ILLINOIS POLLUTION CONTROL BOARD
December 18, 2008

IN THE MATTER OF:)
SDWA UPDATE, USEPA AMENDMENTS) R08-7
(January 1, 2007 though June 30, 2007 and) (Identical-in-Substance
June 3, 2008)) Rulemaking - Public Water Supply)
)
SDWA UPDATE, USEPA AMENDMENTS) R08-13
(July 1, 2007 though December 31, 2007)) (Identical-in-Substance
) Rulemaking - Public Water Supply)
) (Consolidated)

Adopted Rule. Final Order.

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

SUMMARY OF THIS ACTION

The Board today adopts amendments to the Illinois regulations that are "identical in substance" to drinking water regulations adopted by the United States Environmental Protection Agency (USEPA). The amendments involved in this consolidated docket incorporate into the Illinois drinking water regulations amendments in response to two USEPA actions. Those actions span the two identical-in-substance update periods of January 1, 2007 through June 30, 2007 and July 1, 2007 through December 31, 2007. The Board has added a third set of USEPA amendments that occurred later than these periods. The added later amendments are closely related to amendments that occurred during the January 1, 2007 through June 30, 2007 time period.

The R08-7 docket includes federal Safe Drinking Water Act (SDWA) amendments that USEPA adopted in the period January 1, 2007 though June 30, 2007, and on June 3, 2008. On March 12, 2007, USEPA adopted amendments relating to analytical methods approved under the wastewater pretreatment and drinking water programs. On June 3, 2008, USEPA approved alternative methods for analysis under the drinking water program.

The R08-13 docket includes federal SDWA amendments that USEPA adopted in the period July 1, 2007 though December 31, 2007. On October 10, 2007, USEPA revised segments of the Lead and Copper Rule under the drinking water regulations.

Sections 7.2 and 17.5 of the Act (415 ILCS 5/7.2 and 17.5 (2006)) 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 (42 U.S.C. §§ 300g-1(a), 300g-3(c), 300g-6(a), and 300j-4(a) (2006)). The USEPA National Primary Drinking Water Regulations (NPDWRs) implement Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the federal SDWA (42 U.S.C. §§ 300g-1(a), 300g-3(c), 300g-6(a), and 300j-4(a) (2006)). The federal SDWA regulations are found at 40 C.F.R. 141 through 143.

Section 17.5 also provides that Title VII of the Act and Section 5 of the APA (5 ILCS 100/5-35 and 5-40 (2006)) do not apply to the Board's adoption of identical-in-substance regulations.

This opinion supports an order that the Board also adopts today. The rules will be adopted and filed no later than December 31, 2008, pursuant to the extension of the deadline adopted by the Board in this opinion and order pursuant to Section 7.2(b) of the Act (415 ILCS 5/7.2(b) (2006)).

The Clerk is directed to cause the filing of the following adopted amendments with the Office of the Secretary of State:

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

PART 611
PRIMARY DRINKING WATER STANDARDS

SUBPART A: GENERAL

SUBPART B: FILTRATION AND DISINFECTION

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

Section

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

Section

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART M: TURBIDITY MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

Section

SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

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

SUBPART S: GROUNDWATER RULE

SUBPART T: REPORTING AND RECORDKEEPING

SUBPART U: CONSUMER CONFIDENCE REPORTS

Section

SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

Section

SUBPART W: INITIAL DISTRIBUTION SYSTEM EVALUATIONS

Section

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

Section

SUBPART ~~Y STAGE~~ Y: STAGE 2 DISINFECTION BYPRODUCTS REQUIREMENTS

Section

SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM

Section

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. 31 Ill. Reg. 11757, effective July 27, 2007; amended in R08-5/R08-7/R08-13 at 33 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.

"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) ~~(2006)~~ (2007). 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.

"Bin classification" or "bin" means, for the purposes of Subpart Z of this Part, the appropriate of the four treatment categories (Bin 1, Bin 2, Bin 3, or Bin 4) that is assigned to a filtered system supplier pursuant to Section 611.1010 based on the results of the source water Cryptosporidium monitoring described in the previous section. This bin classification determines the degree of additional Cryptosporidium treatment, if any, the filtered PWS must provide.
BOARD NOTE: Derived from 40 CFR 141.710 and the preamble discussion at 71 Fed. Reg. 654, 657 (Jan. 5, 2006).

"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 ~~(2006)~~ (2007).

"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.

“40/30 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 system exceeded 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)~~ (2007).

“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 Section 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)~~ (2007).

“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.

“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 CFR 141.400(c)(5)~~, as added at 71 Fed. Reg. 65574 (Nov. 8, 2006)~~ (2007).

“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~~ (2006)~~ (2007).

“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-ethylhexyl)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~~ I of this Part.
BOARD NOTE: Derived from 40 CFR~~ 611.601(c) (2006)~~ 141.601(c) (2007).

“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)~~ (2006)~~ (2007).

“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) ~~(2006)~~ (2007).

"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 ~~(2006)~~ (2007).

"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 ~~(2006)~~ (2007). 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) ~~(2006)~~ (2007).

"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 delineated WHPAs (identifying sources of contamination within the WHPAs and evaluations or the hydrogeologic sensitivity of the delineated WHPAs conducted under source water assessments or utilizing other relevant information where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system (PWS) to evaluate the adequacy of the system, its sources, and operations for the production and distribution of 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)~~ (2007).

"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)~~ (2007). 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, polychlorinated 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 ~~(2006)~~ (2007) 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)~~ (2007)).

"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)~~ (2007).

"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 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 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 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 ~~(2006)~~ (2007).

"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)~~ (2007).

"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 that have at least 15 service connections or which regularly serve 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.

"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)~~ (2007).

"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 area" or "WHPA" means the surface and subsurface recharge area surrounding a community water supply well or well field, delineated outside of any applicable setback zones (pursuant to Section ~~17.2~~ 17.1 of the Act ~~(~~[415 ILCS ~~5/17.2~~ 5/17.1~~)~~]) pursuant to Illinois' Wellhead Protection Program, through which contaminants are reasonably likely to move toward such well or well field.
BOARD NOTE: The Agency uses two guidance documents for identification of WHPAs:

> "Guidance Document for Groundwater Protection Needs Assessments," Illinois Environmental Protection Agency, Illinois State Water Survey, and Illinois State Geologic Survey joint report, January 1995; and
>
> "The Illinois Wellhead Protection Program Pursuant to Section 1428 of the Federal Safe Drinking Water Act," Illinois Environmental Protection Agency, No. 22480, October 1992.

"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) ~~(2006)~~ (2007). 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 ~~(2006)~~ (2007).

(Source: Amended at 33 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.

“Georgia Radium Method” means “The Determination of Radium-226 and Radium-228 in Drinking Water by Gamma-ray Spectrometry Using HPGE or Ge(Li) Detectors,” Revision 1.2, December 2004, available from the Georgia Tech Research Institute.

“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.

“ITS Method D99-003” means Method D99-003, Revision 3.0, “Free Chlorine Species (HOCl$^-$ and OCl$^-$) by Test Strip,” available from Industrial Test Systems, Inc.

“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, 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.

"OI Analytical Method OIA-1677" means "Method OIA-1677, DW Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry," available from ALPKEM, Division of OI Analytical.

"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.

"Standard Methods Online" means the website maintained by the Standard Methods Organization (at www.standardmethods.org) for purchase of the latest versions of methods in an electronic format.

"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.

"Technical Notes on Drinking Water Methods" means the USEPA document by that title, October 1994, USEPA document number EPA 600/R-94/173, available from NTIS.

"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 (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" means "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 USEPA, Office of Ground Water and Drinking Water.~~

~~"USEPA Method 1622 (01)" means "Method 1622: Cryptosporidium in Water by Filtration/IMS/FA," April 2001, available from USEPA, Office of Ground Water and Drinking Water.~~

~~"USEPA Method 1622 (99)" means "Method 1622: Cryptosporidium in Water by Filtration/IMS/FA," January 1999, available from USEPA, Office of Ground Water and Drinking Water.~~

~~"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.~~

~~"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.~~

~~"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.~~

"USEPA NERL Method 200.5 (rev. 4.2)" means Method 200.5, Revision 4.2, "Determination of Trace Elements in Drinking Water by Axially Viewed Inductively Coupled Plasma—Atomic Emission Spectrometry," October 2003, EPA 600/R-06/115. Available from the USEPA, Office of Research and Development.

"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 OGWDW Methods" means one of the methods listed as available from the USEPA, Office of Ground Water and Drinking Water (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), 1622 (99), 1622 (01), 1622 (05), 1623 (99), 1623 (01), and 1623 (05)).

"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; "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; ~~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, 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 Radioactivity Methods" means "Prescribed Procedures for Measurement of Radioactivity in Drinking Water," 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, 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:

ALPKEM, Division of OI Analytical, P.O. Box 9010, College Station, TX 77842-9010, telephone: 979-690-1711, Internet: www.oico.com.

"Method OIA-1677 DW, Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry," EPA 821/R-04/001, January 2004 (referred to as "OI Analytical Method OIA-1677"), referenced in Section 611.611.
BOARD NOTE: Also available online for download from www.epa.gov/waterscience/methods/method/cyanide/1677-2004.pdf.

APHA. American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005 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 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.

Method 9223 B, Chromogenic Substrate Coliform Test (Proposed), referenced in Section 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 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-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, 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 (also referred to as the variations “Autoanalysis Colilert System” and “Colisure Test”), referenced in Sections 611.526, and 611.531.

Method 9223 B, Chromogenic Substrate Coliform Test (Proposed), referenced in Section 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~~ Sections 611.611 and 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~~ 7120, 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~~ Radioactive 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 (also referred to as the variations “Autoanalysis Colilert System” and “Colisure Test”), referenced in Sections 611.526, 611.531.

Method 9223 B, Chromogenic Substrate Coliform Test (also referred to as the variations “Autoanalysis Colilert System” and “Colisure Test”), referenced in Sections 611.802 and 611.1004.

Method 9230 B, Fecal Streptococcus and Enterococcus Groups, Multiple Tube Techniques, referenced in Section 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 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 B, Calcium, EDTA Titrimetric Method, referenced in Section 611.611.

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

Method 3500-Mg B, 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 Section 611.381.

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

40 CFR 3.2 ~~(2006)~~ (2007) (How Does This Part Provide for Electronic Reporting?), referenced in Section 611.105.

40 CFR 3.3 ~~(2006)~~ (2007) (What Definitions Are Applicable to This Part?), referenced in Section 611.105.

40 CFR 3.10 ~~(2006)~~ (2007) (What Are the Requirements for Electronic Reporting to EPA?), referenced in Section 611.105.

40 CFR 3.2000 ~~(2006)~~ (2007) (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)~~ (2007), referenced in Section 611.1004.

Appendix B to 40 CFR 136 ~~(2006)~~ (2007), referenced in Sections 611.359, 611.609, and 611.646.

d) This Part incorporates no later amendments or editions.

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

SUBPART G: LEAD AND COPPER

Section 611.350 General Requirements

a) Applicability and Scope

1) Applicability. The requirements of this Subpart G constitute national primary drinking water regulations for lead and copper. This Subpart G applies to all community water systems (CWSs) and non-transient, non-community water systems (NTNCWSs).

2) Scope. This Subpart G establishes a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. These requirements are triggered, in some cases, by lead and copper action levels measured in samples collected at consumers' taps.

b) Definitions. For the purposes of only this Subpart G, the following terms have the following meanings:

"Action level" means that concentration of lead or copper in water computed pursuant to subsection (c) of this Section that determines, in some cases, the treatment requirements of this Subpart G that a supplier must complete. The action level for lead is 0.015 mg/ℓ. The action level for copper is 1.3 mg/ℓ.

"Corrosion inhibitor" means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

"Effective corrosion inhibitor residual" means a concentration of inhibitor in the drinking water sufficient to form a passivating film on the interior walls of a pipe.

"Exceed," as this term is applied to either the lead or the copper action level, means that the 90th percentile level of the supplier's samples collected during a six-month monitoring period is greater than the action level for that contaminant.

"First draw sample" means a one-liter sample of tap water, collected in accordance with Section 611.356(b)(2), that has been standing in plumbing pipes for at least six hours and which is collected without flushing the tap.

"Large system" means a water system that regularly serves water to more than 50,000 persons.

"Lead service line" means a service line made of lead that connects the water main to the building inlet, including any lead pigtail, gooseneck, or other fitting that is connected to such lead line.

"Maximum permissible concentration" or "MPC" means that concentration of lead or copper for finished water entering the supplier's distribution system, designated by the Agency by a SEP pursuant to Sections 611.110 and 611.353(b) that reflects the contaminant removal capability of the treatment properly operated and maintained.
BOARD NOTE: Derived from 40 CFR 141.83(b)(4) ~~(2002)~~ (2007). (See Section 611.353(b)(4)(B).)

"Medium-sized system" means a water system that regularly serves water to more than 3,300 up to 50,000 or fewer persons.

"Meet," as this term is applied to either the lead or the copper action level, means that the 90th percentile level of the supplier's samples collected during a six-month monitoring period is less than or equal to the action level for that contaminant.

"Method detection limit" or "MDL" is as defined at Section 611.646(a). The MDL for lead is 0.001 mg/ℓ. The MDL for copper is 0.001 mg/ℓ, or 0.020 mg/ℓ by atomic absorption direct aspiration method.
BOARD NOTE: Derived from 40 CFR 141.89(a)(1)(iii) ~~(2002)~~ (2007).

"Monitoring period" means any of the six-month periods of time during which a supplier must complete a cycle of monitoring under this Subpart G.
BOARD NOTE: USEPA refers to these as "monitoring periods." The Board uses "six-month monitoring period" to avoid confusion with "compliance period," as used elsewhere in this Part and defined at Section 611.101.

"Multiple-family residence" means a building that is currently used as a multiple-family residence, but not one that is also a "single-family structure."

"90th percentile level" means that concentration of lead or copper contaminant exceeded by ten percent or fewer of all samples collected during a six-month monitoring period pursuant to Section 611.356 (i.e., that concentration of contaminant greater than or equal to the results obtained from 90 percent of the samples). The 90th percentile levels for copper and lead must be determined pursuant to subsection (c)(3) of this Section.
BOARD NOTE: Derived from 40 CFR 141.80(c) ~~(2002)~~ (2007).

"Optimal corrosion control treatment" means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while ensuring that the treatment does not cause the water system to violate any national primary drinking water regulations.

"Practical quantitation limit" or "PQL" means the lowest concentration of a contaminant that a well-operated laboratory can reliably achieve within specified limits of precision and accuracy during routine laboratory operating conditions. The PQL for lead is 0.005 mg/ℓ. The PQL for copper is 0.050 mg/ℓ.
BOARD NOTE: Derived from 40 CFR 141.89(a)(1)(ii) and (a)(1)(iv) ~~(2002)~~ (2007).

"Service line sample" means a one-liter sample of water, collected in accordance with Section 611.356(b)(3), that has been standing for at least six hours in a service line.

"Single-family structure" means a building that was constructed as a single-family residence and which is currently used as either a residence or a place of business.

"Small system" means a water system that regularly serves water to 3,300 or fewer persons.
BOARD NOTE: Derived from 40 CFR 141.2 ~~(2002)~~ (2007).

c) Lead and Copper Action Levels.

1) The lead action level is exceeded if the 90th percentile lead level is greater than 0.015 mg/ℓ.

2) The copper action level is exceeded if the 90th percentile copper level is greater than 1.3 mg/ℓ.

3) Suppliers must compute the 90th percentile lead and copper levels as follows:

A) List the results of all lead or copper samples taken during a six-month monitoring period in ascending order, ranging from the sample with the lowest concentration first to the sample with the highest concentration last. Assign each sampling result a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level must be equal to the total number of samples taken.

B) Determine the number for the 90th percentile sample by multiplying the total number of samples taken during the six-month monitoring period by 0.9.

C) The contaminant concentration in the sample with the number yielded by the calculation in subsection (c)(3)(B) of this Section is the 90th percentile contaminant level.

D) For suppliers that collect five samples per six-month monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

E) For a supplier that has been allowed by the Agency to collect fewer than five samples in accordance with Section 611.356(c), the sample result with the highest concentration is considered the 90th percentile value.

d) Corrosion Control Treatment Requirements.

1) All suppliers must install and operate optimal corrosion control treatment.

2) Any supplier that complies with the applicable corrosion control treatment requirements specified by the Agency pursuant to Sections 611.351 and 611.352 is deemed in compliance with the treatment requirement of subsection (d)(1) of this Section.

e) Source water treatment requirements. Any supplier whose system exceeds the lead or copper action level must implement all applicable source water treatment requirements specified by the Agency pursuant to Section 611.353.

f) Lead service line replacement requirements. Any supplier whose system exceeds the lead action level after implementation of applicable corrosion control and source water treatment requirements must complete the lead service line replacement requirements contained in Section 611.354.

g) Public education requirements. Pursuant to Section 611.355, the supplier must provide a consumer notice of the lead tap water monitoring results to the persons served at each site (tap) that is tested. Any supplier whose system exceeds the lead action level must implement the public education requirements ~~contained in Section 611.355~~.

h) Monitoring and analytical requirements. Suppliers must complete all tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results under this Subpart G in compliance with Sections 611.356, 611.357, 611.358, and 611.359.

i) Reporting requirements. Suppliers must report to the Agency any information required by the treatment provisions of this Subpart G and Section 611.360.

j) Recordkeeping requirements. Suppliers must maintain records in accordance with Section 611.361.

k) Violation of national primary drinking water regulations. Failure to comply with the applicable requirements of this Subpart G, including conditions imposed by the Agency by SEP pursuant to these provisions and Section 611.110, will constitute a violation of the national primary drinking water regulations for lead or copper.

BOARD NOTE: Derived from 40 CFR 141.80 ~~(2002)~~ (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.351 Applicability of Corrosion Control

a) Corrosion control required. Suppliers must complete the applicable corrosion control treatment requirements described in Section 611.352 on or before the deadlines set forth in this Section.

1) Large systems. Each large system supplier (one regularly serving more than 50,000 persons) must complete the corrosion control treatment steps specified in subsection (d) of this Section, unless it is deemed to have optimized corrosion control under subsection (b)(2) or (b)(3) of this Section.

2) Medium-sized and small systems. Each small system supplier (one regularly serving 3,300 or fewer persons) and each medium-sized system (one regularly serving more than 3,300 up to 50,000 persons) must complete the corrosion control treatment steps specified in subsection (e) of this Section, unless it is deemed to have optimized corrosion control under one of subsections (b)(1), (b)(2), or (b)(3) of this Section.

b) Suppliers deemed to have optimized corrosion control. A supplier is deemed to have optimized corrosion control, and is not required to complete the applicable corrosion control treatment steps identified in this Section, if the supplier satisfies one of the criteria specified in subsections (b)(1) through (b)(3) of this Section. Any such system deemed to have optimized corrosion control under this subsection, and which has treatment in place, must continue to operate and maintain optimal corrosion control treatment and meet any requirements that the Agency determines are appropriate to ensure optimal corrosion control treatment is maintained.

1) Small- or medium-sized system meeting action levels. A small system or medium-sized system supplier is deemed to have optimized corrosion control if the system meets the lead and copper action levels during each of two consecutive six-month monitoring periods with monitoring conducted in accordance with Section 611.356.

2) SEP for equivalent activities to corrosion control. The Agency must, by a SEP granted pursuant to Section 611.110, deem any supplier to have optimized corrosion control treatment if it determines that the supplier has conducted activities equivalent to the corrosion control steps applicable under this Section. In making this determination, the Agency must specify the water quality control parameters representing optimal corrosion control in accordance with Section 611.352(f). A water supplier that is deemed to have optimized corrosion control under this subsection (b)(2) must operate in compliance with the Agency-designated optimal water quality control parameters in accordance with Section 611.352(g) and must continue to conduct lead and copper tap and water quality parameter sampling in accordance with Sections 611.356(d)(3) and 611.357(d), respectively. A supplier must provide the Agency with the following information in order to support an Agency SEP determination under this subsection (b)(2):

A) The results of all test samples collected for each of the water quality parameters in Section 611.352(c)(3);

B) A report explaining the test methods the supplier used to evaluate the corrosion control treatments listed in Section 611.352(c)(1), the results of all tests conducted, and the basis for the supplier's selection of optimal corrosion control treatment;

C) A report explaining how the supplier has installed corrosion control and how the supplier maintains it to insure minimal lead and copper concentrations at consumer's taps; and

D) The results of tap water samples collected in accordance with

Section 611.356 at least once every six months for one year after corrosion control has been installed.

3) Results less than practical quantitation level (PQL) for lead. Any supplier is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with Section 611.356 and source water monitoring conducted in accordance with Section 611.358 that demonstrate that for two consecutive six-month monitoring periods the difference between the 90th percentile tap water lead level, computed pursuant to Section 611.350(c)(3), and the highest source water lead concentration is less than the practical quantitation level for lead specified in Section 611.359(a)(1)(B)(i).

A) Those systems whose highest source water lead level is below the method detection limit (MDL) may also be deemed to have optimized corrosion control under this subsection (b) if the 90th percentile tap water lead level is less than or equal to the PQL for lead for two consecutive six-month monitoring periods.

B) Any water system deemed to have optimized corrosion control in accordance with this subsection (b) must continue monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in Section 611.356(c) and collecting the samples at times and locations specified in Section 611.356(d)(4)(D). Any such system that has not conducted a round of monitoring pursuant to Section 611.356(d) since September 30, 1997, must have completed a round of monitoring pursuant to this subsection (b) no later than September 30, 2000.

C) Any water system deemed to have optimized corrosion control pursuant to this subsection (b) must notify the Agency in writing pursuant to Section 611.360(a)(3) of any upcoming long-term change in treatment or the addition of a new source, as described in that Section. The Agency must ~~require any such system to conduct additional monitoring or to take other action if the Agency determines that the additional monitoring is necessary and appropriate to ensure that the supplier maintains minimal levels of corrosion in its distribution system~~ review and approve the addition of a new source or any long-term change in water treatment before the addition or long-term change is implemented by the water system.

