, 2003
(corresponding with Section 611.330)
(combined radium (Ra-226 + Ra-228), gross alpha particle activity, beta particle and photon activity, and uranium)

Arsenic (40 CFR 141.62(b)(16)) January 23, 2006
(corresponding with Section 611.301(b))
(arsenic)

Stage 2 Disinfection/Disinfectant Byproducts Rule (40 CFR 141, Subparts U & V)
Systems that serve fewer than 10,000 persons)
Submit plan April 1, 2008
Complete monitoring or study March 31, 2010
Submit IDSE report July 1, 2010
Compliance with monitoring requirements
If no Cryptosporidium monitoring is required October 1, 2013
If Cryptosporidium monitoring is required October 1, 2014
Systems that serve 10,000 to 49,999 persons)
Submit plan October 1, 2007
Complete monitoring or study September 30, 2009

Submit IDSE report January 1, 2010
Compliance with monitoring requirements October 1, 2013
Systems that serve 50,000 to 99,999 persons)
Submit plan April 1, 2007
Complete monitoring or study March 31, 2009
Submit IDSE report July 1, 2009
Compliance with monitoring requirements October 1, 2012
Systems that serve 100,000 or more persons)
Submit plan October 1, 2006
Complete monitoring or study September 30, 2008
Submit IDSE report January 1, 2009
Compliance with monitoring requirements April 1, 2012
(corresponding with Subparts W & Y of this Part)
(total trihalomethanes and haloacetic acids (five))

Long Term 2 Enhanced Surface Water Treatment Rule (40 CFR 141, Subpart W)
Systems that serve fewer than 10,000 persons)
And which monitor for E. coli
Begin first round of monitoring October 1, 2008
Begin treatment for Cryptosporidium October 1, 2014
Begin second round of monitoring October 1, 2017
And which monitor for cryptosporidium
Begin first round of monitoring April 1, 2010
Begin treatment for Cryptosporidium October 1, 2014
Begin second round of monitoring April 1, 2019
Systems that serve 10,000 to 49,999 persons)
Begin first round of monitoring April 1, 2008
Begin treatment for Cryptosporidium October 1, 2013
Begin second round of monitoring October 1, 2016
Systems that serve 50,000 to 99,999 persons)
Begin first round of monitoring April 1, 2007
Begin treatment for Cryptosporidium October 1, 2012
Begin second round of monitoring October 1, 2015
Systems that serve 100,000 or more persons)
Begin first round of monitoring October 1, 2006
Begin treatment for Cryptosporidium April 1, 2012
Begin second round of monitoring April 1, 2015
(corresponding with Subpart Z of this Part)
(E. coli, Cryptosporidium, Giardia lamblia, viruses, and turbidity)

Groundwater Rule (40 CFR 141, Subpart S) December 1, 2009
(corresponding with Subpart S of this Part)
(E. coli, enterococci, and coliphage)

(Source: Amended at 31 Ill. Reg. _____, effective _____)

IT IS SO ORDERED.

I, John T. Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above order on May 3, 2007, by a vote of 4-0.

John T. Therriault, Assistant Clerk
Illinois Pollution Control Board