D) ~~As of July 12, 2001, a~~ A supplier is not deemed to have optimized corrosion control under this subsection (b), and must implement corrosion control treatment pursuant to subsection (b)(3)(E) of this

Section, unless it meets the copper action level.

E) Any supplier triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this subsection must implement corrosion control treatment in accordance with the deadlines in subsection (e) of this Section. Any such large system supplier must adhere to the schedule specified in that subsection (e) for a medium-sized system supplier, with the time periods for completing each step being triggered by the date the supplier is no longer deemed to have optimized corrosion control under this subsection (b).

c) Suppliers not required to complete corrosion control steps for having met both action levels.

1) Any small system or medium-sized system supplier, otherwise required to complete the corrosion control steps due to its exceedence of the lead or copper action level, may cease completing the treatment steps after the supplier has fulfilled both of the following conditions:

A) It has met both the copper action level and the lead action level during each of two consecutive six-month monitoring periods conducted pursuant to Section 611.356; and

B) The supplier has submitted the results for those two consecutive six-month monitoring periods to the Agency.

2) A supplier that has ceased completing the corrosion control steps pursuant to subsection (c)(1) of this Section (or the Agency, if appropriate) must resume completion of the applicable treatment steps, beginning with the first treatment step that the supplier previously did not complete in its entirety, if the supplier thereafter exceeds the lead or copper action level during any monitoring period.

3) The Agency may, by SEP, require a supplier to repeat treatment steps previously completed by the supplier where it determines that this is necessary to properly implement the treatment requirements of this Section. Any such SEP must explain the basis for this decision.

4) The requirement for any small- or medium-sized system supplier to implement corrosion control treatment steps in accordance with subsection (e) of this Section (including systems deemed to have optimized corrosion control under subsection (b)(1) of this Section) is triggered whenever any small- or medium-sized system supplier exceeds the lead or copper action level.

d) Treatment steps and deadlines for large systems. Except as provided in subsections (b)(2) and (b)(3) of this Section, large system suppliers must complete the following corrosion control treatment steps (described in the referenced portions of Sections 611.352, 611.356, and 611.357) on or before the indicated dates.

1) Step 1: The supplier must have conducted initial monitoring (Sections 611.356(d)(1) and 611.357(b)) during two consecutive six-month monitoring periods on or before January 1, 1993.

2) Step 2: The supplier must have completed corrosion control studies (Section 611.352(c)) on or before July 1, 1994.

3) Step 3: The Agency must have approved optimal corrosion control treatment (Section 611.352(d)) by a SEP issued pursuant to Section 611.110 on or before January 1, 1995.

4) Step 4: The supplier must have installed optimal corrosion control treatment (Section 611.352(e)) by January 1, 1997.

5) Step 5: The supplier must have completed follow-up sampling (Sections 611.356(d)(2) and 611.357(c)) by January 1, 1998.

6) Step 6: The Agency must have reviewed installation of treatment and approve optimal water quality control parameters (Section 611.352(f)) by July 1, 1998.

7) Step 7: The supplier must operate in compliance with the Agency-specified optimal water quality control parameters (Section 611.352(g)) and continue to conduct tap sampling (Sections 611.356(d)(3) and 611.357(d)).

e) Treatment steps and deadlines for small- and medium-sized system suppliers. Except as provided in subsection (b) of this Section, small- and medium-sized system suppliers must complete the following corrosion control treatment steps (described in the referenced portions of Sections 611.352, 611.356, and 611.357) by the indicated time periods.

1) Step 1: The supplier must conduct initial tap sampling (Sections 611.356(d)(1) and 611.357(b)) until the supplier either exceeds the lead action level or the copper action level or it becomes eligible for reduced monitoring under Section 611.356(d)(4). A supplier exceeding the lead action level or the copper action level must recommend optimal corrosion control treatment (Section 611.352(a)) within six months after the end of the monitoring period during which it exceeds one of the action levels.

2) Step 2: Within 12 months after the end of the monitoring period during which a supplier exceeds the lead action level or the copper action level, the Agency may require the supplier to perform corrosion control studies (Section 611.352(b)). If the Agency does not require the supplier to perform such studies, the Agency must, by a SEP issued pursuant to Section 611.110, specify optimal corrosion control treatment (Section 611.352(d)) within the appropriate of the following timeframes:

A) ~~for~~ For medium-sized systems, within 18 months after the end of the monitoring period during which such supplier exceeds the lead action level or the copper action level~~,~~; or

B) ~~for~~ For small systems, within 24 months after the end of the monitoring period during which such supplier exceeds the lead action level or the copper action level.

3) Step 3: If the Agency requires a supplier to perform corrosion control studies under step 2 (subsection (e)(2) of this Section), the supplier must complete the studies (Section 611.352(c)) within 18 months after the Agency requires that such studies be conducted.

4) Step 4: If the supplier has performed corrosion control studies under step 2 (subsection (e)(2) of this Section), the Agency must, by a SEP issued pursuant to Section 611.110, approve optimal corrosion control treatment (Section 611.352(d)) within six months after completion of step 3 (subsection (e)(3) of this Section).

5) Step 5: The supplier must install optimal corrosion control treatment (Section 611.352(e)) within 24 months after the Agency approves such treatment.

6) Step 6: The supplier must complete follow-up sampling (Sections 611.356(d)(2) and 611.357(c)) within 36 months after the Agency approves optimal corrosion control treatment.

7) Step 7: The Agency must review the supplier's installation of treatment and, by a SEP issued pursuant to Section 611.110, approve optimal water quality control parameters (Section 611.352(f)) within six months after completion of step 6 (subsection (e)(6) of this Section).

8) Step 8: The supplier must operate in compliance with the Agency-approved optimal water quality control parameters (Section 611.352(g)) and continue to conduct tap sampling (Sections 611.356(d)(3) and 611.357(d)).

BOARD NOTE: Derived from 40 CFR 141.81 ~~(2003)~~ (2007), as amended at 57782 (October

10, 2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.353 Source Water Treatment

Suppliers must complete the applicable source water monitoring and treatment requirements (described in the referenced portions of subsection (b) of this Section, and in Sections 611.356 and 611.358) by the following deadlines.

a) Deadlines for completing source water treatment steps.

1) Step 1: A supplier exceeding the lead action level or the copper action level must complete lead and copper and source water monitoring (Section 611.358(b)) and make a treatment recommendation to the Agency (subsection (b)(1) of this Section) within ~~six months~~ 180 days after ~~exceeding~~ the end of the monitoring period during which the supplier exceeded the pertinent action level.

2) Step 2: The Agency must, by a SEP issued pursuant to Section 611.110, make a determination regarding source water treatment (subsection (b)(2) of this Section) within six months after submission of monitoring results under step 1.

3) Step 3: If the Agency requires installation of source water treatment, the supplier must install that treatment (subsection (b)(3) of this Section) within 24 months after completion of step 2.

4) Step 4: The supplier must complete follow-up tap water monitoring (Section 611.356(d)(2)) and source water monitoring (Section 611.358(c)) within 36 months after completion of step 2.

5) Step 5: The Agency must, by a SEP issued pursuant to Section 611.110, review the supplier's installation and operation of source water treatment and specify MPCs for lead and copper (subsection (b)(4) of this Section) within six months after completion of step 4.

6) Step 6: The supplier must operate in compliance with the Agency-specified lead and copper MPCs (subsection (b)(4) of this Section) and continue source water monitoring (Section 611.358(d)).

b) Description of Source Water Treatment Requirements.

1) System treatment recommendation. Any supplier that exceeds the lead action level or the copper action level must recommend in writing to the Agency the installation and operation of one of the source water

treatments listed in subsection (b)(2) of this Section. A supplier may recommend that no treatment be installed based on a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.

2) Agency determination regarding source water treatment.

  A) The Agency must complete an evaluation of the results of all source water samples submitted by the supplier to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps.

  B) If the Agency determines that treatment is needed, the Agency must, by a SEP issued pursuant to Section 611.110, either require installation and operation of the source water treatment recommended by the supplier (if any) or require the installation and operation of another source water treatment from among the following:

    i) ion exchange;

    ii) reverse osmosis;

    iii) lime softening; or

    iv) coagulation/filtration.

  C) The Agency may request and the supplier must submit such additional information, on or before a certain date, as the Agency determines is necessary to aid in its review.

  D) The Agency must notify the supplier in writing of its determination and set forth the basis for its decision.

3) Installation of source water treatment. Each supplier must properly install and operate the source water treatment approved by the Agency under subsection (b)(2) of this Section.

4) Agency review of source water treatment and specification of maximum permissible source water levels (MPCs).

  A) The Agency must review the source water samples taken by the supplier both before and after the supplier installs source water treatment, and determine whether the supplier has properly installed and operated the approved source water treatment.

- B) Based on its review, the Agency must, by a SEP issued pursuant to Section 611.110, approve the lead and copper MPCs for finished water entering the supplier's distribution system. Such levels must reflect the contaminant removal capability of the treatment properly operated and maintained.

- C) The Agency must explain the basis for its decision under subsection (b)(4)(B) of this Section.

5) Continued operation and maintenance. Each supplier must maintain lead and copper levels below the MPCs approved by the Agency at each sampling point monitored in accordance with Section 611.358. The supplier is out of compliance with this subsection if the level of lead or copper at any sampling point is greater than the MPC approved by the Agency pursuant to subsection (b)(4)(B) of this Section.

6) Modification of Agency treatment decisions.

- A) On its own initiative, or in response to a request by a supplier, the Agency may, by a SEP issued pursuant to Section 611.110, modify its determination of the source water treatment under subsection (b)(2) of this Section, or the lead and copper MPCs under subsection (b)(4) of this Section.

- B) A request for modification by a supplier must be in writing, explain why the modification is appropriate, and provide supporting documentation.

- C) The Agency may, by a SEP issued pursuant to Section 611.110, modify its determination where it concludes that such change is necessary to ensure that the supplier continues to minimize lead and copper concentrations in source water.

- D) A revised determination made pursuant to subsection (b)(6)(C) of this Section must set forth the new treatment requirements, explain the basis for the Agency's decision, and provide an implementation schedule for completing the treatment modifications.

- E) Any interested person may submit information to the Agency, in writing, that bears on whether the Agency should, within its discretion, issue a SEP to modify its determination pursuant to subsection (h)(1) of this Section. An Agency determination not to act on a submission of such information by an interested person is not an Agency determination for the purposes of Sections 39 and 40 of the Act [415 ILCS 5/39 and 40].

7) Treatment decisions by USEPA. Pursuant to the procedures in 40 CFR 142.19, the USEPA Regional Administrator reserves the prerogative to review treatment determinations made by the Agency under subsections (b)(2), (b)(4), or (b)(6) of this Section and issue federal treatment determinations consistent with the requirements of 40 CFR 141.83(b)(2), (b)(4), and (b)(6), where the Administrator finds that the following is true:

   A) the Agency has failed to issue a treatment determination by the applicable deadline contained in subsection (a) of this Section;

   B) the Agency has abused its discretion in a substantial number of cases or in cases affecting a substantial population; or

   C) the technical aspects of the Agency's determination would be indefensible in an expected federal enforcement action taken against a supplier.

BOARD NOTE: Derived from 40 CFR 141.83 ~~(2002)~~ (2007), as amended at 57782 (October 10, 2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.354 Lead Service Line Replacement

a) Suppliers required to replace lead service lines.

   1) If the results from tap samples taken pursuant to Section 611.356(d)(2) exceed the lead action level after the supplier has installed corrosion control or source water treatment (whichever sampling occurs later), the supplier must recommence replacing lead service lines in accordance with the requirements of subsection (b) of this Section.

   2) If a supplier is in violation of Section 611.351 or Section 611.353 for failure to install source water or corrosion control treatment, the Agency may, by a SEP issued pursuant to Section 611.110, require the supplier to commence lead service line replacement under this Section after the date by which the supplier was required to conduct monitoring under Section 611.356(d)(2) has passed.

b) Annual replacement of lead service lines.

   1) Initiation of a lead service line replacement program.

      ~~1~~A) A supplier that is required to commence lead service line replacement pursuant to subsection (a) of this Section must annually replace at least seven percent of the initial number of lead service lines in its distribution system.

~~2~~B) The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins.

~~3~~C) The supplier must identify the initial number of lead service lines in its distribution system, including an identification of the portions of the system owned by the supplier, based on a materials evaluation, including the evaluation required under Section 611.356(a) and relevant legal authorities (e.g., contracts, local ordinances) regarding the portion owned by the system.

~~4~~D) The first year of lead service line replacement must begin on the ~~date~~ first day following the end of the monitoring period in which the supplier exceeded the action level ~~in tap sampling referenced in~~ pursuant to subsection (a) of this Section.

E) If monitoring is required annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs.

F) If the Agency has established an alternate monitoring period by a SEP issued pursuant to Section 611.110, then the end of the monitoring period will be the last day of that period.

2) Resumption of a lead service line replacement program after cessation.

A) A supplier that is resuming a program after cessation of its lead service line replacement program, as allowed pursuant to subsection (f) of this Section, must update its inventory of lead service lines to include those sites that it had previously determined did not require replacement pursuant to the sampling provision of subsection (c) of this Section.

B) The supplier will then divide the updated number of remaining lead service lines by the number of remaining years in the program to determine the number of lines that must be replaced per year (seven percent lead service line replacement is based on a 15-year replacement program, so that, for example, a supplier resuming lead service line replacement after previously conducting two years of replacement would divide the updated inventory by 13).

C) For a supplier that has completed a 15-year lead service line replacement program, the Agency must, by a SEP issued pursuant to Section 611.110, determine a schedule for replacing or retesting

<u>lines that were previously tested out under the completed replacement program, whenever the supplier has re-exceeded the action level.</u>

c) Service lines not needing replacement. A supplier is not required to replace any individual lead service line for which the lead concentrations in all service line samples taken from that line pursuant to Section 611.356(b)(3) are less than or equal to 0.015 mg/ℓ.

d) A water supplier must replace that portion of the lead service line that it owns. In cases where the supplier does not own the entire lead service line, the supplier must notify the owner of the line, or the owner's authorized agent, that the supplier will replace the portion of the service line that it owns and must offer to replace the owner's portion of the line. A supplier is not required to bear the cost of replacing the privately-owned portion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by State, local, or common law. A water supplier that does not replace the entire length of the service line also must complete the following tasks:

1) Notice Prior to Commencement of Work.

A) At least 45 days prior to commencing the partial replacement of a lead service line, the water supplier must provide notice to the residents of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead.

B) The Agency, by issuing an appropriate SEP, may allow the water supplier to provide notice under the previous sentence less than 45 days prior to commencing partial lead service line replacement where it determines that such replacement is in conjunction with emergency repairs.

C) In addition, the water supplier must inform the residents served by the line that the supplier will, at the supplier's expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content, as prescribed by Section 611.356(b)(3), within 72 hours after the completion of the partial replacement of the service line. The supplier must collect the sample and report the results of the analysis to the owner and the residents served by the line within three business days of receiving the results.

D) Mailed notices post-marked within three business days of receiving the results must be considered "on time."

2) The water supplier must provide the information required by subsection (d)(1) of this Section to the residents of individual dwellings by mail or by other methods approved by the Agency by a SEP issued pursuant to Section 611.110. In instances where multi-family dwellings are served by the service line, the water supplier must have the option to post the information at a conspicuous location.

e) Agency determination of shorter replacement schedule.

1) The Agency must, by a SEP issued pursuant to Section 611.110, require a supplier to replace lead service lines on a shorter schedule than that otherwise required by this Section if it determines, taking into account the number of lead service lines in the system, that such a shorter replacement schedule is feasible.

2) The Agency must notify the supplier of its finding pursuant to subsection (e)(1) of this Section within six months after the supplier is triggered into lead service line replacement based on monitoring, as referenced in subsection (a) of this Section.

f) Cessation of service line replacement.

1) Any supplier may cease replacing lead service lines whenever it fulfills both of the following conditions:

A) First draw tap samples collected pursuant to Section 611.356(b)(2) meet the lead action level during each of two consecutive six-month monitoring periods; and

B) The supplier has submitted those results to the Agency.

2) If any of the supplier's first draw tap samples thereafter exceed the lead action level, the supplier must recommence replacing lead service lines pursuant to subsection (b)(2) of this Section.

g) To demonstrate compliance with subsections (a) through (d) of this Section, a supplier must report to the Agency the information specified in Section 611.360(e).

BOARD NOTE: Derived from 40 CFR 141.84 ~~(2003)~~ (2007), as amended at 57782 (October 10, 2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.355 Public Education and Supplemental Monitoring

A supplier that exceeds the lead action level based on tap water samples collected in accordance with Section 611.356 must deliver the public education materials required by ~~subsections~~ subsection (a) ~~and (b)~~ of this Section in accordance with the requirements of subsection ~~(c)~~ (b) of this Section. A supplier that exceeds the lead action level must sample the tap water of any customer who requests it in accordance with subsection (c) of this Section. A supplier must deliver a consumer notice of lead tap water monitoring results to persons who are served by the supplier at each site that the supplier has tested, as specified in subsection (d) of this Section.

a) Content of written public education materials.

1) Community water systems and non-transient non-community water systems. A CWS or NTNCWS supplier must include the ~~text set forth in Appendix E of this Part in all of the printed materials it distributes through its lead public education program.~~ following elements in printed materials (e.g., brochures and pamphlets) in the same order as listed in subsections (a)(1)(A) through (a)(1)(F) of this Section. ~~A supplier may delete information pertaining to lead service lines, upon approval by the Agency by a SEP issued pursuant to Section 611.110, if no lead service lines exist anywhere in the water system service area. Public education language at paragraphs (4)(B)(5) and (4)(D)(2) of Appendix E of this Part may be modified regarding building permit record availability and consumer access to these records, if approved by the Agency by a SEP issued pursuant to Section 611.110. A supplier may also continue to utilize pre-printed materials that meet the public education language requirements in 40 CFR 141.85 (1991). Any additional information presented by a supplier must be consistent with the information in Appendix E of this Part and be in plain English that can be understood by lay persons.~~ In addition, the supplier must include the language set forth in subsections (a)(1)(A), (a)(1)(B), and (a)(1)(F) of this Section in the materials, exactly as written, except for the text in brackets in these subsections, for which the supplier must include system-specific information. Any additional information presented by a supplier must be consistent with the information set forth in subsections (a)(1)(A) through (a)(1)(F) of this Section, and the supplier must present the additional information in plain language that can be understood by the general public. The supplier must submit all written public education materials to the Agency.

~~BOARD NOTE: At corresponding 40 CFR 141.85(a)(1) (2002), USEPA allowed the use of pre-printed copies of the public notices whose content met the requirements of the original lead and copper rule adopted on June 7, 1991 (56 Fed. Reg. 26548). Rather than reference a prior version of this Section of the Illinois rules, the Board has retained the federal reference to the prior requirements.~~

A) IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [INSERT NAME OF SUPPLIER] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

BOARD NOTE: The supplier must use the verbatim text set forth in this subsection (a)(1)(A), with the exception that the supplier must insert its name in place of the bracketed text.

B) Health effects of lead. Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

BOARD NOTE: The supplier must use the verbatim text set forth in this subsection (a)(1)(B).

C) Sources of Lead.

i) Explain what lead is.

ii) Explain possible sources of lead in drinking water and how lead enters drinking water. Include information on home and building plumbing materials and service lines that may contain lead.

iii) Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

BOARD NOTE: The supplier must use text that provides the information described in this subsection (a)(1)(C).

D) Discuss the steps the consumer can take to reduce his or her exposure to lead in drinking water.

i) Encourage running the water to flush out the lead.

ii) Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.

iii) Explain that boiling water does not reduce lead levels.

iv) Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or treatment of water.

v) Suggest that parents have their child's blood tested for lead.

BOARD NOTE: The supplier must use text that provides the information described in this subsection (a)(1)(D).

E) Explain why there are elevated levels of lead in the supplier's drinking water (if known) and what the supplier is doing to reduce the lead levels in homes and buildings in this area.

BOARD NOTE: The supplier must use text that provides the information described in this subsection (a)(1)(E).

F) For more information, call us at [INSERT THE SUPPLIER'S NUMBER] [(IF APPLICABLE), or visit our Web site at [INSERT THE SUPPLIER'S WEB SITE HERE]]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit USEPA's Web site at *http://www.epa.gov/lead* or contact your health care provider.

BOARD NOTE: The supplier must use the verbatim text set forth in this subsection (a)(1)(F), with the exception that the supplier must insert its name in place of the first segment of bracketed text, and it must add the second segment of bracketed text and substitute its Web address for the internal bracketed text.

2) ~~Non-transient non-community~~ Community water systems. ~~A NTNCWS must either include the text~~ In addition to including the elements specified in subsection (a)(1) of this Section~~, or must include the text set forth in Appendix F of this Part in all of the printed materials it distributes through its lead public education program. A water supplier may delete information pertaining to lead service lines upon approval by the Agency by a SEP issued pursuant to Section 611.110 if no lead service lines exist anywhere in the water system service area. Any additional information presented by a supplier must be consistent with the information below and~~

~~be in plain English that can be understood by lay persons.~~ a CWS supplier must do both of the following:

A) It must tell consumers how to get their water tested; and

B) It must discuss lead in plumbing components and the difference between low-lead and lead-free components.

BOARD NOTE: At corresponding 40 CFR 141.85(a)(1) (2007), USEPA allowed the State to require prior approval of written public information materials. Rather than require prior Agency approval, the Board has chosen to allow the Agency to raise any deficiencies that it may perceive using its existing procedure for review of public education materials. The Agency has outlined its standard practice for review of public information materials as follows: The Agency provides a comprehensive public education packet to the supplier together with the notice that the supplier has exceeded the lead action level. That packet includes guidance and templates for the supplier to use in preparing and distributing its public education materials. The supplier must send a copy of the public education materials that it distributes to the Agency, and the Agency reviews the copy of the materials after their distribution to the public. The Agency directly communicates to the supplier any perceived defects in the materials. The Agency will request correction when it perceives minor defects in future distributions of the public education materials, or the Agency will request a redistribution of corrected public education materials when it perceives major defects in the materials already distributed.

~~b) Content of broadcast materials. A supplier must include the following information in all public service announcements submitted under its lead public education program to television and radio stations for broadcast:~~

~~1) Why should everyone want to know the facts about lead and drinking water? Because unhealthy amounts of lead can enter drinking water through the plumbing in your home. That's why I urge you to do what I did. I had my water tested for (insert "free" or the cost per sample). You can contact the (insert the name of the city or supplier) for information on testing and on simple ways to reduce your exposure to lead in drinking water.~~

~~2) To have your water tested for lead, or to get more information about this public health concern, please call (insert the phone number of the city or supplier).~~

~~c~~b) Delivery of ~~a~~ public education ~~program~~ materials.

1) ~~In communities where~~ The public education materials of a supplier that serves a ~~significant~~ large proportion of ~~the population speaks a language~~

~~other than~~ non-English-speaking consumers~~,~~ ~~public education materials~~ must ~~be communicated~~ contain information in the appropriate languages regarding the importance of the notice, or it must contain a telephone number or address where a person served may contact the supplier to obtain a translated copy of the public education materials or to request assistance in the appropriate language.

2) A CWS supplier that exceeds the lead action level on the basis of tap water samples collected in accordance with Section 611.356 and which is not already ~~repeating~~ conducting public education tasks pursuant to ~~subsection (c)(3), (c)(7), or (c)(8) of~~ this Section must, within 60 days after the end of the monitoring period in which the exceedance occurred, ~~do each of the following~~ complete the public education tasks according to the following requirements:

~~A) Insert notices in each customer's water utility bill or disseminate to each customer by separately mailing a notice containing the information required by subsection (a)(1) of this Section, along with the following alert in large print on the water bill itself: "SOME HOMES IN THIS COMMUNITY HAVE ELEVATED LEAD LEVELS IN THEIR DRINKING WATER. LEAD CAN POSE A SIGNIFICANT RISK TO YOUR HEALTH. PLEASE READ THE ENCLOSED NOTICE FOR FURTHER INFORMATION." A CWS supplier having a billing cycle that does not include a billing within 60 days after exceeding the action level or a CWS supplier that cannot insert information in the water utility bill without making major changes to its billing system may use a separate mailing to deliver the information in subsection (a)(1) of this Section, as long as the information is delivered to each customer within 60 days of exceeding the action level. Such a water supplier must also include the "alert" language specified in this subsection (c)(2)(A);~~

~~B) Submit the information required by subsection (a)(1) of this Section to the editorial departments of the major daily and weekly newspapers circulated throughout the community;~~

~~C) Deliver pamphlets or brochures that contain the public education materials in paragraphs (2) and (4) of Appendix E of this Part to facilities and organizations, including the following:~~

~~i) Public schools or local school boards;~~

~~ii) The city or county health department;~~

~~iii) Women, Infants, and Children (WIC) and Head Start~~

~~programs, whenever available;~~

~~iv) Public and private hospitals and clinics;~~

~~v) Pediatricians;~~

~~vi) Family planning clinics; and~~

~~vii) Local welfare agencies; and~~

~~D) Submit the public service announcement in subsection (b) of this Section to at least five of the radio and television stations with the largest audiences within the community served by the supplier.~~

A) The CWS supplier must deliver printed materials that meet the content requirements of subsection (a) of this Section to all of its bill-paying customers.

B) Methods of delivery for a CWS supplier.

i) The CWS supplier must contact customers who are most at risk by delivering education materials that meet the content requirements of subsection (a) of this Section to local public health agencies, even if the agencies are not located within the supplier's service area, along with an informational notice that encourages distribution to all of the agencies' potentially affected customers or the supplier's users. The supplier must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community-based organizations that serve the target populations, which may include organizations outside the service area of the supplier. If such lists are provided, the supplier must deliver education materials that meet the content requirements of subsection (a) of this Section to each of the organizations on the provided lists.

ii) The CWS supplier must contact customers who are most at risk by delivering materials that meet the content requirements of subsection (a) of this Section to the organizations listed in subsections (b)(2)(H)(i) through (b)(2)(H)(vi) that are located within the supplier's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or supplier's users.

BOARD NOTE: The Board found it necessary to move the text of 40 CFR 141.85(b)(2)(ii)(B)(*1*) through (b)(2)(ii)(B)(*6*) (2007), as added at 72 Fed. Reg. 57782 (Oct. 10, 2007), to appear as subsection (b)(2)(H)(i) through subsection (b)(2)(H)(vi) of this Section, in order to comport with Illinois Administrative Code codification requirements relating to allowed indent levels in rules.

iii) The CWS supplier must make a good faith effort to locate the organizations listed in subsections (b)(2)(I)(i) through (b)(2)(I)(iii) of this Section that are located within the service area and deliver materials that meet the content requirements of subsection (a) of this Section to them, along with an informational notice that encourages distribution to all potentially affected customers or users. The good faith effort to contact at-risk customers may include requesting a specific contact list of these organizations from the local public health agencies, even if the agencies are not located within the supplier's service area.

BOARD NOTE: The Board found it necessary to move the text of 40 CFR 141.85(b)(2)(ii)(C)(*1*) through (b)(2)(ii)(C)(*3*) (2007), as added at 72 Fed. Reg. 57782 (Oct. 10, 2007), to appear as subsection (b)(2)(I)(i) through subsection (b)(2)(I)(iii) of this Section, in order to comport with Illinois Administrative Code codification requirements relating to allowed indent levels in rules.

C) No less often than quarterly, the CWS supplier must provide information on or in each water bill as long as the system exceeds the action level for lead. The message on the water bill must include the following statement exactly as written, except for the text in brackets for which the supplier must include system-specific information:

[INSERT NAME OF SUPPLIER] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF SUPPLIER] [or visit (INSERT SUPPLIER'S WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the Illinois Environmental Protection Agency, Division of Public Water Supply; specifically, the Agency may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.

D) The CWS supplier must post material meeting the content requirements of subsection (a) of this Section on the supplier's Web site if the CWS supplier serves a population greater than 100,000.

E) The CWS supplier must submit a press release to newspaper, television, and radio stations.

F) In addition to subsections (b)(2)(A) through (b)(2)(E) of this Section, the CWS supplier must implement at least three activities from one or more of the categories listed below. The educational content and selection of these activities must be determined in consultation with the Agency.

i) Public Service Announcements.

ii) Paid advertisements.

iii) Public Area Information Displays.

iv) E-mails to customers.

v) Public Meetings.

vi) Household Deliveries.

vii) Targeted Individual Customer Contact.

viii) Direct material distribution to all multi-family homes and institutions.

ix) Other methods approved by the State.

G) For a CWS supplier that is required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the Agency has established an alternate monitoring period, by a SEP issued pursuant to Section 611.110, the last day of that period.

H) Organizations that the CWS supplier must contact when required to do so pursuant to subsection (b)(2)(B)(ii) of this Section.

i) Public and private schools or school boards.

ii) Women, Infants and Children (WIC) and Head Start programs.

iii) Public and private hospitals and medical clinics.

vi) Pediatricians.

v) Family planning clinics.

vi) Local welfare agencies.

BOARD NOTE: This subsection (b)(2)(H) corresponds with 40 CFR 141.85(b)(2)(ii)(B)(*1*) through (b)(2)(ii)(B)(*6*) (2007), as added at 72 Fed. Reg. 57782 (Oct. 10, 2007). The Board found it necessary to move the text of those federal provisions to comport with Illinois Administrative Code codification requirements relating to allowed indent levels in rules.

I) Organizations that the CWS supplier must contact when required to do so pursuant to subsection (b)(2)(B)(iii) of this Section.

i) Licensed childcare centers.

ii) Public and private preschools.

iii) Obstetricians-gynecologists and midwives.

BOARD NOTE: This subsection (b)(2)(H) corresponds with 40 CFR 141.85(b)(2)(ii)(C)(*1*) through (b)(2)(ii)(C)(*3*) (2007), as added at 72 Fed. Reg. 57782 (Oct. 10, 2007). The Board found it necessary to move the text of those federal provisions to comport with Illinois Administrative Code codification requirements relating to allowed indent levels in rules.

~~3) A CWS supplier must repeat the tasks contained in subsections (c)(2)(A) through (c)(2)(D) of this Section for as long as the supplier exceeds the lead action level, at the following minimum frequency:~~

~~A) Those of subsections (c)(2)(A) through (c)(2)(C) of this Section, every 12 months; and~~

~~B) Those of subsection (c)(2)(D) of this Section, every six months.~~

3) As long as a CWS supplier exceeds the action level, it must repeat the activities described in subsection (b)(2) of this Section, as described in

subsections (b)(3)(A) through (b)(3)(D) of this Section.

A) A CWS supplier must repeat the tasks contained in subsections (b)(2)(A), (b)(2)(B) and (b)(2)(D) of this Section every 12 months.

B) A CWS supplier must repeat tasks contained in subsection (b)(2)(C) of this Section with each billing cycle.

C) A CWS supplier serving a population greater than 100,000 must post and retain material on a publicly accessible Web site pursuant to subsection (b)(2)(D) of this Section.

D) The CWS supplier must repeat the task in subsection (b)(2)(E) of this Section twice every 12 months on a schedule agreed upon with the Agency by a SEP issued pursuant to Section 611.110. The Agency must, on a case-by-case basis, by a SEP issued pursuant to Section 611.110, extend the time for the supplier to complete the public education tasks set forth in subsection (b)(2) of this Section beyond the 60-day limit if it determines that the extended time is needed for implementation purposes; however, the Agency must issue the SEP granting any extension prior to expiration of the 60-day deadline.

4) Within 60 days after ~~it~~ the end of the monitoring period in which a NTNCWS supplier exceeds the lead action level (unless it already is repeating public education tasks pursuant to subsection ~~(c)(5)~~ (b)(5) of this Section), ~~a NTNCWS supplier~~ it must deliver the public education materials ~~contained in Appendix E or F of this Part~~ specified by subsection (a) of this Section, as ~~follows~~ in subsections (b)(4)(A) and (b)(4)(B) of this Section, subject to the limitation set forth in subsection (b)(4)(C) of this Section:

A) ~~Post~~ The NTNCWS supplier must post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the supplier; and

B) ~~Distribute~~ The NTNCWS supplier must distribute informational pamphlets or brochures on lead in drinking water to each person served by the NTNCWS supplier. The Agency may, by a SEP granted pursuant to Section 611.110, allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.

C) For a NTNCWS supplier that is required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the Agency has established an alternate monitoring period, by a SEP issued pursuant to Section 611.110, the last day of that period.

5) A NTNCWS supplier must repeat the tasks ~~contained~~ set forth in subsection ~~(c)(4)~~ (b)(4) of this Section at least once during each calendar year in which the supplier exceeds the lead action level. The Agency must, on a case-by-case basis, by a SEP issued pursuant to Section 611.110, extend the time for the supplier to complete the public education tasks set forth in subsection (b)(2) of this Section beyond the 60-day limit if it determines that the extended time is needed for implementation purposes; however, the Agency must issue the SEP granting any extension prior to expiration of the 60-day deadline.

6) A supplier may discontinue delivery of public education materials after it has met the lead action level during the most recent six-month monitoring period conducted pursuant to Section 611.356. Such a supplier must begin public education anew in accordance with this Section if it subsequently exceeds the lead action level during any six-month monitoring period.

7) A CWS supplier may apply to the Agency, in writing, to use only the text specified in ~~Appendix F of this Part~~ subsection (a)(1) of this Section in lieu of the text in ~~Appendix E of this Part~~ subsections (a)(1) and (a)(2) of this Section and to perform the tasks listed in subsections ~~(c)(4)~~ (b)(4) and ~~(c)(5)~~ (b)(5) of this Section in lieu of the tasks in subsections ~~(c)(2)~~ (b)(2) and ~~(c)(3)~~ (b)(3) of this Section if the following are true:

A) The supplier is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and

B) The system provides water as part of the cost of services provided, and it does not separately charge for water consumption.

~~8) Reduced requirements for certain smaller CWS suppliers.~~

~~A) A CWS supplier serving 3,300 or fewer people may omit the task contained in subsection (c)(2)(D) of this Section. As long as it distributes notices containing the information contained in Appendix E of this Part to every household served by the system, such a supplier may further limit its public education programs as follows:~~

~~i) A supplier serving 500 or fewer people may forego the task contained in subsection (c)(2)(B) of this Section. Such a~~

~~system may limit the distribution of the public education materials required under subsection (c)(2)(C) of this Section to facilities and organizations served by the supplier that are most likely to be visited regularly by pregnant women and children, unless it is notified by the Agency in writing that it must make a broader distribution.~~

~~ii) If approved by the Agency by a SEP issued pursuant to Section 611.110, a system serving 501 to 3,300 people may omit the task in subsection (c)(2)(B) of this Section or limit the distribution of the public education materials required under subsection (c)(2)(C) of this Section to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.~~

~~B) A CWS supplier serving 3,300 or fewer people that delivers public education in accordance with subsection (c)(8)(A) of this Section must repeat the required public education tasks at least once during each calendar year in which the supplier exceeds the lead action level.~~

8) A CWS supplier that serves 3,300 or fewer people may limit certain aspects of its public education programs as follows:

A) With respect to the requirements of subsection (b)(2)(F) of this Section, a supplier that serves 3,300 or fewer people must implement at least one of the activities listed in that subsection.

B) With respect to the requirements of subsection (b)(2)(B) of this Section, a supplier that serves 3,300 or fewer people may limit the distribution of the public education materials required under that subsection to facilities and organizations that it serves which are most likely to be visited regularly by pregnant women and children.

C) With respect to the requirements of subsection (b)(2)(E) of this Section, the Agency may, by a SEP issued pursuant to Section 611.110, waive this requirement for a supplier that serves 3,300 or fewer persons, as long as the supplier distributes notices to every household that it serves.

~~d~~c) Supplemental monitoring and notification of results. A supplier that fails to meet the lead action level on the basis of tap samples collected in accordance with Section 611.356 must offer to sample the tap water of any customer who requests it. The supplier is not required to pay for collecting or analyzing the sample, nor is the supplier required to collect and analyze the sample itself.

d) Requirement for consumer notice of tap water monitoring results.

1) Consumer notice requirement. A supplier must provide a notice of the individual tap results from lead tap water monitoring carried out under the requirements of Section 611.356 to the persons served by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap was tested).

2) Timing of consumer notice. The supplier must provide the consumer notice as soon as practical, but no later than 30 days after it learns of the tap monitoring results.

3) Content of consumer notice. The consumer notice must include the results of lead tap water monitoring for the tap that was tested, an explanation of the health effects of lead, a list of steps that consumers can take to reduce exposure to lead in drinking water, and contact information for the water utility. The notice must also provide the maximum contaminant level goal and the action level for lead and the definitions for these two terms from Section 611.883(c).

4) Delivery of consumer notice. The consumer notice must be provided to persons served at the tap that was tested, either by mail or by another method approved by the Agency, by a SEP issued pursuant to Section 611.110. For example, upon approval by the Agency, a NTNCWS supplier could post the results on a bulletin board in the facility to allow users to review the information. The supplier must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.

BOARD NOTE: Derived from 40 CFR 141.85 ~~(2002)~~ (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.356 Tap Water Monitoring for Lead and Copper

a) ~~Sample~~ Sampling site location.

1) Selecting a pool of targeted sampling sites.

A) By the applicable date for commencement of monitoring under subsection (d)(1) of this Section, each supplier must complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites that meets the requirements of this Section.

B) The pool of targeted sampling sites must be sufficiently large to ensure that the supplier can collect the number of lead and copper tap samples required by subsection (c) of this Section.

C) The supplier must select the sites for collection of first draw samples from this pool of targeted sampling sites.

D) The supplier must not select as sampling sites any faucets that have point-of-use or point-of-entry treatment devices designed to remove or capable of removing inorganic contaminants.

2) Materials evaluation.

A) A supplier must use the information on lead, copper, and galvanized steel collected pursuant to 40 CFR 141.42(d) (special monitoring for corrosivity characteristics) when conducting a materials evaluation.

B) When an evaluation of the information collected pursuant to 40 CFR 141.42(d) is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in subsection (a) of this Section, the supplier must review the following sources of information in order to identify a sufficient number of sampling sites:

i) All plumbing codes, permits, and records in the files of the building departments that indicate the plumbing materials that are installed within publicly- and privately-owned structures connected to the distribution system;

ii) All inspections and records of the distribution system that indicate the material composition of the service connections which connect a structure to the distribution system;

iii) All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations; and

iv) The supplier must seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities).

3) Tiers of sampling sites. Suppliers must categorize the sampling sites within their pool according to the following tiers:

A) CWS Tier 1 sampling sites. "CWS Tier 1 sampling sites" must include the following single-family structures:

i) Those that contain copper pipes with lead solder installed after 1982 or which contain lead pipes; or

ii) Those that are served by a lead service line.

BOARD NOTE: Subsection (a)(3)(A) was derived from segments of 40 CFR 141.86(a)(3) ~~(2003)~~ (2007). This allows the pool of CWS tier 1 sampling sites to consist exclusively of structures served by lead service lines.

B) CWS Tier 2 sampling sites. "CWS Tier 2 sampling sites" must include the following buildings, including multiple-family structures:

i) Those that contain copper pipes with lead solder installed after 1982 or contain lead pipes; or

ii) Those that are served by a lead service line.

BOARD NOTE: Subsection (a)(3)(B) was derived from segments of 40 CFR 141.86(a)(4) ~~(2003)~~ (2007). This allows the pool of CWS tier 2 sampling sites to consist exclusively of structures served by lead service lines.

C) CWS Tier 3 sampling sites. "CWS Tier 3 sampling sites" must include the following single-family structures: those that contain copper pipes with lead solder installed before 1983.

BOARD NOTE: Subsection (a)(3)(C) was derived from segments of 40 CFR 141.86(a)(5) ~~(2003)~~ (2007).

D) NTNCWS Tier 1 sampling sites. "NTNCWS Tier 1 sampling sites" must include the following buildings:

i) Those that contain copper pipes with lead solder installed after 1982 or which contain lead pipes; or

ii) Those that are served by a lead service line.

BOARD NOTE: Subsection (a)(3)(D) was derived from segments of 40 CFR 141.86(a)(6) ~~(2003)~~ (2007). This allows the pool of NTNCWS tier 1 sampling sites to consist exclusively of buildings served by lead service lines.

E) Alternative NTNCWS sampling sites. "Alternative NTNCWS sampling sites" must include the following buildings: those that contain copper pipes with lead solder installed before 1983.

BOARD NOTE: Subsection (a)(3)(E) was derived from segments of 40 CFR 141.86(a)(7) ~~(2003)~~ (2007).

4) Selection of sampling sites. Suppliers must select sampling sites for their sampling pool as follows:

A) CWS Suppliers. CWS suppliers must use CWS tier 1 sampling sites, except that the supplier may include CWS tier 2 or CWS tier 3 sampling sites in its sampling pool as follows:

i) If multiple-family residences comprise at least 20 percent of the structures served by a supplier, the supplier may use CWS tier 2 sampling sites in its sampling pool; or

BOARD NOTE: Subsection (a)(4)(A)(i) was derived from a segment of 40 CFR 141.86(a)(3)(ii) ~~(2003)~~ (2007).

ii) If the CWS supplier has an insufficient number of CWS tier 1 sampling sites on its distribution system, the supplier may use CWS tier 2 sampling sites in its sampling pool; or

BOARD NOTE: Subsection (a)(4)(A)(ii) was derived from a segment of 40 CFR 141.86(a)(4) ~~(2003)~~ (2007).

iii) If the CWS supplier has an insufficient number of CWS tier 1 and CWS tier 2 sampling sites on its distribution system, the supplier may complete its sampling pool with CWS tier 3 sampling sites.

BOARD NOTE: Subsection (a)(4)(A)(iii) was derived from a segment of 40 CFR 141.86(a)(5) ~~(2003)~~ (2007).

iv) If the CWS supplier has an insufficient number of CWS tier 1 sampling sites, CWS tier 2 sampling sites, and CWS tier 3 sampling sites, the supplier must use those CWS tier 1 sampling sites, CWS tier 2 sampling sites, and CWS tier 3 sampling sites that it has and complete its sampling pool with representative sites throughout its distribution system for the balance of its sampling sites. For the purpose of this subsection (a)(4)(A)(iv), a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

BOARD NOTE: Subsection (a)(4)(A)(iv) was derived from segments of 40 CFR 141.86(a)(5) ~~(2003)~~ (2007).

B) NTNCWS suppliers.

i) An NTNCWS supplier must select NTNCWS tier 1 sampling sites for its sampling pool.

BOARD NOTE: Subsection (a)(4)(B)(i) was derived from segments of 40 CFR 141.86(a)(6) ~~(2003)~~ (2007).

ii) If the NTNCWS supplier has an insufficient number of NTNCWS tier 1 sampling sites, the supplier may complete its sampling pool with alternative NTNCWS sampling sites.

BOARD NOTE: Subsection (a)(4)(B)(ii) was derived from segments of 40 CFR 141.86(a)(7) ~~(2003)~~ (2007).

iii) If the NTNCWS supplier has an insufficient number of NTNCWS tier 1 sampling sites and NTNCWS alternative sampling sites, the supplier must use representative sites throughout its distribution system. For the purpose of this subsection (a)(4)(B)(ii), a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

BOARD NOTE: Subsection (a)(4)(B)(iii) was derived from segments of 40 CFR 141.86(a)(7) ~~(2003)~~ (2007).

C) Suppliers with lead service lines. Any supplier whose distribution system contains lead service lines must draw samples during each six-month monitoring period from sampling sites as follows:

i) 50 percent of the samples from sampling sites that contain lead pipes or from sampling sites that have copper pipes with lead solder; and

ii) 50 percent of those samples from sites served by a lead service line.

iii) A supplier that cannot identify a sufficient number of sampling sites served by a lead service line must collect first-draw samples from all of the sites identified as being served by such lines.

BOARD NOTE: Subsection (a)(4)(C) was derived from segments of 40 CFR 141.86(a)(8) ~~(2003)~~ (2007). This allows the pool of sampling sites to consist exclusively of structures or buildings served by lead service lines.

b) Sample collection methods.

1) All tap samples for lead and copper collected in accordance with this Subpart G, with the exception of lead service line samples collected under Section 611.354(c) and samples collected under subsection (b)(5) of this Section, must be first-draw samples.

2) First-draw tap samples.

A) Each first-draw tap sample for lead and copper must be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours.

B) First-draw samples from residential housing must be collected from the cold water kitchen tap or bathroom sink tap.

C) First-draw samples from a non-residential building must be one liter in volume and must be collected at an interior tap from which water is typically drawn for consumption.

D) Non-first-draw samples collected in lieu of first-draw samples pursuant to subsection (b)(5) of this Section must be one liter in volume and must be collected at an interior tap from which water is typically drawn for consumption.

E) First-draw samples may be collected by the supplier or the supplier may allow residents to collect first-draw samples after instructing the residents of the sampling procedures specified in this subsection (b).

i) To avoid problems of residents handling nitric acid, acidification of first-draw samples may be done up to 14 days after the sample is collected.

ii) After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved USEPA method before the sample can be analyzed.

F) If a supplier allows residents to perform sampling under subsection (b)(2)(D) of this Section, the supplier may not challenge the accuracy of sampling results based on alleged errors in sample collection.

3) Service line samples.

A) Each service line sample must be one liter in volume and have stood motionless in the lead service line for at least six hours.

B) Lead service line samples must be collected in one of the following three ways:

i) At the tap after flushing that volume of water calculated as being between the tap and the lead service line based on the interior diameter and length of the pipe between the tap and the lead service line;

ii) Tapping directly into the lead service line; or

iii) If the sampling site is a single-family structure, allowing the water to run until there is a significant change in temperature that would be indicative of water that has been standing in the lead service line.

4) Follow-up first-draw tap samples.

A) A supplier must collect each follow-up first-draw tap sample from the same sampling site from which it collected the previous samples.

B) If, for any reason, the supplier cannot gain entry to a sampling site in order to collect a follow-up tap sample, the supplier may collect the follow-up tap sample from another sampling site in its sampling pool, as long as the new site meets the same targeting criteria and is within reasonable proximity of the original site.

5) Substitute non-first-draw samples.

A) A NTNCWS supplier or a CWS supplier that meets the criteria of Sections ~~611.355(c)(7)(A) and (c)(7)(B)~~ 611.355(b)(7)(A) and (b)(7)(B), that does not have enough taps that can supply first-draw samples, as defined in Section 611.102, may apply to the Agency in writing to substitute non-first-draw samples by a SEP granted under Section 611.110.

B) A supplier approved to substitute non-first-draw samples must collect as many first-draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites.

C) The Agency may grant a SEP that waives the requirement for prior Agency approval of non-first-draw ~~sample~~ sampling sites selected by the system.

c) Number of samples.

1) Suppliers must collect at least one sample from the number of sites listed in the first column of Table D of this Part (labelled "standard monitoring") during each six-month monitoring period specified in subsection (d) of this Section.

2) A supplier conducting reduced monitoring pursuant to subsection (d)(4) of this Section must collect one sample from the number of sites specified in the second column of Table D of this Part (labelled "reduced monitoring") during each reduced monitoring period specified in subsection (d)(4) of this Section. Such reduced monitoring sites must be representative of the sites required for standard monitoring. A supplier whose system has fewer than five drinking water taps that can be used for human consumption and which can meet the sampling site criteria of subsection (a) of this Section to reach the required number of sampling sites listed in this subsection (c), must collect multiple samples from individual taps. To accomplish this, the supplier must collect at least one sample from each tap, then it must collect additional samples from those same taps on different days during the monitoring period, in order to collect a total number of samples that meets the required number of sampling sites. Alternatively, the Agency must, by a SEP issued pursuant to Section 611.110, allow a supplier whose system has fewer than five drinking water taps to collect a number of samples that is fewer than the number of sites specified in this subsection (c) if it determines that 100 percent of all taps that can be used for human consumption are sampled and that the reduced number of samples will produce the same results as would the collection of multiple samples from some taps. Any Agency approval of a reduction of the minimum number of samples must be based on a request from the supplier or on on-site verification by the Agency. The Agency may, by a SEP issued pursuant to Section 611.110, specify sampling locations when a system is conducting reduced monitoring.

d) Timing of monitoring.

1) Initial tap sampling. The first six-month monitoring period for small, medium-sized and large system suppliers must begin on the dates specified in Table E of this Part.

A) All large system suppliers must monitor during each of two consecutive six-month periods.

B) All small- and medium-sized system suppliers must monitor during each consecutive six-month monitoring period until the following is true:

i) The supplier exceeds the lead action level or the copper action level and is therefore required to implement the corrosion control treatment requirements under Section 611.351, in which case the supplier must continue monitoring in accordance with subsection (d)(2) of this Section; or

ii) The supplier meets the lead action level and the copper action level during each of two consecutive six-month monitoring periods, in which case the supplier may reduce monitoring in accordance with subsection (d)(4) of this Section.

2) Monitoring after installation of corrosion control and source water treatment.

A) Any large system supplier that installs optimal corrosion control treatment pursuant to Section 611.351(d)(4) must have monitored during each of two consecutive six-month monitoring periods before January 1, 1998.

B) Any small- or medium-sized system supplier that installs optimal corrosion control treatment pursuant to Section 611.351(e)(5) must monitor during each of two consecutive six-month monitoring periods before 36 months after the Agency approves optimal corrosion control treatment, as specified in Section 611.351(e)(6).

C) Any supplier that installs source water treatment pursuant to Section 611.353(a)(3) must monitor during each of two consecutive six-month monitoring periods before 36 months after completion of step 2, as specified in Section 611.353(a)(4).

3) Monitoring after the Agency specification of water quality parameter

values for optimal corrosion control. After the Agency specifies the values for water quality control parameters pursuant to Section 611.352(f), the supplier must monitor during each subsequent six-month monitoring period, with the first six-month monitoring period to begin on the date the Agency specifies the optimal values.

4) Reduced monitoring.

  A) Reduction to annual for small- and medium-sized system suppliers meeting the lead and copper action levels. A small- or medium-sized system supplier that meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the number of samples in accordance with subsection (c) of this Section, and reduce the frequency of sampling to once per year. A small- or medium-sized system supplier that collects fewer than five samples as specified in subsection (c) of this Section and which meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce its frequency of sampling to once per year. In no case can the supplier reduce the number of samples required below the minimum of one sample per available tap. This reduced sampling may only begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

  B) SEP allowing reduction to annual for suppliers maintaining water quality control parameters.

    i) Any supplier that meets the lead action level and which maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Agency under Section 611.352(f) during each of two consecutive six-month monitoring periods may reduce the frequency of monitoring to once per year and the number of lead and copper samples to that specified by subsection (c) of this Section if it receives written approval from the Agency in the form of a SEP granted pursuant to Section 611.110. This reduced sampling may only begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

    ii) The Agency must review monitoring, treatment, and other relevant information submitted by the water system in accordance with Section 611.360, and must notify the system in writing by a SEP granted pursuant to Sections 611.110 when it determines the system is eligible to reduce its monitoring frequency to once every three years pursuant to this subsection (d)(4).

iii) The Agency must review, and where appropriate, revise its determination under subsection (d)(4)(B)(i) of this Section when the supplier submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available to the Agency.

C) Reduction to triennial for small- and medium-sized system suppliers.

i) Small- and medium-sized system suppliers meeting lead and copper action levels. A small- or medium-sized system supplier that meets the lead action level and which meets the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three years.

ii) SEP for suppliers meeting optimal corrosion control treatment. Any supplier that maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Agency under Section 611.352(f) during three consecutive years of monitoring may reduce its monitoring frequency from annual to once every three years if it receives written approval from the Agency in the form of a SEP granted pursuant to Section 611.110. Samples collected once every three years must be collected no later than every third calendar year.

iii) The Agency must review, and where appropriate, revise its determination under subsection (d)(4)(C)(ii) of this Section when the supplier submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available to the Agency.

D) Sampling at a reduced frequency. A supplier that reduces the number and frequency of sampling must collect these samples from representative sites included in the pool of targeted sampling sites identified in subsection (a) of this Section, preferentially selecting those sampling sites from the highest tier first. Suppliers sampling annually or less frequently must conduct the lead and copper tap sampling during the months of June, July, August, or

September, unless the Agency has approved a different sampling period in accordance with subsection (d)(4)(D)(i) of this Section.

i) The Agency may grant a SEP pursuant to Section 611.110 that approves a different period for conducting the lead and copper tap sampling for systems collecting a reduced number of samples. Such a period must be no longer than four consecutive months and must represent a time of normal operation where the highest levels of lead are most likely to occur. For a NTNCWS supplier that does not operate during the months of June through September and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the Agency must designate a period that represents a time of normal operation for the system. This reduced sampling may only begin during the period approved or designated by the Agency in the calendar year immediately following the end of the second consecutive six-month monitoring period for systems initiating annual monitoring and during the three-year period following the end of the third consecutive calendar year of annual monitoring for a supplier initiating triennial monitoring.

ii) A supplier monitoring annually that has been collecting samples during the months of June through September and which receives Agency approval to alter its sample collection period under subsection (d)(4)(D)(i) of this Section must collect its next round of samples during a time period that ends no later than 21 months after the previous round of sampling. A supplier monitoring once every three years that has been collecting samples during the months of June through September and which receives Agency approval to alter the sampling collection period as provided in subsection (d)(4)(D)(i) of this Section must collect its next round of samples during a time period that ends no later than 45 months after the previous round of sampling. Subsequent rounds of sampling must be collected annually or once every three years, as required by this Section. A small system supplier with a waiver granted pursuant to subsection (g) of this Section that has been collecting samples during the months of June through September and which receives Agency approval to alter its sample collection period under subsection (d)(4)(D)(i) of this Section must collect its next round of samples before the end of the nine-year compliance cycle (as that term is defined in Section 611.101).

E) Any water system that demonstrates for two consecutive six-month monitoring periods that the tap water lead level computed under Section 611.350(c)(3) is less than or equal to 0.005 mg/ℓ and that the tap water copper level computed under Section 611.350(c)(3) is less than or equal to 0.65 mg/ℓ may reduce the number of samples in accordance with subsection (c) of this Section and reduce the frequency of sampling to once every three calendar years.

F) Resumption of standard monitoring.

  i) Small- or medium-sized suppliers exceeding lead or copper action level. A small- or medium-sized system supplier subject to reduced monitoring that exceeds the lead action level or the copper action level must resume sampling in accordance subsection (d)(3) of this Section and collect the number of samples specified for standard monitoring under subsection (c) of this Section. Such a supplier must also conduct water quality parameter monitoring in accordance with Section 611.357 (b), (c), or (d) (as appropriate) during the six-month monitoring period in which it exceeded the action level. Any such supplier may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in subsection (c) of this Section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of subsection (d)(4)(A) of this Section. Any such supplier may resume monitoring once every three years for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (d)(4)(C) or (d)(4)(E) of this Section.

  ii) Suppliers failing to operate within water quality control parameters. Any supplier subject to reduced monitoring frequency that fails to meet the lead action level during any four-month monitoring period or that fails to operate within the range of values for the water quality control parameters specified pursuant to Section 611.352(f) for more than nine days in any six-month period specified in Section 611.357(d) must conduct tap water sampling for lead and copper at the frequency specified in subsection (d)(3) of this Section, must collect the number of samples specified for standard monitoring under subsection (c) of this Section, and must resume monitoring for water quality parameters within the distribution system in accordance with Section 611.357(d). This standard tap water sampling must begin no later than the six-month period beginning January 1 of the calendar year following the lead action level exceedance or water quality parameter excursion. A supplier may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system only if it fulfills the conditions set forth in subsection (d)(4)(H) of this Section.

BOARD NOTE: The Board moved the material from the last sentence of 40 CFR 141.86(d)(4)(vi)(B) and 40 CFR 141.86(d)(4)(vi)(B)(*1*) through (d)(4)(vi)(B)(*3*) (2007) to subsections (d)(4)(H) and (d)(4)(H)(i) through (d)(4)(H)(iii), since Illinois Administrative Code codification requirements allow subsections only to four indent levels.

G) Any water supplier subject to a reduced monitoring frequency under subsection (d)(4) of this Section ~~that either adds a new source of water or changes any water treatment~~ must ~~inform~~ notify the Agency in writing in accordance with Section 611.360(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that Section. The Agency must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the supplier. The Agency may, by a SEP granted pursuant to Section 611.110, require the system to resume sampling in accordance with subsection (d)(3) of this Section and collect the number of samples specified for standard monitoring under subsection (c) of this Section or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

H) A supplier required under subsection (d)(4)(F) of this Section to resume monitoring in accordance with Section 611.357(d) may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:

i) The supplier may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in subsection (c) of this Section after it has completed two subsequent six-month rounds of monitoring that meet the criteria of subsection (d)(4)(B) of this Section and the supplier has received written approval from the Agency by a SEP pursuant to Section 611.110 that it is appropriate to resume reduced monitoring on an annual frequency. This sampling must begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

ii) The supplier may resume monitoring for lead and copper once every three years at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (d)(4)(C) or (d)(4)(E) of this Section and the system has received a SEP under Section 611.110 from the Agency that it is appropriate to resume monitoring once every three years.

iii) The supplier may reduce the number of water quality parameter tap water samples required in accordance with Section 611.357(e)(1) and the frequency with which it collects such samples in accordance with Section 611.357(e)(2). Such a system may not resume monitoring once every three years for water quality parameters at the tap until it demonstrates, in accordance with the requirements of Section 611.357(e)(2), that it has re-qualified for monitoring once every three years.

BOARD NOTE: Subsections (d)(4)(H) and (d)(4)(H)(i) through (d)(4)(H)(iii) are derived from the last sentence of 40 CFR 141.86(d)(4)(vi)(B) and 40 CFR 141.86(d)(4)(vi)(B)(*1*) through (d)(4)(vi)(B)(*3*) ~~(2003)~~ (2007), since Illinois Administrative Code codification requirements allow only four indent levels of subsections.

e) Additional monitoring. The results of any monitoring conducted in addition to the minimum requirements of this Section must be considered by the supplier and the Agency in making any determinations (i.e., calculating the 90th percentile lead action level or the copper level) under this Subpart G.

f) Invalidation of lead or copper tap water samples. A sample invalidated under this subsection does not count toward determining lead or copper 90th percentile levels under Section 611.350(c)(3) or toward meeting the minimum monitoring requirements of subsection (c) of this Section.

1) The Agency must invalidate a lead or copper tap water sample if it determines that one of the following conditions exists:

A) The laboratory establishes that improper sample analysis caused erroneous results;

B) The sample was taken from a site that did not meet the site selection criteria of this Section;

C) The sample container was damaged in transit; or

D) There is substantial reason to believe that the sample was subject to tampering.

2) The supplier must report the results of all samples to the Agency and all supporting documentation for samples the supplier believes should be invalidated.

3) To invalidate a sample under subsection (f)(1) of this Section, the decision and the rationale for the decision must be documented in writing. The Agency may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

4) The water supplier must collect replacement samples for any samples invalidated under this Section if, after the invalidation of one or more samples, the supplier has too few samples to meet the minimum requirements of subsection (c) of this Section. Any such replacement samples must be taken as soon as possible, but no later than 20 days after the date the Agency invalidates the sample or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period must not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples must be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

g) Monitoring waivers for small system suppliers. Any small system supplier that meets the criteria of this subsection (g) may apply to the Agency to reduce the frequency of monitoring for lead and copper under this Section to once every nine years (i.e., a “full waiver”) if it meets all of the materials criteria specified in subsection (g)(1) of this Section and all of the monitoring criteria specified in subsection (g)(2) of this Section. Any small system supplier that meets the criteria in subsections (g)(1) and (g)(2) of this Section only for lead, or only for copper, may apply to the State for a waiver to reduce the frequency of tap water monitoring to once every nine years for that contaminant only (i.e., a “partial waiver”).

1) Materials criteria. The supplier must demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials or

copper-containing materials, as those terms are defined in this subsection (g)(1), as follows:

A) Lead. To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead (i.e., a "lead waiver"), the water supplier must provide certification and supporting documentation to the Agency that the system is free of all lead-containing materials, as follows:

i) It contains no plastic pipes that contain lead plasticizers, or plastic service lines that contain lead plasticizers; and

ii) It is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless such fittings and fixtures meet the specifications of NSF Standard 61, section 9, incorporated by reference in Section 611.102.

BOARD NOTE: Corresponding 40 CFR 141.86(g)(1)(i)(B) specifies "any standard established pursuant to 42 USC 300g-6(e) (SDWA section 1417(e))." USEPA has stated that the NSF standard is that standard. See 62 Fed. Reg. 44684 (Aug. 22, 1997).

B) Copper. To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper (i.e., a "copper waiver"), the water supplier must provide certification and supporting documentation to the Agency that the system contains no copper pipes or copper service lines.

2) Monitoring criteria for waiver issuance. The supplier must have completed at least one six-month round of standard tap water monitoring for lead and copper at sites approved by the Agency and from the number of sites required by subsection (c) of this Section and demonstrate that the 90th percentile levels for any and all rounds of monitoring conducted since the system became free of all lead-containing or copper-containing materials, as appropriate, meet the following criteria:

A) Lead levels. To qualify for a full waiver, or a lead waiver, the supplier must demonstrate that the 90th percentile lead level does not exceed 0.005 mg/ℓ.

B) Copper levels. To qualify for a full waiver, or a copper waiver, the supplier must demonstrate that the 90th percentile copper level does not exceed 0.65 mg/ℓ.

3) State approval of waiver application. The Agency must notify the supplier of its waiver determination by a SEP issued pursuant to Section 611.110, in writing, setting forth the basis of its decision and any condition of the waiver. As a condition of the waiver, the Agency may require the supplier to perform specific activities (e.g., limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver) to avoid the risk of lead or copper concentration of concern in tap water. The small system supplier must continue monitoring for lead and copper at the tap as required by subsections (d)(1) through (d)(4) of this Section, as appropriate, until it receives written notification from the Agency that the waiver has been approved.

4) Monitoring frequency for suppliers with waivers.

A) A supplier with a full waiver must conduct tap water monitoring for lead and copper in accordance with subsection (d)(4)(D) of this Section at the reduced number of sampling sites identified in subsection (c) of this Section at least once every nine years and provide the materials certification specified in subsection (g)(1) of this Section for both lead and copper to the Agency along with the monitoring results. Samples collected every nine years must be collected no later than every ninth calendar year.

B) A supplier with a partial waiver must conduct tap water monitoring for the waived contaminant in accordance with subsection (d)(4)(D) of this Section at the reduced number of sampling sites specified in subsection (c) of this Section at least once every nine years and provide the materials certification specified in subsection (g)(1) of this Section pertaining to the waived contaminant along with the monitoring results. Such a supplier also must continue to monitor for the non-waived contaminant in accordance with requirements of subsections (d)(1) through (d)(4) of this Section, as appropriate.

C) ~~If a~~ Any supplier with a full or partial waiver ~~adds a new source of water or changes any water treatment, the supplier~~ must notify the Agency in writing in accordance with Section 611.360(a)(3) of any upcoming long-term change in treatment or addition of a new source, as described in that Section. The Agency must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the supplier. The Agency has the authority to require the supplier to add or modify waiver conditions (e.g., require recertification that the supplier's system is free of lead-containing or copper-containing materials, require additional rounds of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.

D) If a supplier with a full or partial waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate (e.g., as a result of new construction or repairs), the supplier must notify the Agency in writing no later than 60 days after becoming aware of such a change.

5) Continued eligibility. If the supplier continues to satisfy the requirements of subsection (g)(4) of this Section, the waiver will be renewed automatically, unless any of the conditions listed in subsection (g)(5)(A) through (g)(5)(C) of this Section occur. A supplier whose waiver has been revoked may re-apply for a waiver at such time as it again meets the appropriate materials and monitoring criteria of subsections (g)(1) and (g)(2) of this Section.

A) A supplier with a full waiver or a lead waiver no longer satisfies the materials criteria of subsection (g)(1)(A) of this Section or has a 90th percentile lead level greater than 0.005 mg/ℓ.

B) A supplier with a full waiver or a copper waiver no longer satisfies the materials criteria of subsection (g)(1)(B) of this Section or has a 90th percentile copper level greater than 0.65 mg/ℓ.

C) The State notifies the supplier, in writing, that the waiver has been revoked, setting forth the basis of its decision.

6) Requirements following waiver revocation. A supplier whose full or partial waiver has been revoked by the Agency is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

A) If the supplier exceeds the lead or copper action level, the supplier must implement corrosion control treatment in accordance with the deadlines specified in Section 611.351(e), and any other applicable requirements of this Subpart G.

B) If the supplier meets both the lead and the copper action level, the supplier must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of ~~sample~~ sampling sites specified in subsection (c) of this Section.

7) Pre-existing waivers. Small system supplier waivers approved by the Agency in writing prior to April 11, 2000 must remain in effect under the following conditions:

A) If the supplier has demonstrated that it is both free of lead-containing and copper-containing materials, as required by subsection (g)(1) of this Section and that its 90th percentile lead levels and 90th percentile copper levels meet the criteria of subsection (g)(2) of this Section, the waiver remains in effect so long as the supplier continues to meet the waiver eligibility criteria of subsection (g)(5) of this Section. The first round of tap water monitoring conducted pursuant to subsection (g)(4) of this Section must be completed no later than nine years after the last time the supplier monitored for lead and copper at the tap.

B) If the supplier has met the materials criteria of subsection (g)(1) of this Section but has not met the monitoring criteria of subsection (g)(2) of this Section, the supplier must conduct a round of monitoring for lead and copper at the tap demonstrating that it met the criteria of subsection (g)(2) of this Section no later than September 30, 2000. Thereafter, the waiver must remain in effect as long as the supplier meets the continued eligibility criteria of subsection (g)(5) of this Section. The first round of tap water monitoring conducted pursuant to subsection (g)(4) of this Section must be completed no later than nine years after the round of monitoring conducted pursuant to subsection (g)(2) of this Section.

BOARD NOTE: Derived from 40 CFR 141.86 ~~(2003)~~ (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.357 Monitoring for Water Quality Parameters

All large system suppliers, and all small- and medium-sized system suppliers that exceed the lead action level or the copper action level, must monitor water quality parameters in addition to lead and copper in accordance with this Section. The requirements of this Section are summarized in Table G of this Part.

a) General Requirements.

1) Sample collection methods.

A) Use of tap samples. The totality of all tap samples collected by a supplier must be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the supplier, and seasonal variability. Although a supplier may conveniently conduct tap sampling for water quality parameters at sites used for coliform sampling performed pursuant to Subpart L of this Part, it is not required to do so, and a supplier is not required to perform tap sampling pursuant to this Section at taps targeted for lead and copper sampling under Section 611.356(a).

B) Use of entry point samples. Each supplier must collect samples at entry points to the distribution system from locations representative of each source after treatment. If a supplier draws water from more than one source and the sources are combined before distribution, the supplier must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

2) Number of samples.

A) Tap samples. Each supplier must collect two tap samples for applicable water quality parameters during each six-month monitoring period specified under subsections (b) through (e) of this Section from the number of sites indicated in the first column of Table E of this Part.

B) Entry point samples.

i) Initial monitoring. Except as provided in subsection (c)(3) of this Section, each supplier must collect two samples for each applicable water quality parameter at each entry point to the distribution system during each six-month monitoring period specified in subsection (b) of this Section.

ii) Subsequent monitoring. Each supplier must collect one sample for each applicable water quality parameter at each entry point to the distribution system during each six-month monitoring period specified in subsections (c) through (e) of this Section.

b) Initial Sampling.

1) Large systems. Each large system supplier must measure the applicable water quality parameters specified in subsection (b)(3) of this Section at taps and at each entry point to the distribution system during each six-month monitoring period specified in Section 611.356(d)(1).

2) Small- and medium-sized systems. Each small- and medium-sized system supplier must measure the applicable water quality parameters specified in subsection (b)(3) of this Section at the locations specified in this

subsection during each six-month monitoring period specified in Section 611.356(d)(1) during which the supplier exceeds the lead action level or the copper action level.

3) Water quality parameters.

  A) pH;

  B) Alkalinity;

  C) Orthophosphate, when an inhibitor containing a phosphate compound is used;

  D) Silica, when an inhibitor containing a silicate compound is used;

  E) Calcium;

  F) Conductivity; and

  G) Water temperature.

c) Monitoring after installation of corrosion control.

1) Large systems. Each large system supplier that installs optimal corrosion control treatment pursuant to Section 611.351(d)(4) must measure the water quality parameters at the locations and frequencies specified in subsections (c)(4) and (c)(5) of this Section during each six-month monitoring period specified in Section 611.356(d)(2)(A).

2) Small- and medium-sized systems. Each small- or medium-sized system that installs optimal corrosion control treatment pursuant to Section 611.351(e)(5) must measure the water quality parameters at the locations and frequencies specified in subsections (c)(4) and (c)(5) of this Section during each six-month monitoring period specified in Section 611.356(d)(2)(B) in which the supplier exceeds the lead action level or the copper action level.

3) Any groundwater system can limit entry point sampling described in subsection (c)(2) of this Section to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated groundwater sources mixes with water from treated groundwater sources, the system must monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any monitoring under this subsection, the system must provide to the Agency written information identifying the selected entry points and

documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

4) Tap water samples, two samples at each tap for each of the following water quality parameters:

A) pH;

B) Alkalinity;

C) Orthophosphate, when an inhibitor containing a phosphate compound is used;

D) Silica, when an inhibitor containing a silicate compound is used; and

E) Calcium, when calcium carbonate stabilization is used as part of corrosion control.

5) Entry point samples, except as provided in subsection (c)(3) of this Section, one sample at each entry point to the distribution system every two weeks (bi-weekly) for each of the following water quality parameters:

A) pH;

B) When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and

C) When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

d) Monitoring after the Agency specifies water quality parameter values for optimal corrosion control.

1) Large system suppliers. After the Agency has specified the values for applicable water quality control parameters reflecting optimal corrosion control treatment pursuant to Section 611.352(f), each large system supplier must measure the applicable water quality parameters in accordance with subsection (c) of this Section and determine compliance with the requirements of Section 611.352(g) every six months with the first six-month period to begin on ~~the date~~ either January 1 or July 1, whichever comes first, after the ~~State~~ Agency specifies the optimal values

under Section 611.352(f).

2) Small- and medium-sized system suppliers. Each small- or medium-sized system supplier must conduct such monitoring during each six-month monitoring period specified in this subsection (d) in which the supplier exceeds the lead action level or the copper action level. For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to Section 611.356(d)(4) at the time of the action level exceedence, the ~~end~~ start of the applicable six-month monitoring period under this subsection (d) must coincide with the ~~end~~ start of the applicable monitoring period under Section 611.356(d)(4).

3) Compliance with Agency-designated optimal water quality parameter values must be determined as specified under Section 611.352(g).

e) Reduced monitoring.

1) Reduction in tap monitoring. A supplier that has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under subsection (d) of this Section must continue monitoring at the entry points to the distribution system as specified in subsection (c)(4) of this Section. Such a supplier may collect two samples from each tap for applicable water quality parameters from the reduced number of sites indicated in the second column of Table E of this Part during each subsequent six-month monitoring period.

2) Reduction in monitoring frequency.

A) Staged reductions in monitoring frequency.

i) Annual monitoring. A supplier that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified pursuant to Section 611.352(f) during three consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subsection (e)(1) of this Section from every six months to annually. This reduced sampling may only begin during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs.

ii) Triennial monitoring. A supplier that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified pursuant to

Section 611.352(f) during three consecutive years of annual monitoring under subsection (e)(2)(A)(i) of this Section may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subsection (e)(1) of this Section from annually to once every three years. This reduced sampling may only begin no later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.

B) A water supplier may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in subsection (e)(1) of this Section to every three years if it demonstrates ~~the following~~ that it has fulfilled the conditions set forth in subsections (e)(2)(B)(i) through (e)(2)(B)(iii) of this Section during two consecutive monitoring periods~~:~~, subject to the limitation of subsection (e)(2)(B)(iv) of this Section.

i) ~~That~~ The supplier must demonstrate that its tap water lead level at the 90th percentile is less than or equal to the PQL for lead specified in Section 611.359(a)(1)(B);

ii) ~~That~~ The supplier must demonstrate that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/ℓ for copper in Section 611.350(c)(2); and

iii) ~~That~~ The supplier must demonstrate that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the Agency under Section 611.352(f).

iv) Monitoring conducted every three years must be done no later than every third calendar year.

3) A supplier that conducts sampling annually or every three years must collect these samples evenly throughout the calendar year so as to reflect seasonal variability.

4) Any supplier subject to a reduced monitoring frequency pursuant to this subsection that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified pursuant to Section 611.352(f) for more than nine days in any six-month period specified in Section 611.352(g) must resume tap water sampling in accordance with the number and frequency requirements of subsection (d) of this Section. Such a system may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in

subsection (e)(1) of this Section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of that subsection or may resume monitoring once every three years for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subsection (e)(2)(A) or (e)(2)(B) of this Section.

f) Additional monitoring by suppliers. The results of any monitoring conducted in addition to the minimum requirements of this Section must be considered by the supplier and the Agency in making any determinations (i.e., determining concentrations of water quality parameters) under this Section or Section 611.352.

BOARD NOTE: Derived from 40 CFR 141.87 ~~(2002)~~ (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.358 Monitoring for Lead and Copper in Source Water

a) Sample location, collection methods, and number of samples.

1) A supplier that fails to meet the lead action level or the copper action level on the basis of tap samples collected in accordance with Section 611.356 must collect lead and copper source water samples in accordance with the following requirements regarding sample location, number of samples, and collection methods:

A) A groundwater supplier must take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment (hereafter called a sampling point). The supplier must take one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

B) A surface water supplier must take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point that is representative of each source after treatment (hereafter called a sampling point). The system must take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

BOARD NOTE: For the purposes of this subsection (a)(1)(B), surface water systems include systems with a combination of surface and ground sources.

C) If a supplier draws water from more than one source and the sources are combined before distribution, the supplier must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

D) The Agency may, by a SEP issued pursuant to Section 611.110, reduce the total number of samples that must be analyzed by allowing the use of compositing. Compositing of samples must be done by certified laboratory personnel. Composite samples from a maximum of five samples are allowed, provided that if the lead concentration in the composite sample is greater than or equal to 0.001 mg/ℓ or the copper concentration is greater than or equal to 0.160 mg/ℓ, then the supplier must do either of the following:

i) The supplier must take and analyze a follow-up sample within 14 days at each sampling point included in the composite; or

ii) If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the supplier may use these instead of resampling.

2) SEP requiring an additional sample.

A) When the Agency determines that the results of sampling indicate an exceedence of the lead or copper MPC established under Section 611.353(b)(4), it must, by a SEP issued pursuant to Section 611.110, require the supplier to collect one additional sample as soon as possible after the initial sample at the same sampling point, but no later than two weeks after the supplier took the initial sample.

B) If a supplier takes an Agency-required confirmation sample for lead or copper, the supplier must average the results obtained from the initial sample with the results obtained from the confirmation sample in determining compliance with the Agency-specified lead and copper MPCs.

i) Any analytical result below the MDL must be considered as zero for the purposes of averaging.

ii) Any value above the MDL but below the PQL must either be considered as the measured value or be considered one-half the PQL.

b) Monitoring frequency after system exceeds tap water action level. A supplier that exceeds the lead action level or the copper action level in tap sampling must collect one source water sample from each entry point to the distribution system ~~within~~ no later than six months after the ~~exceedence.~~ end of the monitoring period during which the lead or copper action level was exceeded. For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the Agency has established an alternate monitoring period by a SEP issued pursuant to Section 611.110, the last day of that period.

c) Monitoring frequency after installation of source water treatment. A supplier that installs source water treatment pursuant to Section 611.353(a)(3) must collect an additional source water sample from each entry point to the distribution system during each of two consecutive six-month monitoring periods on or before 36 months after completion of step 2, as specified in Section 611.353(a)(4).

d) Monitoring frequency after the Agency has specified the lead and copper MPCs or has determined that source water treatment is not needed.

1) A supplier must monitor at the frequency specified by subsection (d)(1)(A) or (d)(1)(B) of this Section where the Agency has specified the MPCs pursuant to Section 611.353(b)(4) or has determined that the supplier is not required to install source water treatment pursuant to Section 611.353(b)(2).

A) GWS suppliers.

i) A GWS supplier required to sample by subsection (d)(1) of this Section must collect samples once during the three-year compliance period (as that term is defined in Section 611.101) during which the Agency makes its determination pursuant to Section 611.353(b)(4) or 611.353(b)(2).

ii) A GWS supplier required to sample by subsection (d)(1) of this Section must collect samples once during each subsequent compliance period.

iii) Triennial samples must be collected every third calendar year.

B) A SWS or mixed system supplier must collect samples ~~annually~~ once during each calendar year, the first annual monitoring period to begin ~~on the date on~~ during the year in which the Agency makes its determination pursuant to Section 611.353(b)(4) or 611.353(b)(2).

2) A supplier is not required to conduct source water sampling for lead or copper if the supplier meets the action level for the specific contaminant in all tap water samples collected during the entire source water sampling period applicable under subsection (d)(1)(A) or (d)(1)(B) of this Section.

e) Reduced monitoring frequency.

1) A GWS supplier may reduce the monitoring frequency for lead and copper in source water to once during each nine-year compliance cycle (as that term is defined in Section 611.101), provided that the samples are collected no later than every ninth calendar year, and only if the supplier meets one of the following criteria:

A) The supplier demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in Section 611.353(b)(4) during at least three consecutive compliance periods under subsection (d)(1) of this Section; or

B) The Agency has determined, by a SEP issued pursuant to Section 611.110, that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under subsection (d)(1) of this Section, the concentration of lead in source water was less than or equal to 0.005 mg/ℓ and the concentration of copper in source water was less than or equal to 0.65 mg/ℓ.

2) A SWS or mixed system supplier may reduce the monitoring frequency in subsection (d)(1) of this Section to once during each nine-year compliance cycle (as that term is defined in Section 611.101), provided that the samples are collected no later than every ninth calendar year, and only if the supplier meets one of the following criteria:

A) The supplier demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the Agency under Section 611.353(b)(4) for at least three consecutive years; or

B) The Agency has determined, by a SEP issued pursuant to Section 611.110, that source water treatment is not needed and the supplier demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/ℓ and the concentration of copper in source water was less than or equal to 0.65 mg/ℓ.

3) A supplier that uses a new source of water is not eligible for reduced monitoring for lead or copper until it demonstrates by samples collected from the new source during three consecutive monitoring periods, of the appropriate duration provided by subsection (d)(1) of this Section, that lead or copper concentrations are below the MPC as specified by the Agency pursuant to Section 611.353(a)(4).

BOARD NOTE: Derived from 40 CFR 141.88 ~~(2003)~~ (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.359 Analytical Methods

Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature must be conducted using the methods set forth in Section 611.611(a).

a) Analyses for lead and copper performed for the purposes of compliance with this Subpart G must only be conducted by laboratories that have been certified by USEPA or the Agency. To obtain certification to conduct analyses for lead and copper, laboratories must do the following:

1) Analyze performance evaluation samples that include lead and copper provided by USEPA Environmental Monitoring and Support Laboratory or equivalent samples provided by the Agency; and

2) Achieve quantitative acceptance limits as follows:

A) For lead: ±30 percent of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.005 mg/ℓ (the PQL for lead is 0.005 mg/ℓ);

B) For copper: ±10 percent of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.050 mg/ℓ (the PQL for copper is 0.050 mg/ℓ);

C) Achieve the method detection limit (MDL) for lead (0.001 mg/ℓ, as defined in Section 611.350(a)) according to the procedures in 35 Ill. Adm. Code 186 and appendix B to 40 CFR 136: "Definition and Procedure for the Determination of the Method Detection Limit—Revision 1.11" ~~(2005)~~, incorporated by reference in Section 611.102(c). This need only be accomplished if the laboratory will be processing source water composite samples under Section ~~611.358(a)(1)(C)~~ 611.358(a)(1)(D); and

D) Be currently certified by USEPA or the Agency to perform analyses to the specifications described in subsection ~~(a)(2)~~ (a)(1) of this Section.

BOARD NOTE: Subsection (a) is derived from 40 CFR 141.89(a) and (a)(1) ~~(2005)~~ (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007).

b) The Agency must, by a SEP issued pursuant to Section 611.110, allow a supplier to use previously collected monitoring data for the purposes of monitoring under this Subpart G if the data were collected and analyzed in accordance with the requirements of this Subpart G.

BOARD NOTE: Subsection (b) is derived from 40 CFR 141.89(a)(2) ~~(2005)~~ (2007).

c) Reporting lead and copper levels.

1) All lead and copper levels greater than or equal to the lead and copper PQL (Pb ≥ 0.005 mg/ℓ and Cu ≥ 0.050 mg/ℓ) must be reported as measured.

2) All lead and copper levels measured less than the PQL and greater than the MDL (0.005 mg/ℓ > Pb > MDL and 0.050 mg/ℓ > Cu > MDL) must be either reported as measured or as one-half the PQL set forth in subsection (a) of this Section (i.e., reported as 0.0025 mg/ℓ for lead or 0.025 mg/ℓ for copper).

3) All lead and copper levels below the lead and copper MDL (MDL > Pb) must be reported as zero.

BOARD NOTE: Subsection (c) is derived from 40 CFR 141.89(a)(3) and (a)(4) ~~(2005)~~ (2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.360 Reporting

A supplier must report all of the following information to the Agency in accordance with this Section.

a) Reporting for tap, lead, and copper, and water quality parameter monitoring.

1) Except as provided in subsection (a)(1)(viii) of this Section, a supplier must report the following information for all samples specified in Section 611.356 and for all water quality parameter samples specified in Section 611.357 within ten days of the end of each applicable sampling period

specified in Sections 611.356 and 611.357 (i.e., every six months, annually, every three years, or every nine years). For a monitoring period with a duration less than six months, the end of the monitoring period is the last date on which samples can be collected during that period, as specified in Sections 611.356 and 611.357.

A) The results of all tap samples for lead and copper, including the location of each site and the criteria under Section 611.356(a)(3) through (a)(7) under which the site was selected for the supplier's sampling pool;

B) Documentation for each tap water lead or copper sample for which the water supplier requests invalidation pursuant to Section 611.356(f)(2);

C) This subsection (a)(1)(C) corresponds with 40 CFR 141.90(a)(1)(iii), a provision that USEPA removed and marked "reserved." This statement preserves structural parity with the federal rules;

D) The 90th percentile lead and copper concentrations measured from among all lead and copper tap samples collected during each sampling period (calculated in accordance with Section 611.350(c)(3)), unless the Agency calculates the system's 90th percentile lead and copper levels under subsection (h) of this Section;

E) With the exception of initial tap sampling conducted pursuant to Section 611.356(d)(1), the supplier must designate any site that was not sampled during previous sampling periods, and include an explanation of why sampling sites have changed;

F) The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected pursuant to Section 611.357(b) through (e);

G) The results of all samples collected at entry points for applicable water quality parameters pursuant to Section 611.357(b) through (e).

H) A water supplier must report the results of all water quality parameter samples collected under Section 611.357(c) through (f) during each six-month monitoring period specified in Section 611.357(d) within the first 10 days following the end of the monitoring period, unless the Agency has specified, by a SEP granted pursuant to Section 611.110, a more frequent reporting requirement.

2) For a NTNCWS supplier, or a CWS supplier meeting the criteria of Sections ~~611.355(c)(7)(A) and (c)(7)(B)~~ 611.355(b)(7)(A) and (b)(7)(B), that does not have enough taps which can provide first-draw samples, the supplier must do either of the following:

A) Provide written documentation to the Agency that identifies standing times and locations for enough non-first-draw samples to make up its sampling pool under Section 611.356(b)(5) by the start of the first applicable monitoring period under Section 611.356(d) that commenced after April 11, 2000, unless the Agency has waived prior Agency approval of non-first-draw ~~sample~~ sampling sites selected by the supplier pursuant to Section 611.356(b)(5); or

B) If the Agency has waived prior approval of non-first-draw ~~sample~~ sampling sites selected by the supplier, identify, in writing, each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to Section 611.356(b)(5) and include this information with the lead and copper tap sample results required to be submitted pursuant to subsection (a)(1)(A) of this Section.

3) ~~No later than 60 days after~~ At a time specified by the Agency, by a SEP issued pursuant to Section 611.110, or if no specific time is designated by the Agency, then as early as possible prior to the addition of a new source or any change in water treatment, ~~unless the Agency requires earlier notification,~~ a water supplier deemed to have optimized corrosion control under Section 611.351(b)(3), a water supplier subject to reduced monitoring pursuant to Section 611.356(d)(4), or a water supplier subject to a monitoring waiver pursuant to Section 611.356(g), must ~~send~~ submit written documentation to the Agency describing the change or addition. ~~In those instances where prior Agency approval of the treatment change or new source is not required, USEPA has stated that it encourages water systems to provide the notification to the Agency beforehand to minimize the risk the treatment change or new source will adversely affect optimal corrosion control.~~

4) Any small system supplier applying for a monitoring waiver under Section 611.356(g), or subject to a waiver granted pursuant to Section 611.356(g)(3), must provide the following information to the Agency in writing by the specified deadline:

A) By the start of the first applicable monitoring period in Section 611.356(d), any small water system supplier applying for a monitoring waiver must provide the documentation required to demonstrate that it meets the waiver criteria of Sections 611.356(g)(1) and (g)(2).

B) No later than nine years after the monitoring previously conducted pursuant to Section 611.356(g)(2) or Section 611.356(g)(4)(A), each small system supplier desiring to maintain its monitoring waiver must provide the information required by Sections 611.356(g)(4)(A) and (g)(4)(B).

C) No later than 60 days after it becomes aware that it is no longer free of lead-containing or copper-containing material, as appropriate, each small system supplier with a monitoring waiver must provide written notification to the Agency, setting forth the circumstances resulting in the lead-containing or copper-containing materials being introduced into the system and what corrective action, if any, the supplier plans to remove these materials.

D) By October 10, 2000, any small system supplier with a waiver granted prior to April 11, 2000 and that had not previously met the requirements of Section 611.356(g)(2) must have provided the information required by that subsection.

5) Each GWS supplier that limits water quality parameter monitoring to a subset of entry points under Section 611.357(c)(3) must provide, by the commencement of such monitoring, written correspondence to the Agency that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

b) Reporting for source water monitoring.

1) A supplier must report the sampling results for all source water samples collected in accordance with Section 611.358 within ten days of the end of each source water sampling period (i.e., annually, per compliance period, per compliance cycle) specified in Section 611.358.

2) With the exception of the first round of source water sampling conducted pursuant to Section 611.358(b), a supplier must specify any site that was not sampled during previous sampling periods, and include an explanation of why the sampling point has changed.

c) Reporting for corrosion control treatment. By the applicable dates under Section 611.351, a supplier must report the following information:

1) For a supplier demonstrating that it has already optimized corrosion

control, the information required by Section 611.352(b)(2) or (b)(3).

2) For a supplier required to optimize corrosion control, its recommendation regarding optimal corrosion control treatment pursuant to Section 611.352(a).

3) For a supplier required to evaluate the effectiveness of corrosion control treatments pursuant to Section 611.352(c), the information required by Section 611.352(c).

4) For a supplier required to install optimal corrosion control approved by the Agency pursuant to Section 611.352(d), a copy of the Agency permit letter, which acts as certification that the supplier has completed installing the permitted treatment.

d) Reporting for source water treatment. On or before the applicable dates in Section 611.353, a supplier must provide the following information to the Agency:

1) If required by Section 611.353(b)(1), its recommendation regarding source water treatment; or

2) For suppliers required to install source water treatment pursuant to Section 611.353(b)(2), a copy of the Agency permit letter, which acts as certification that the supplier has completed installing the treatment approved by the Agency within 24 months after the Agency approved the treatment.

e) Reporting for lead service line replacement. A supplier must report the following information to the Agency to demonstrate compliance with the requirements of Section 611.354:

1) ~~Within 12 months after~~ No later than 12 months after the end of a monitoring period in which a supplier exceeds the lead action level in sampling referred to in Section 611.354(a), the supplier must ~~report~~ submit each of the following to the Agency in writing:

A) ~~A demonstration that it has conducted a materials evaluation, including the~~ The material evaluation conducted as required by Section 611.356(a);

B) Identify the initial number of lead service lines in its distribution system at the time the supplier exceeds the lead action level; and

C) Provide the Agency with the supplier's schedule for annually replacing at least seven percent of the initial number of lead service lines in its distribution system.

2) ~~Within~~ No later than 12 months after the end of a monitoring period in which a supplier exceeds the lead action level in sampling referred to in Section 611.354(a), and every 12 months thereafter, the supplier must demonstrate to the Agency in writing that the supplier has done either of the following:

A) ~~Replaced~~ That the supplier has replaced, in the previous 12 months, at least seven percent of the initial number of lead service lines in its distribution system (or any greater number of lines specified by the Agency pursuant to Section 611.354(e)); or

B) ~~Conducted~~ That the supplier has conducted sampling that demonstrates that the lead concentration in all service line samples from individual lines, taken pursuant to Section 611.356(b)(3), is less than or equal to 0.015 mg/ℓ. This demonstration requires that the total number of lines that the supplier has replaced, combined with the total number that meet the criteria of Section 611.354(c), must equal at least seven percent of the initial number of lead lines identified pursuant to subsection (e)(1) of this Section (or the percentage specified by the Agency pursuant to Section 611.354(e)).

~~C) Where the supplier makes a demonstration under subsection (e)(2)(B) of this Section, the total number of lines that the supplier has replaced, combined with the total number that meet the criteria of Section 611.354(b), must equal at least seven percent of the initial number of lead lines identified pursuant to subsection (a) of this Section (or the percentage specified by the Agency pursuant to Section 611.354(e)).~~

3) The annual letter submitted to the Agency pursuant to subsection (e)(2) of this Section must contain the following information:

A) The number of lead service lines originally scheduled to be replaced during the previous year of the supplier's replacement schedule;

B) The number and location of each lead service line actually replaced during the previous year of the supplier's replacement schedule; and

C) If measured, the water lead concentration from each lead service line sampled pursuant to Section 611.356(b)(3) and the location of each lead service line sampled, the sampling method used, and the date of sampling.

4) Any supplier that collects lead service line samples following partial lead service line replacement required by Section 611.354 must report the results to the Agency within the first ten days of the month following the month in which the supplier receives the laboratory results, or as specified by the Agency. The Agency may, by a SEP granted pursuant to Section 611.110, eliminate this requirement to report these monitoring results. A supplier must also report any additional information as specified by the Agency, and in a time and manner prescribed by the Agency, to verify that all partial lead service line replacement activities have taken place.

f) Reporting for public education program.

1) Any water supplier that is subject to the public education requirements in Section 611.355 must, within ten days after the end of each period in which the supplier is required to perform public education ~~tasks~~ in accordance with Section ~~611.355(c)~~ 611.355(b), send written documentation to the Agency that contains the following:

A) A demonstration that the supplier has delivered the public education materials that meet the content requirements in Sections 611.355(a) ~~and (b)~~ and the delivery requirements in Section ~~611.355(c)~~ 611.355(b); and

B) A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the supplier delivered public education materials during the period in which the supplier was required to perform public education tasks.

2) Unless required by the Agency, by a SEP issued pursuant to Section 611.110, a supplier that previously has submitted the information required by subsection (f)(1)(B) of this Section need not resubmit the information required by subsection (f)(1)(B) of this Section, as long as there have been no changes in the distribution list and the supplier certifies that the public education materials were distributed to the same list submitted previously.

3) No later than three months following the end of the monitoring period, each supplier must mail a sample copy of the consumer notification of tap results to the Agency, along with a certification that the notification has been distributed in a manner consistent with the requirements of Section 611.355(d).

g) Reporting of additional monitoring data. Any supplier that collects sampling data in addition to that required by this Subpart G must report the results of that sampling to the Agency within the first ten days following the end of the applicable sampling periods specified by Sections 611.356 through 611.358 during which the samples are collected.

h) Reporting of 90th percentile lead and copper concentrations where the Agency calculates a system's 90th percentile concentrations. A water supplier is not required to report the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, as required by subsection (a)(1)(D) of this Section if the following is true:

1) The Agency has previously notified the water supplier that it will calculate the water system's 90th percentile lead and copper concentrations, based on the lead and copper tap results submitted pursuant to subsection (h)(2)(A) of this Section, and has specified a date before the end of the applicable monitoring period by which the supplier must provide the results of lead and copper tap water samples;

2) The supplier has provided the following information to the Agency by the date specified in subsection (h)(1) of this Section:

A) The results of all tap samples for lead and copper including the location of each site and the criteria under Section 611.356(a)(3), (a)(4), (a)(5), (a)(6), or (a)(7) under which the site was selected for the system's sampling pool, pursuant to subsection (a)(1)(A) of this Section; and

B) An identification of sampling sites utilized during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed; and

3) The Agency has provided the results of the 90th percentile lead and copper calculations, in writing, to the water supplier before the end of the monitoring period.

BOARD NOTE: Derived from 40 CFR 141.90 ~~(2003)~~ (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

SUBPART I: 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~~ alternative methods approved by the Agency pursuant to Section 611.480 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:

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.

BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entry for HAA5 by liquid-liquid extraction (diazomethane), gas chromatography, electron capture detector, in the table at corresponding 40 CFR 141.131(b)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 6251 B (as approved in 1994). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 6251 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 6251 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

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~~ 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~~ 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~~ 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.

BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entry for chlorite by amperometric titration, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-ClO_2 E (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-ClO_2 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-ClO_2

E from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

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 Section 611.382(b)(2)(A)(ii) and (b)(2)(B).

2) 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 Sections 611.312 and 611.381 and Subparts W and Y of this Part, the laboratory must 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 subsection corresponds with 40 CFR 141.131(b)(2)(ii), which has expired by its own terms. This statement maintains structural consistency with the corresponding federal rule.

C) The laboratory must achieve quantitative results on the PE sample analyses that are within the acceptance limits set forth in subsections (b)(2)(C)(i) through (b)(2)(B)(xi) of this Section, subject to the conditions of subsections (b)(2)(C)(xii) and (b)(2)(C)(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 Agency.

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 listed in subsections (c)(1)(A) through (c)(1)(D) of this Section, subject to the provisions of subsection (c)(1)(E) of this Section:

    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 E;

      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.

BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entries for free chlorine, combined chlorine, and chlorine dioxide in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-Cl D, E, F, G, H, or I or Method 4500-ClO_2 E (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 4500-Cl and Method 4500-ClO_2 that appear in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-Cl D, E, F, G, H, or I or Method 4500-ClO_2 E from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

2) Test strips.

A) ITS Method D99-003.

BOARD NOTE: USEPA added ITS Method D99-003 as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) 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:

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), 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).

BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entries for total organic carbon, high-temperature combustion, persulfate-ultraviolet or heated persulfate, and wet oxidation at corresponding 40 CFR 141.131(d)(3) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 5310 B, C, or D (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 5310 B, C, or D that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 5310 B, C, or D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

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), Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method), or Method 5310 D (Wet-Oxidation Method) or USEPA NERL Method 415.3 (rev. 1.1). Prior to analysis, DOC samples must be filtered through 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 after 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.; and

BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entries for specific ultraviolet absorbance-dissolved organic carbon at corresponding 40 CFR 141.131(d)(4)(i) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 5310 B, C, or D (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 5310 B, C, or D that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 5310 B, C, or D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

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

BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entries for specific ultraviolet absorbance-ultraviolet absorption at 254 nm at corresponding 40 CFR 141.131(d)(4)(ii) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 5910 B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 5910 B that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 5910 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

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 ~~(2006)~~ (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3, 2008).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.480 Alternative Analytical Techniques

The Agency ~~may~~ must approve, by a SEP issued pursuant to Section 611.110, an ~~alternate~~ alternative analytical technique if it determines that USEPA has approved the method as an alternative method by adding it to 40 CFR 141 and the Board has not incorporated the federal approval into this Part 611. The Agency must not approve an ~~alternate~~ alternative analytical technique without the concurrence of USEPA. ~~The Agency must approve an alternate technique if it is substantially equivalent to the prescribed test in both precision and accuracy as it relates to the determination of compliance with any MCL.~~ The use of the ~~alternate~~ alternative analytical technique must not decrease the frequency of monitoring required by this Part.

BOARD NOTE: Derived from 40 CFR 141.27 ~~(2002)~~ (2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.526 Analytical Methodology

a) The standard sample volume required for total coliform analysis, regardless of analytical method used, is 100 mℓ.

b) Suppliers need only determine the presence or absence of total coliforms; a determination of total coliform density is not required.

c) Suppliers must conduct total coliform analyses in accordance with one of the following analytical methods, incorporated by reference in Section 611.102, or in accordance with an alternative method approved by the Agency pursuant to Section 611.480 (the time from sample collection to initiation of analysis may not exceed 30 hours, and the supplier is encouraged but not required to hold samples below 10° C during transit):

1) Total Coliform Fermentation Technique, as set forth in Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Methods 9221 A and B, as follows:

A) Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth if the supplier conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested and this comparison demonstrates that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than 10 percent;

B) If inverted tubes are used to detect gas production, the media should cover these tubes at least one-half to two-thirds after the sample is added; and

C) No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes.

2) Total Coliform Membrane Filter Technique, as set forth in Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Methods 9222 A, B, and C.

3) Presence-Absence (P-A) Coliform Test, as set forth in: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 9221 D, as follows:

A) No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes; and

B) Six-times formulation strength may be used if the medium is filter-sterilized rather than autoclaved.

4) ONPG-MUG test: Standard Methods, 18th, 19th, 20th, or 21st ed.~~, or from Standard Methods Online~~: Method 9223. (The ONPG-MUG test is also known as the Autoanalysis Colilert System.)~~.~~

5) Colisure Test (Autoanalysis Colilert System). (The Colisure Test may be read after an incubation time of 24 hours.)

BOARD NOTE: USEPA included the P-A Coliform and Colisure Tests for testing finished water under the coliform rule, but did not include them for the purposes of the surface water treatment rule, under Section 611.531, for which quantitation of total coliforms is necessary. For these reasons, USEPA included Standard Methods: Method 9221 C for the surface water treatment rule, but did not include it for the purposes of the total coliform rule, under this Section.

6) E*Colite® Test (Charm Sciences, Inc.).

7) m-ColiBlue24® Test (Hatch Company).

8) Readycult Coliforms 100 Presence/Absence Test.

9) Membrane Filter Technique using Chromocult Coliform Agar.

10) Colitag® Test.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended note 1 to the table at corresponding 40 CFR 141.21(f)(3) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 9221 A, B, and D (as approved in 1999) or Method 9222 A, B, and C (as approved in 1997); and 9223 B (as approved in 1997). The Board has cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods) for Methods 9221 and 9223, since the cited versions of the methods appears in that reference. USEPA later added Method 9221 A, B, and D; Method 9222 A, B, and C; Method 9223 from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

d) This subsection corresponds with 40 CFR 141.21(f)(4), which USEPA has marked "reserved." This statement maintains structural consistency with the federal regulations.

e) Suppliers must conduct fecal coliform analysis in accordance with the following procedure:

1) When the MTF Technique or P-A Coliform Test is used to test for total coliforms, shake the lactose-positive presumptive tube or P-A vigorously and transfer the growth with a sterile 3-mm loop or sterile applicator stick into brilliant green lactose bile broth and EC medium, defined below, to determine the presence of total and fecal coliforms, respectively.

2) For approved methods that use a membrane filter, transfer the total coliform-positive culture by one of the following methods: remove the membrane containing the total coliform colonies from the substrate with sterile forceps and carefully curl and insert the membrane into a tube of EC medium; (the laboratory may first remove a small portion of selected colonies for verification); swab the entire membrane filter surface with a sterile cotton swab and transfer the inoculum to EC medium (do not leave the cotton swab in the EC medium); or inoculate individual total coliform-positive colonies into EC medium. Gently shake the inoculated tubes of EC medium to insure adequate mixing and incubate in a waterbath at 44.5±0.2° C for 24±2 hours. Gas production of any amount in the inner fermentation tube of the EC medium indicates a positive fecal coliform test.

3) EC medium is described in Standard Methods, 18th ed., 19th ed., and 20th ed.: Method 9221 E.

4) Suppliers need only determine the presence or absence of fecal coliforms; a determination of fecal coliform density is not required.

f) Suppliers must conduct analysis of E. coli in accordance with one of the following analytical methods, incorporated by reference in Section 611.102:

1) EC medium supplemented with 50 µg/ℓ of MUG (final concentration). EC medium is as described in subsection (e) of this Section. MUG may be added to EC medium before autoclaving. EC medium supplemented with 50 µg/ℓ MUG is commercially available. At least 10 mℓ of EC medium supplemented with MUG must be used. The inner inverted fermentation tube may be omitted. The procedure for transferring a total coliform-positive culture to EC medium supplemented with MUG is as in subsection (e) of this Section for transferring a total coliform-positive culture to EC medium. Observe fluorescence with an ultraviolet light (366 nm) in the dark after incubating tube at 44.5±2° C for 24±2 hours; or

2) Nutrient agar supplemented with 100 µg/ℓ MUG (final concentration), as described in Standard Methods, 19th ed. and 20th ed.: Method 9222 G. This test is used to determine if a total coliform-positive sample, as determined by the MF technique, contains E. coli. Alternatively, Standard Methods, 18th ed.: Method 9221 B may be used if the membrane filter containing a total coliform-positive colony or colonies is transferred to nutrient agar, as described in Method 9221 B (paragraph 3), supplemented with 100 µg/ℓ MUG. If Method 9221 B is used, incubate the agar plate at 35° Celsius for four hours, then observe the colony or colonies under ultraviolet light (366-nm) in the dark for fluorescence. If fluorescence is visible, E. coli are present.

3) Minimal Medium ONPG-MUG (MMO-MUG) Test, as set forth in Appendix D of this Part. (The Autoanalysis Colilert System is a MMO-MUG test.) If the MMO-MUG test is total coliform positive after a 24-hour incubation, test the medium for fluorescence with a 366-nm ultraviolet light (preferably with a six-watt lamp) in the dark. If fluorescence is observed, the sample is E. coli-positive. If fluorescence is questionable (cannot be definitively read) after 24 hours incubation, incubate the culture for an additional four hours (but not to exceed 28 hours total), and again test the medium for fluorescence. The MMO-MUG test with hepes buffer is the only approved formulation for the detection of E. coli.

4) The Colisure Test (Autoanalysis Colilert System).

5) The membrane filter method with MI agar.

6) The E*Colite® Test.

7) The m-ColiBlue24® Test.

8) Readycult Coliforms 100 Presence/Absence Test.

9) Membrane Filter Technique using Chromocult Coliform Agar.

10) Colitag® Test.

g) As an option to the method set forth in subsection (f)(3) of this Section, a supplier with a total coliform-positive, MUG-negative, MMO-MUG test may further analyze the culture for the presence of E. coli by transferring a 0.1 mℓ, 28-hour MMO-MUG culture to EC medium + MUG with a pipet. The formulation and incubation conditions of the EC medium + MUG, and observation of the results, are described in subsection (f)(1) of this Section.

h) This subsection corresponds with 40 CFR 141.21(f)(8), a central listing of all documents incorporated by reference into the federal microbiological analytical methods. The corresponding Illinois incorporations by reference are located at Section 611.102. This statement maintains structural parity with USEPA regulations.

BOARD NOTE: Derived from 40 CFR 141.21(f) ~~(2003)~~ (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3, 2008).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.531 Analytical Requirements

The analytical methods specified in this Section, or alternative methods approved by the Agency pursuant to Section 611.480, must be used to demonstrate compliance with the requirements of only 611.Subpart B; they do not apply to analyses performed for the purposes of Sections 611.521 through 611.527 of this Subpart L. Measurements for pH, temperature, turbidity, and RDCs must be conducted under the supervision of a certified operator. Measurements for total coliforms, fecal coliforms and HPC must be conducted by a laboratory certified by the Agency to do such analysis. The following procedures must be performed by the following methods, incorporated by reference in Section 611.102:

a) A supplier shall do as follows:

1) Conduct analyses of pH in accordance with one of the methods listed at Section 611.611; and

2) Conduct analyses of total coliforms, fecal coliforms, heterotrophic bacteria, and turbidity in accordance with one of the following methods, and by using analytical test procedures contained in USEPA Technical Notes, incorporated by reference in Section 611.102, as follows:

A) Total Coliforms.

BOARD NOTE: The time from sample collection to initiation of analysis for source (raw) water samples required by Sections 611.521 and 611.532 and Subpart B of this Part only must not exceed eight hours. The supplier is encouraged but not required to hold samples below 10° C during transit.

i) Total coliform fermentation technique: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 9221 A, B, and C.

BOARD NOTE: Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth if the supplier conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested and this comparison demonstrates that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than 10 percent. If inverted tubes are used to detect gas production, the media should cover these tubes at least one-half to two-thirds after the sample is added. No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes.

ii) Total coliform membrane filter technique: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 9222 A, B, and C.

iii) ONPG-MUG test (also known as the Autoanalysis Colilert System): Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 9223.

BOARD NOTE: USEPA included the P-A Coliform and Colisure Tests for testing finished water under the coliform rule, under Section 611.526, but did not include them for the purposes of the surface water treatment rule, under this Section, for which quantitation of total coliforms is necessary. For these reasons, USEPA included Standard Methods: Method 9221 C for the surface water treatment rule, but did not include it for the purposes of the total coliform rule, under Section 611.526.

B) Fecal Coliforms.

BOARD NOTE: The time from sample collection to initiation of analysis for source (raw) water samples required by Sections 611.521 and 611.532 and Subpart B of this Part only must not exceed eight hours. The supplier is encouraged but not required to hold samples below 10° C during transit.

i) Fecal coliform procedure: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 9221 E.

BOARD NOTE: A-1 broth may be held up to ~~three months~~ seven days in a tightly closed screwcap tube at 4° C (39° F).

ii) Fecal Coliform Membrane Filter Procedure: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 9222 D.

C) Heterotrophic bacteria.

i) Pour plate method: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 9215 B.

BOARD NOTE: The time from sample collection to initiation of analysis must not exceed eight hours. The supplier is encouraged but not required to hold samples below 10° C during transit.

ii) SimPlate method.

D) Turbidity.

BOARD NOTE: Styrene divinyl benzene beads (*e.g.* AMCO-AEPA–1 or equivalent) and stabilized formazin (*e.g.*, Hach StablCal™ or equivalent) are acceptable substitutes for formazin.

i) Nephelometric method: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 2130 B.

ii) Nephelometric method: USEPA Environmental Inorganic Methods: Method 180.1

iii) GLI Method 2.

iv) Hach FilterTrak Method 10133.

E) Temperature: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 2550.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for total coliforms, fecal coliforms, heterotrophic bacteria, turbidity, and temperature at corresponding 40 CFR 141.74(a)(1) to allow the use of

Standard Methods Online (at www.standardmethods.org), Method 2130 B (as approved in 2001); Method 9215 B (as approved in 2000); Method 9221 A, B, and C (as approved in 1999); Method 9222 A, B, C, and D (as approved in 1997); and Method 9223 B (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 2130, Method 9215, Method 9221, Method 9222, and Method 9223 that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 2130 B; Method 9215 B; Method 9221 A, B, C, and E; Method 9222 A, B, C, and D; and Method 9223 from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

b) A supplier must measure residual disinfectant concentrations with one of the following analytical methods~~ from Standard Methods, 18th, 19th, or 20th ed. (the method for ozone, Method 4500-O3 B, appears only in the 18th and 19th editions)~~:

1) Free chlorine.

A) Amperometric Titration~~: Method 4500-Cl D~~.

i) Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-Cl D.

ii) ASTM Method D 1253-03.

B) DPD Ferrous Titrimetric: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-Cl F.

C) DPD Colimetric: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-Cl G.

D) Syringaldazine (FACTS): Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-Cl H.

2) Total chlorine.

A) Amperometric Titration:~~ Method 4500-Cl D~~.

i) Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-Cl D.

ii) ASTM Method D 1253-03.

B) Amperometric Titration (low level measurement): Standard

Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-Cl E.

C) DPD Ferrous Titrimetric: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-Cl F.

D) DPD Colimetric: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-Cl G.

E) Iodometric Electrode: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-Cl I.

3) Chlorine dioxide.

A) Amperometric Titration: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-ClO_2 C or E.

B) DPD Method: Standard Methods, 18th, 19th, or 20th, ed.: Method 4500-ClO_2 D.

C) Spectrophotometric: USEPA OGWDW Methods, Method 327.0.

4) Ozone: Indigo Method: Standard Methods, 18th, 19th, 20th, or 21st ed.: Method 4500-O_3 B.

5) Alternative test methods: The Agency may grant a SEP pursuant to Section 611.110 that allows a supplier to use alternative chlorine test methods as follows:

A) DPD colorimetric test kits: Residual disinfectant concentrations for free chlorine and combined chlorine may also be measured by using DPD colorimetric test kits.

B) Continuous monitoring for free and total chlorine: Free and total chlorine residuals may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument, provided the chemistry, accuracy, and precision remain the same. Instruments used for continuous monitoring must be calibrated with a grab sample measurement at least every five days or as otherwise provided by the Agency.

BOARD NOTE: Suppliers may use a five-tube test or a 10-tube test.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for free chlorine, total chlorine, chlorine dioxide, and ozone at corresponding 40 CFR 141.74(a)(2) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-Cl D, E, F, G, and H (as approved in 2000); Method 4500-ClO_2 C and E (as approved in 2000); and Method 4500-O_3 B (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 4500-Cl, Method 4500-ClO_2, and Method 4500-O_3 that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 4500-Cl D, E, F, G, and H; Method 4500-ClO_2 C and E; and Method 4500-O_3 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

BOARD NOTE: Derived from 40 CFR 141.74(a) ~~(2002)~~ (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3, 2008).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.600 Applicability

The following types of suppliers must conduct monitoring to determine compliance with the old MCLs in Section 611.300 and the revised MCLs in 611.301, as appropriate, in accordance with this Subpart N:

a) CWS suppliers.

b) NTNCWS suppliers.

c) Transient non-CWS suppliers to determine compliance with the nitrate and nitrite MCLs.

d) Detection limits. The following are detection limits for purposes of this Subpart N (MCLs from Section 611.301 are set forth for information purposes only):

Contaminant	MCL (mg/ℓ, except asbestos)	Method	Detection Limit (mg/ℓ)
Antimony	0.006	Atomic absorption-furnace technique	0.003
		Atomic absorption-furnace technique (stabilized temperature)	0.0008[5]
		~~Inductively-coupled~~ Inductively coupled plasma-	0.0004

		mass spectrometry	
		Atomic absorption-gaseous hydride technique	0.001
Arsenic	0.010[6]	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized temperature)	0.00005[7]
		Atomic absorption-gaseous hydride technique	0.001
		~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry	0.0014[8]
Asbestos	7 MFL[1]	Transmission electron microscopy	0.01 MFL
Barium	2	Atomic absorption-furnace technique	0.002
		Atomic absorption-direct aspiration technique	0.1
		~~Inductively-coupled~~ Inductively coupled plasma arc furnace	0.002
		~~Inductively-coupled~~ Inductively coupled plasma	0.001
Beryllium	0.004	Atomic absorption-furnace technique	0.0002
		Atomic absorption-furnace technique (stabilized temperature)	0.00002[5]
		~~Inductively-coupled~~ Inductively coupled plasma[2]	0.0003
		~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry	0.0003
Cadmium	0.005	Atomic absorption-furnace technique	0.0001
		~~Inductively-coupled~~ Inductively coupled plasma	0.001
Chromium	0.1	Atomic absorption-furnace technique	0.001

		~~Inductively-coupled~~ Inductively coupled plasma	0.007
		~~Inductively-coupled~~ Inductively coupled plasma	0.001
Cyanide	0.2	Distillation, spectrophotometric[3]	0.02
		Automated distillation, spectrophotometric[3]	0.005
		Distillation, selective electrode[3]	0.05
		Distillation, amenable, spectrophotometric[4]	0.02
		UV, distillation, spectrophotometric[9]	0.0005
		~~Distillation,~~ Micro distillation, flow injection, spectrophotometric[3]	0.0006
		Ligand exchange with amperometry[4]	0.0005
Mercury	0.002	Manual cold vapor technique	0.0002
		Automated cold vapor technique	0.0002
Nickel	No MCL	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized temperature)	0.0006[5]
		~~Inductively-coupled~~ Inductively coupled plasma[2]	0.005
		~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry	0.0005
Nitrate (as N)	10	Manual cadmium reduction	0.01
		Automated hydrazine reduction	0.01
		Automated cadmium reduction	0.05
		Ion-selective electrode	1
		Ion chromatography	0.01
		Capillary ion electrophoresis	0.076
Nitrite (as N)	1	Spectrophotometric	0.01

		Automated cadmium reduction	0.05
		Manual cadmium reduction	0.01
		Ion chromatography	0.004
		Capillary ion electrophoresis	0.103
Selenium	0.05	Atomic absorption-furnace technique	0.002
		Atomic absorption-gaseous hydride technique	0.002
Thallium	0.002	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized temperature)	0.0007[5]
		~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry	0.0003

Footnotes.

1 "MFL" means millions of fibers per liter less than 10 μm.

2 Using a 2× preconcentration step as noted in Method 200.7. Lower MDLs may be achieved when using a 4× preconcentration.

3 Screening method for total cyanides.

4 Measures "free" cyanides when distillation, digestion, or ligand exchange is omitted.

5 Lower MDLs are reported using stabilized temperature graphite furnace atomic ~~absorbtion~~ absorption.

6 The value for arsenic is effective January 23, 2006. Until then, the MCL is 0.05 mg/ℓ.

7 The MDL reported for USEPA Method 200.9 (atomic absorption-platform furnace (stabilized temperature)) was determined using a 2× concentration step during sample digestion. The MDL determined for samples analyzed using direct analyses (i.e., no sample digestion) will be higher. Using multiple depositions, USEPA Method 200.9 is capable of obtaining an MDL of 0.0001 mg/ℓ.

8 Using selective ion monitoring, USEPA Method 200.8 (ICP-MS) is capable of obtaining an MDL of 0.0001 mg/ℓ.

9 Measures total cyanides when UV-digestor is used, and "free" cyanides when UV-digestor is bypassed.

BOARD NOTE: Subsections (a) through (c) of this Section are derived from 40 CFR 141.23 preamble ~~(2003)~~ (2007), and subsection (d) of this Section is derived from 40 CFR 141.23(a)(4)(i) ~~(2003)~~ (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3, 2008). See the Board Note at Section 611.301(b) relating to the MCL for nickel.

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.611 Inorganic Analysis

Analytical methods are from documents incorporated by reference in Section 611.102. These are mostly referenced by a short name defined by Section 611.102(a). Other abbreviations are defined in Section 611.101.

a) Analysis for the following contaminants must be conducted using the following methods or an alternative method approved pursuant to Section 611.480. Criteria for analyzing arsenic, chromium, copper, lead, nickel, selenium, sodium, and thallium with digestion or directly without digestion, and other analytical procedures, are contained in USEPA Technical Notes, incorporated by reference in Section 611.102. ~~(This document also contains approved analytical test methods that remained available for compliance monitoring until July 1, 1996. These methods are not available for use after July 1, 1996.)~~

BOARD NOTE: Because MDLs reported in USEPA Environmental Metals Methods 200.7 and 200.9 were determined using a 2× preconcentration step during sample digestion, MDLs determined when samples are analyzed by direct analysis (i.e., no sample digestion) will be higher. For direct analysis of cadmium and arsenic by USEPA Environmental Metals Method 200.7, and arsenic by Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed., Method 3120 B sample preconcentration using pneumatic nebulization may be required to achieve lower detection limits. Preconcentration may also be required for direct analysis of antimony, lead, and thallium by USEPA Environmental Metals Method 200.9; antimony and lead by Standard Methods, 18th, ~~or~~ 19th, or 21st ed., Method 3113 B; and lead by ASTM Method D3559-96 D or D3559-03 D unless multiple in-furnace depositions are made.

1) Alkalinity.

A) Titrimetric.

i) ASTM Method D1067-92 B or D1067-02 B; or

ii) Standard Methods, 18th, 19th~~, or~~ 20th, or 21st ed.: Method 2320 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for alkalinity by titrimetric alkalinity in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 2320 B (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 2320 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 2320 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) Electrometric titration: USGS Methods: Method I-1030-85.

2) Antimony.

A) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

B) Atomic absorption, hydride technique: ASTM Method D3697-92 or D3697-02.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, furnace technique: Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for antimony by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

3) Arsenic.

BOARD NOTE: If ultrasonic nebulization is used in the determination of arsenic by Methods 200.7, 200.8, or Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed., 3120 B, the arsenic must be in the pentavalent state to provide uniform signal response. For methods 200.7 and 3120 B, both samples and standards must be diluted in the same mixed acid matrix concentration of nitric and hydrochloric acid with the addition of 100 µℓ of 30% hydrogen peroxide per 100 mℓ of solution. For direct analysis of arsenic with method 200.8 using ultrasonic nebulization, samples and standards must contain one mg/ℓ of sodium hypochlorite.

A) ~~Inductively-coupled~~ Inductively coupled plasma.

BOARD NOTE: Effective January 23, 2006, a supplier may no longer employ analytical methods using the ICP-AES technology because the detection limits for these methods are 0.008 mg/ℓ or higher. This restriction means that the two ICP-AES methods (USEPA Environmental Metals Method 200.7 and Standard Methods, Method 3120 B) approved for use for the MCL of 0.05 mg/ℓ may not be used for compliance determinations for the revised MCL of 0.010 mg/ℓ. However, prior to the 2005 through 2007 compliance period, a supplier may have compliance samples analyzed with these less sensitive methods.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for arsenic by inductively coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method for several other metals in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA, however, did not specifically add Method

2130 B as to arsenic in the June 3, 2008 action.

B) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, furnace technique.

i) ASTM Method D2972-97 C or 2972-03 C; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for arsenic by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Atomic absorption, hydride technique.

i) ASTM Method D2972-97 B or 2972-03 B; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3114 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for antimony by atomic absorption, hydride technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3114 B (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3114 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3114 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

F) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

4) Asbestos: Transmission electron microscopy: USEPA Asbestos Methods-100.1 and USEPA Asbestos Methods-100.2.

5) Barium.

A) ~~Inductively-coupled~~ Inductively coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for barium by inductively coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, direct aspiration technique: Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3111 D.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for barium by atomic absorption, direct aspiration technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 D (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3111 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3111 D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

D) Atomic absorption, furnace technique: Standard Methods, 18th, 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for barium by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

6) Beryllium.

A) ~~Inductively-coupled~~ Inductively coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for beryllium by inductively coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, furnace technique.

i) ASTM Method D3645-97 B or D3645-03 B; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for beryllium by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

7) Cadmium.

A) ~~Inductively-coupled~~ Inductively coupled plasma arc furnace: USEPA Environmental Metals Methods: Method 200.7.

B) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, furnace technique: Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for cadmium by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

8) Calcium.

A) EDTA titrimetric.

i) ASTM Method D511-93 A or D511-03 A; or

ii) Standard Methods, 18th~~,~~ or 19th~~, or 20th~~ ed.: Method 3500-Ca D or Standard Methods, 20th or 21st ed.: Method 3500-Ca B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for calcium by EDTA titrimetric in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3500-Ca D (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3500-Ca that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3500-Ca B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) Atomic absorption, direct aspiration.

i) ASTM Method D511-93 B or D511-03 B; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3111 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for calcium by atomic absorption, direct aspiration in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3111 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3111 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) ~~Inductively-coupled~~ Inductively coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for calcium by inductively coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

D) Ion chromatography: ASTM Method D6919-03.

E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

9) Chromium.

A) ~~Inductively-coupled~~ Inductively coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for chromium by inductively coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, furnace technique: Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for chromium by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

10) Copper.

A) Atomic absorption, furnace technique.

i) ASTM Method D1688-95 C or D1688-02 C; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113

B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for copper by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) Atomic absorption, direct aspiration.

i) ASTM Method D1688-95 A or 1688-02 A; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3111 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for copper by atomic absorption, direct aspiration in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3111 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3111 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) ~~Inductively-coupled~~ Inductively coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for copper by inductively coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

D) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

E) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

F) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

11) Conductivity; Conductance.

A) ASTM Method D1125-95(1999) A; or

B) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 2510 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for conductivity by conductance in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 2510 B (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 2510 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 2510 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

12) Cyanide.

A) Manual distillation (ASTM Method D2036-98 A or Standard Methods, 18th, 19th, or 20th ed.: Method 4500-CN$^-$ C), followed by spectrophotometric, amenable.

i) ASTM Method D2036-98 B or 2036-06 B; or

BOARD NOTE: USEPA added ASTM Method 2036-06 A as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-CN$^-$ G.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for cyanide by spectrophotometric, amenable, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-CN$^-$ G (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-CN$^-$ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-CN$^-$ G from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) Manual distillation (ASTM Method D2036-98 A or Standard Methods, 18th, 19th, or 20th ed.: Method 4500-CN$^-$ C), followed by spectrophotometric, manual.

i) ASTM Method D2036-98 A or 2036-06 A;

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-CN$^-$ E; or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for cyanide by spectrophotometric, manual, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-CN$^-$ E (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-CN$^-$ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-CN$^-$ E from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

iii) USGS Methods: Method I-3300-85.

C) ~~Manual distillation (ASTM Method D2036-98 A or Standard Methods, 18th, 19th, or 20th ed.: Method 4500-CN$^-$ C), followed by semiautomated spectrophotometric:~~ Spectrophotometric, semiautomated: USEPA Environmental Inorganic Methods: Method 335.4.

D) Selective electrode: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-CN$^-$ F.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for cyanide by selective electrode in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-CN$^-$ F (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-CN$^-$ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-CN$^-$ F from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) UV/Distillation/Spectrophotometric: Kelada 01.

F) ~~Distillation/Spectrophotometric:~~ Microdistillation/Flow Injection/Spectrophotometric: QuickChem 10-204-00-1-X.

G) Ligand exchange and amperometry.

i) ASTM Method D6888-03.

ii) OI Analytical Method OIA-1677 DW.

13) Fluoride.

A) Ion Chromatography.

i) USEPA Environmental Inorganic Methods: Method 300.0~~,~~ or Method 300.1;

ii) ASTM Method D4327-97 or D4327-03; or

iii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4110 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for fluoride by ion chromatography in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4110 B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4110 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4110 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) Manual distillation, colorimetric SPADNS: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-F^- B and D.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for fluoride by manual distillation, colorimetry SPADNS, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-F^- B and D (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-F^- that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-F^- B and D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) Manual electrode.

i) ASTM Method D1179-93 B, D1179-99 B, or D1179-04 B; or

BOARD NOTE: USEPA added ASTM Method D1179-04 B as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-F$^-$ C.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for fluoride by manual electrode in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-F$^-$ C (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-F$^-$ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-F$^-$ C from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

D) Automated electrode: Technicon Methods: Method 380-75WE.

E) Automated alizarin.

i) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-F$^-$ E; or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for fluoride by automated alizarin in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-F$^-$ E (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-F$^-$ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-F$^-$ E from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

ii) Technicon Methods: Method 129-71W.

F) Capillary ion electrophoresis: ASTM Method D6508-00(2005).

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for fluoride to add capillary ion electrophoresis in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of "Waters Method D6508, Rev. 2." The Board attempt to locate a copy of the method disclosed that it is an ASTM method originally approved in 2000 and reapproved in 2005. The Board has cited to the ASTM Method D6508-00(2005).

14) Lead.

A) Atomic absorption, furnace technique.

i) ASTM Method D3559-96 D or D3559-03 D; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for lead by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Differential Pulse Anodic Stripping Voltammetry: Palintest Method 1001.

E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

15) Magnesium.

A) Atomic absorption.

i) ASTM Method D511-93 B or D511-03 B; or

ii) Standard Methods, 18th~~,~~ ~~or~~ 19th, or 21st ed.: Method 3111 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for magnesium by atomic absorption in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3111 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3111 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) ~~Inductively-coupled~~ Inductively coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.

11200), USEPA amended the entry for magnesium by inductively coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) Complexation titrimetric.

i) ASTM Method D511-93 A or D511-03 A; or

ii) Standard Methods, 18th or 19th ed.: Method 3500-Mg E or Standard Methods, 20th or 21st ed.: Method 3500-Mg B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for magnesium by complexation titrimetric in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3500-Mg B (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3500-Mg that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3500-Mg B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

~~iii) Standard Methods, 20th ed.: Method 3500-Mg B.~~

D) Ion chromatography: ASTM Method D6919-03.

E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

16) Mercury.

A) Manual cold vapor technique.

i) USEPA Environmental Metals Methods: Method 245.1;

ii) ASTM Method D3223-97 or D3223-02; or

iii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3112 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for mercury by manual cold vapor technique in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3112 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3112 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3112 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) Automated cold vapor technique: USEPA Inorganic Methods: Method 245.2.

C) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

17) Nickel.

A) ~~Inductively-coupled~~ Inductively coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nickel by inductively coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, direct aspiration technique: Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3111 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nickel by atomic absorption, direct aspiration technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3111 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3111 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Atomic absorption, furnace technique: Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nickel by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard

Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

F) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

18) Nitrate.

A) Ion chromatography.

i) USEPA Environmental Inorganic Methods: Method 300.0 or Method 300.1;

ii) ASTM Method D4327-97 or D4327-03;

iii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4110 B; or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrate by ion chromatography in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4110 B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4110 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4110 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

iv) Waters Test Method B-1011, available from Millipore Corporation.

B) Automated cadmium reduction.

i) USEPA Environmental Inorganic Methods: Method 353.2;

ii) ASTM Method D3867-90 A; or

iii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-NO_3^- F.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrate by automated cadmium reduction in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-NO_3^- F (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-NO_3^- that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-NO_3^- F from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) Ion selective electrode.

i) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-NO_3^- D; or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrate by ion selective electrode in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-NO_3^- D (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-NO_3^- that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-NO_3^- D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

ii) Technical Bulletin 601.

D) Manual cadmium reduction.

i) ASTM Method D3867-90 B; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-NO$_3^-$ E.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrate by manual cadmium reduction in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-NO$_3^-$ E (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-NO$_3^-$ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-NO$_3^-$ E from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Capillary ion electrophoresis: ASTM Method D6508-00(2005).

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrate to add capillary ion electrophoresis in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of "Waters Method D6508, Rev. 2." The Board attempt to locate a copy of the method disclosed that it is an ASTM method originally approved in 2000 and reapproved in 2005. The Board has cited to the ASTM Method D6508-00(2005).

19) Nitrite.

A) Ion chromatography.

i) USEPA Environmental Inorganic Methods: Method 300.0 or Method 300.1;

ii) ASTM Method D4327-97 or D4327-03;

iii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4110 B; or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrite by ion chromatography in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4110 B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4110 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4110 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

iv) Waters Test Method B-1011, available from Millipore Corporation.

B) Automated cadmium reduction.

i) USEPA Environmental Inorganic Methods: Method 353.2;

ii) ASTM Method D3867-90 A; or

iii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method $4500\text{-}NO_3^-$ F.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrite by automated cadmium reduction in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method $4500\text{-}NO_3^-$ F (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method $4500\text{-}NO_3^-$ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method $4500\text{-}NO_3^-$ F from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) Manual cadmium reduction.

i) ASTM Method D3867-90 B; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method $4500\text{-}NO_3^-$ E.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrite by manual cadmium reduction in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-NO_3^- E (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-NO_3^- that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-NO_3^- E from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

D) Spectrophotometric: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-NO_2^- B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrite by spectrophotometric in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-NO_2^- B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-NO_2^- that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-NO_2^- B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Capillary ion electrophoresis: ASTM Method D6508-00(2005).

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrite to add capillary ion electrophoresis in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of “Waters Method D6508, Rev. 2.” The Board attempt to locate a copy of the method disclosed that it is an ASTM method originally approved in 2000 and reapproved in 2005. The Board has cited to the ASTM Method D6508-00(2005).

20) Orthophosphate (unfiltered, without digestion or hydrolysis).

A) Automated colorimetric, ascorbic acid.

i) USEPA Environmental Inorganic Methods: Method 365.1; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-P F.

BOARD NOTE: USEPA added Method 4500-P F from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA also added Method 4500-P F (as approved in 1999) as available from Standard Methods Online (at www.standardmethods.org). The Board has instead cited only to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-P F that appears in the printed volume is the 1999 version available from the online source.

B) Single reagent colorimetric, ascorbic acid.

i) ASTM Method D515-88 A; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4500-P E.

BOARD NOTE: USEPA added Method 4500-P E from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA also added Method 4500-P E (as approved in 1999) as available from Standard Methods Online (at www.standardmethods.org). The Board has instead cited only to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-P E that appears in the printed volume is the 1999 version available from the online source.

C) Colorimetric, phosphomolybdate: USGS Methods: Method I-1601-85.

D) Colorimetric, phosphomolybdate, automated-segmented flow: USGS Methods: Method I-2601-90.

E) Colorimetric, phosphomolybdate, automated discrete: USGS Methods: Method I-2598-85.

F) Ion Chromatography.

i) USEPA Environmental Inorganic Methods: Method 300.0 or Method 300.1;

ii) ASTM Method D4327-97 or D4327-03; or

iii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 4110 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for orthophosphate by ion chromatography in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4110 B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4110 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4110 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

G) Capillary ion electrophoresis: ASTM Method D6508-00(2005).

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for orthophosphate to add capillary ion electrophoresis in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of "Waters Method D6508, Rev. 2." The Board attempt to locate a copy of the method disclosed that it is an ASTM method originally approved in 2000 and reapproved in 2005. The Board has cited to the ASTM Method D6508-00(2005).

21) pH: electrometric.

~~A) Electrometric.~~

~~i~~A) USEPA Inorganic Methods: Method 150.1 or Method 150.2;

~~ii~~B) ASTM Method D1293-95 or D1293-99; or

~~iii~~C) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method ~~4500-H+~~ 4500-H^+ B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for pH by electrometric in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-H^+ B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-H^+ that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-H^+ B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

~~B) USEPA Inorganic Methods: Method 150.2.~~

22) Selenium.

A) Atomic absorption, hydride.

i) ASTM Method D3859-98 A or D3859-03 A; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3114 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for selenium by atomic absorption, hydride, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3114 B (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3114 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3114 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

D) Atomic absorption, furnace technique.

i) ASTM Method D3859-98 B or D3859-03 B; or

ii) Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3113 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for selenium by atomic absorption, furnace technique, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3113 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3113 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3113 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

23) Silica.

A) Colorimetric, molybdate blue: USGS Methods: Method I-1700-85.

B) Colorimetric, molybdate blue, automated-segmented flow: USGS Methods: Method I-2700-85.

C) Colorimetric: ASTM Method ~~D859-95~~ D859-94, D859-00, or D859-05.

BOARD NOTE: USEPA added ASTM Method D859-05 as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

D) Molybdosilicate: Standard Methods, 18th or 19th ed.: Method 4500-Si D or Standard Methods, 20th or 21st ed.: Method ~~4500-Si~~ 4500-SiO_2 C.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for silica by molybdosilicate in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-SiO_2 C (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-SiO_2 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-SiO_2 C from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Heteropoly blue: Standard Methods, 18th or 19th ed.: Method 4500-Si E or Standard Methods, 20th or 21st ed.: Method ~~4500-Si~~ 4500-SiO_2 D.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for silica by heteropoly blue in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-SiO_2 D (as approved in 1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-SiO_2 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-SiO_2 D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

F) Automated method for molybdate-reactive silica: Standard Methods, 18th or 19th ed.: Method 4500-Si F or Standard Methods, 20th or 21st ed.: Method ~~4500-Si~~ 4500-SiO_2 E.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for silica by automated method for molybdate-reactive silica in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-SiO_2 E (as approved in

1997). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-SiO_2 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-SiO_2 E from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

G) ~~Inductively-coupled~~ Inductively coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

ii) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for silica by inductively coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

H) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

24) Sodium.

A) ~~Inductively-coupled~~ Inductively coupled plasma: USEPA Environmental Metals Methods: Method 200.7.

B) Atomic absorption, direct aspiration: Standard Methods, 18th, ~~or~~ 19th, or 21st ed.: Method 3111 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for sodium by atomic absorption, direct aspiration, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3111 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3111 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) Ion chromatography: ASTM Method D6919-03.

D) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

25) Temperature; thermometric: Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 2550.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for temperature by thermometric in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 2550 (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 2550 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 2550 from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

26) Thallium.

A) ~~Inductively-coupled~~ Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

B) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.

b) Sample collection for antimony, arsenic (effective January 22, 2004), asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium pursuant to Sections 611.600 through 611.604 must be conducted using the following sample preservation, container, and maximum holding time procedures:

BOARD NOTE: For cyanide determinations samples must be adjusted with sodium hydroxide to pH 12 at the time of collection. When chilling is indicated the sample must be shipped and stored at 4° C or less. Acidification of nitrate or metals samples may be with a concentrated acid or a dilute (50% by volume) solution of the applicable concentrated acid. Acidification of samples for metals analysis is encouraged and allowed at the laboratory rather than at the time of sampling provided the shipping time and other instructions in Section 8.3 of USEPA Environmental Metals Method 200.7, 200.8, or 200.9 are followed.

1) Antimony.

   A) Preservative: Concentrated nitric acid to pH less than 2.

   B) Plastic or glass (hard or soft).

   C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

2) Arsenic.

   A) Preservative: Concentrated nitric acid to pH less than 2.

   B) Plastic or glass (hard or soft).

   C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

3) Asbestos.

   A) Preservative: Cool to 4° C.

   B) Plastic or glass (hard or soft).

   C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.

4) Barium.

   A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

5) Beryllium.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

6) Cadmium.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

7) Chromium.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

8) Cyanide.

A) Preservative: Cool to 4° C. Add sodium hydroxide to pH greater than 12. See the analytical methods for information on sample preservation.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.

9) Fluoride.

A) Preservative: None.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within one month.

10) Mercury.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 28 days.

11) Nickel.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

12) Nitrate, chlorinated.

A) Preservative: Cool to 4° C.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.

13) Nitrate, non-chlorinated.

A) Preservative: Concentrated sulfuric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.

14) Nitrite.

A) Preservative: Cool to 4° C.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.

15) Selenium.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

16) Thallium.

A) Preservative: Concentrated nitric acid to pH less than 2.

B) Plastic or glass (hard or soft).

C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

c) Analyses under this Subpart N must be conducted by laboratories that received approval from USEPA or the Agency. The Agency must certify laboratories to conduct analyses for antimony, arsenic (effective January 23, 2006), asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium if the laboratory does as follows:

1) It analyzes performance evaluation (PE) samples, provided by the Agency pursuant to 35 Ill. Adm. Code 186, that include those substances at levels not in excess of levels expected in drinking water; and

2) It achieves quantitative results on the analyses within the following acceptance limits:

A) Antimony: ± 30% at greater than or equal to 0.006 mg/ℓ.

B) Arsenic: ± 30% at greater than or equal to 0.003 mg/ℓ.

C) Asbestos: 2 standard deviations based on study statistics.

D) Barium: ± 15% at greater than or equal to 0.15 mg/ℓ.

E) Beryllium: ± 15% at greater than or equal to 0.001 mg/ℓ.

F) Cadmium: ± 20% at greater than or equal to 0.002 mg/ℓ.

G) Chromium: ± 15% at greater than or equal to 0.01 mg/ℓ.

H) Cyanide: ± 25% at greater than or equal to 0.1 mg/ℓ.

I) Fluoride: ± 10% at 1 to 10 mg/ℓ.

J) Mercury: ± 30% at greater than or equal to 0.0005 mg/ℓ.

K) Nickel: ± 15% at greater than or equal to 0.01 mg/ℓ.

L) Nitrate: ± 10% at greater than or equal to 0.4 mg/ℓ.

M) Nitrite: ± 15% at greater than or equal to 0.4 mg/ℓ.

N) Selenium: ± 20% at greater than or equal to 0.01 mg/ℓ.

O) Thallium: ± 30% at greater than or equal to 0.002 mg/ℓ.

BOARD NOTE: Derived from 40 CFR 141.23(k) ~~(2003)~~ (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3, 2008).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

Section 611.612 Monitoring Requirements for Old Inorganic MCLs

a) Analyses for the purpose of determining compliance with the old inorganic MCLs of Section 611.300 are required as follows:

1) Analyses for all CWSs utilizing surface water sources must be repeated at yearly intervals.

2) Analyses for all CWSs utilizing only groundwater sources must be repeated at three-year intervals.

3) This subsection (a)(3) corresponds with 40 CFR 141.23(1)(3), which requires monitoring for the repealed old MCL for nitrate at a frequency specified by the state. The Board has followed the USEPA lead and repealed that old MCL. This statement maintains structural consistency with USEPA rules.

4) This subsection (a)(4) corresponds with 40 CFR 141.23(1)(4), which authorizes the state to determine compliance and initiate enforcement action. This statement maintains structural consistency with USEPA

rules.

b) If the result of an analysis made under subsection (a) of this Section indicates that the level of any contaminant listed in Section 611.300 exceeds the old MCL, the supplier must report to the Agency within seven days and initiate three additional analyses at the same sampling point within one month.

c) When the average of four analyses made pursuant to subsection (b) of this Section, rounded to the same number of significant figures as the old MCL for the substance in question, exceeds the old MCL, the supplier must notify the Agency and give notice to the public pursuant to Subpart V of this Part. Monitoring after public notification must be at a frequency designated by the Agency by a SEP granted pursuant to Section 611.110 and must continue until the old MCL has not been exceeded in two successive samples or until a different monitoring schedule becomes effective as a condition to a variance, an adjusted standard, a site specific rule, an enforcement action, or another SEP granted pursuant to Section 611.110.

d) This subsection (d) corresponds with 40 CFR 141.23(o), which pertains to monitoring for the repealed old MCL for nitrate. This statement maintains structural consistency with USEPA rules.

e) This subsection (e) corresponds with 40 CFR 141.23(p), which pertains to the use of existing data up until a date long since expired. This statement maintains structural consistency with USEPA rules.

f) Except for arsenic, for which analyses must be made in accordance with Section 611.611, analyses conducted to determine compliance with the old MCLs of Section 611.300 must be made in accordance with the following methods, incorporated by reference in Section 611.102, or alternative methods approved by the Agency pursuant to Section 611.480.

1) Fluoride: The methods specified in Section 611.611(c) must apply for the purposes of this Section.

2) Iron.

A) Standard Methods.

i) Method 3111 B, 18th, ~~or~~ 19th, or 21st ed.;

ii) Method 3113 B, 18th, ~~or~~ 19th, or 21st ed.; or

iii) Method 3120 B, 18th, 19th, ~~or~~ 20th, or 21st ed.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for iron in the table at 40 CFR 143.4(b) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B, Method 3113 B, and Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 3111, Method 3113, and Method 3120 that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 3111 B, Method 3113 B, and Method 3120 B from the 21st edition of Standard Methods as approved alternative methods in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) USEPA Environmental Metals Methods.

i) Method 200.7; or

ii) Method 200.9.

C) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

3) Manganese.

A) Standard Methods.

i) Method 3111 B, 18th, ~~or~~ 19th, or 21st ed.;

ii) Method 3113 B, 18th, ~~or~~ 19th, or 21st ed.; or

iii) Method 3120 B, 18th, 19th, ~~or~~ 20th, or 21st ed.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for manganese in the table at 40 CFR 143.4(b) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B, Method 3113 B, and Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 3111, Method 3113, and Method 3120 that appear in that printed volume are those cited by

USEPA as acceptable for use. USEPA later added Method 3111 B, Method 3113 B, and Method 3120 B from the 21st edition of Standard Methods as approved alternative methods in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) USEPA Environmental Metals Methods.

i) Method 200.7;

ii) Method 200.8; or

iii) Method 200.9.

C) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

4) Zinc.

A) Standard Methods.

i) Method 3111 B, 18th, ~~or~~ 19th, or 21st ed.; or

ii) Method 3120 B, 18th, 19th, ~~or~~ 20th, or 21st ed.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for zinc in the table at 40 CFR 143.4(b) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3111 B and Method 3120 B (as approved in 1999). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 3111 and Method 3120 that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 3111 B, Method 3113 B, and Method 3120 B from the 21st edition of Standard Methods as approved alternative methods in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) USEPA Environmental Metals Methods.

i) Method 200.7; or

ii) Method 200.8.

C) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

BOARD NOTE: The provisions of subsections (a) through (f) of this Section derive from 40 CFR 141.23(l) through (p) ~~(2002)~~ (2007). Subsections (f)(2) through (f)(4) of this Section relate exclusively to additional State requirements. The Board retained subsection (f) of this Section to set forth methods for the inorganic contaminants for which there is a State-only MCL. The methods specified are those set forth in 40 CFR 143.4(b) ~~(2002)~~ (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3, 2008), for secondary MCLs.

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.645 Analytical Methods for Organic Chemical Contaminants

Analysis for the Section 611.311(a) VOCs under Section 611.646; the Section 611.311(c) SOCs under Section 611.648; the Section 611.310 old MCLs under Section 611.641; and for THMs, TTHMs, and TTHM potential must be conducted using the methods listed in this Section or by ~~equivalent~~ alternative methods as approved by the Agency pursuant to Section 611.480. All methods are from USEPA Organic Methods, unless otherwise indicated. All methods are incorporated by reference in Section 611.102. Other required analytical test procedures germane to the conduct of these analyses are contained in the USEPA document, "Technical Notes of Drinking Water Methods," incorporated by reference in Section 611.102.

Volatile Organic Chemical Contaminants (VOCs).

Contaminant	Analytical Methods
Benzene	502.2, 524.2
Carbon tetrachloride	502.2, 524.2, 551.1
Chlorobenzene	502.2, 524.2
1,2-Dichlorobenzene	502.2, 524.2
1,4-Dichlorobenzene	502.2, 524.2
1,2-Dichloroethane	502.2, 524.2
cis-Dichloroethylene	502.2, 524.2
trans-Dichloroethylene	502.2, 524.2
Dichloromethane	502.2, 524.2
1,2-Dichloropropane	502.2, 524.2

Ethylbenzene	502.2, 524.2
Styrene	502.2, 524.2
Tetrachloroethylene	502.2, 524.2, 551.1
1,1,1-Trichloroethane	502.2, 524.2, 551.1
Trichloroethylene	502.2, 524.2, 551.1
Toluene	502.2, 524.2
1,2,4-Trichlorobenzene	502.2, 524.2
1,1-Dichloroethylene	502.2, 524.2
1,1,2-Trichloroethane	502.2, 524.2
Vinyl chloride	502.2, 524.2
Xylenes (total)	502.2, 524.2

Synthetic Organic Chemical Contaminants (SOCs).

Contaminant	Analytical Methods
2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD or dioxin)	Dioxin and Furan Method 1613
2,4-D	515.2, 555, 515.1, 515.3, OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98
2,4,5-TP (Silvex)	515.2, 555, 515.1, 515.3, OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98
Alachlor	505[*1], 507, 508.1, 525.2, 551.1
Atrazine	505[*1], 507, 508.1, 525.2, 551.1, Syngenta AG-625[2]
Benzo(a)pyrene	525.2, 550, 550.1
Carbofuran	531.1, OGWDW Methods, Method 531.2, Standard Methods, 18th ed. Supplement, 19th ed., or 20th ed.: Method 6610 or Standard Methods 21st ed. or Standard Methods Online: Method 6610 B
Chlordane	505, 508, 508.1, 525.2
Dalapon	515.1, 552.1, 552.2, 515.3, OGWDW Methods, Method 515.4, OGWDW Methods, Method 552.3
Di(2-ethylhexyl)adipate	506, 525.2

Di(2-ethylhexyl)phthalate	506, 525.2
Dibromochloropropane (DBCP)	504.1, 551.1
Dinoseb	515.1, 515.2, 515.3, OGWDW Methods, Method 515.4, 555
Diquat	549.1
Endothall	548.1
Endrin	505, 508, 508.1, 525.2, 551.1
Ethylene Dibromide (EDB)	504.1, 551.1
Glyphosate	547, Standard Methods, 18th ed., 19th ed., or 20th ed.: Method 6651
Heptachlor	505, 508, 508.1, 525.2, 551.1
Heptachlor Epoxide	505, 508, 508.1, 525.2, 551.1
Hexachlorobenzene	505, 508, 508.1, 525.2, 551.1
Hexachlorocyclopentadiene	505, 508, 508.1, 525.2, 551.1
Lindane	505, 508, 508.1, 525.2, 551.1
Methoxychlor	505, 508, 508.1, 525.2, 551.1
Oxamyl	531.1, OGWDW Methods, Method 531.2, Standard Methods, 18th ed. Supplement, 19th ed., or 20th ed.: Method 6610 or Standard Methods 21st ed. or Standard Methods Online: Method 6610 B
PCBs (measured for compliance purposes as decchlorobiphenyl)	508A
PCBs (qualitatively identified as Aroclors)	505, 508, 508.1, 525.2
Pentachlorophenol	515.1, 515.2, 525.2, 555, 515.3, OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98(2003)
Picloram	515.1, 515.2, 555, 515.3, OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98(2003)

Simazine	505[~~*~~1], 507, 508.1, 525.2, 551.2
Toxaphene	505, 508, 525.2, 508.1

Total Trihalomethanes (TTHMs).

Contaminant	Analytical Methods
Total Trihalomethanes (TTHMs), Trihalomethanes (THMs), and Maximum Total Trihalomethane Potential	502.2, 524.2, 551.1

State-Only MCLs (for which a method is not listed above).

Contaminant	Analytical Methods
Aldrin	505, 508, 508.1, 525.2
DDT	505, 508
Dieldrin	505, 508, 508.1, 525.2

[~~*-~~1] denotes that, for the particular contaminant, a nitrogen-phosphorus detector should be substituted for the electron capture detector in method 505 (or another approved method should be used) to determine alachlor, atrazine, and simazine if lower detection limits are required.

[2] denotes that Syngenta Method AG-625 may not be used for the analysis of atrazine in any system where chlorine dioxide is used for drinking water treatment. In samples from all other systems, any result for atrazine generated by Syngenta Method AG–625 that is greater than one-half the maximum contaminant level (MCL) (in other words, greater than 0.0015mg/ℓ or 1.5 μg/ℓ) must be confirmed using another approved method for this contaminant and should use additional volume of the original sample collected for compliance monitoring. In instances where a result from Syngenta Method AG–625 triggers such confirmatory testing, the confirmatory result is to be used to determine compliance.

BOARD NOTE: Derived from 40 CFR 141.24(e) ~~(2005)~~ (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3, 2008).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.720 Analytical Methods

a) The methods specified below, or alternative methods approved by the Agency pursuant to Section 611.480, incorporated by reference in Section 611.102, are to be used to determine compliance with Section 611.330, except in cases where alternative methods have been approved in accordance with Section 611.480.

1) Gross Alpha and Beta.

A) Standard Methods.

i) Method 302, 13th ed.; or

ii) Method 7110 B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for gross alpha and beta by evaporation in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7110 B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7110 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7110 B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) USEPA Interim Radiochemical Methods: page 1;

C) USEPA Radioactivity Methods: Method 900.0;

D) USEPA Radiochemical Analyses: page 1;

E) USEPA Radiochemistry Methods: Method 00-01; or

F) USGS Methods: Method R-1120-76.

2) Gross Alpha.

A) Standard Methods, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 7110 C; or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for gross alpha by coprecipitation in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7110 C (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7110 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added

Method 7110 C from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) USEPA Radiochemistry Methods: Method 00-02.

3) Radium-226.

A) ASTM Methods.

i) Method ~~D2460-90~~ D2460-97; or

ii) Method D3454-97;

B) New York Radium Method;

C) Standard Methods.

i) Method 304, 13th ed.;

ii) Method 305, 13th ed.;

iii) Method 7500-Ra B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.; or

iv) Method 7500-Ra C, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for radium-226 in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7500-Ra B and C (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-Ra that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-Ra B and C from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

D) USDOE Manual: Method Ra-04;

E) USEPA Interim Radiochemical Methods: pages 13 and 16;

F) USEPA Radioactivity Methods: Methods 903.0, 903.1;

G) USEPA Radiochemical Analyses: page 19;

H) USEPA Radiochemistry Methods: Methods Ra-03, Ra-04; or

I) USGS Methods.

i) Method R-1140-76; or

ii) Method R-1141-76.

J) Georgia Radium Method.

4) Radium-228.

A) Standard Methods, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 7500-Ra D;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for radium-228 by radiochemical in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7500-Ra D (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-Ra that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-Ra D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) New York Radium Method;

C) USEPA Interim Radiochemical Methods: page 24;

D) USEPA Radioactivity Methods: Method 904.0;

E) USEPA Radiochemical Analyses: page 19;

F) USEPA Radiochemistry Methods: Method Ra-05;

G) USGS Methods: Method R-1142-76; ~~or~~

H) New Jersey Radium Method~~.~~; or

I) Georgia Radium Method.

5) Uranium.

A) Standard Methods, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.: Method 7500-U C;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for uranium by radiochemical and alpha spectrometry in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7500-U C (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-U that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-U B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) Standard Methods, 20th ed.: Method 3125;

C) ASTM Methods.

i) Method D2907-97;

ii) Method D3972-97 or D3972-02;

iii) Method D5174-97 or D5174-02; or

iv) Method D5673-03 or Method 5673-05;

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

D) USEPA Radioactivity Methods: Methods 908.0, 908.1;

E) USEPA Environmental Metals Methods: Method 200.8;

F) USEPA Radiochemical Analyses: page 33;

G) USEPA Radiochemistry Methods: Method 00-07;

H) USDOE Manual: Method U-02 or U-04; or

I) USGS Methods.

i) Method R-1180-76;

ii) Method R-1181-76; or

iii) Method R-1182-76.

BOARD NOTE: If uranium (U) is determined by mass, a conversion factor of 0.67 pCi/µg of uranium must be used. This conversion factor is based on the 1:1 activity ratio of ^{234}U and ^{238}U that is characteristic of naturally occurring uranium.

6) Radioactive Cesium.

A) ASTM Methods.

i) Method D2459-72; or

ii) Method D3649-91 or D3649-98a;

B) Standard Methods.

i) Method 7120, 19th, ~~or~~ 20th, or 21st ed.; or

ii) Method 7500-Cs B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for radioactive cesium in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7120 (as approved in 1997) and Method 7500-Cs B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 7120 and Method 7500-Cs that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 7120 and Method 7500-Cs B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) USDOE Manual: Method 4.5.2.3;

D) USEPA Interim Radiochemical Methods: page 4;

E) USEPA Radioactivity Methods: Methods 901.0, 901.1;

F) USEPA Radiochemical Analyses: page 92; or

G) USGS Methods.

i) Method R-1110-76; or

ii) Method R-1111-76.

7) Radioactive Iodine.

A) ASTM Methods.

i) D3649-91 or D3649-98a; or

ii) D4785-93 or D4785-98;

B) Standard Methods.

i) Method 7120, 19th, ~~or~~ 20th, or 21st ed.;

ii) Method 7500-I B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

iii) Method 7500-I C, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.; or

iv) Method 7500-I D, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for radioactive iodine in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7120 (as approved in 1997) and Method 7500-I B, C, and D (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 7120 and Method 7500-I that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 7500-I B, C, and D from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) USDOE Manual: Method 4.5.2.3;

D) USEPA Interim Radiochemical Methods: pages 6, 9;

E) USEPA Radiochemical Analyses: page 92; or

F) USEPA Radioactivity Methods: Methods 901.1, 902.0.

8) Radioactive Strontium-89 & 90.

A) Standard Methods.

i) Method 303, 13th ed.; or

ii) Method 7500-Sr B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for radioactive strontium in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7500-Sr B (as approved in 2001). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-Sr that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-Sr B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) USDOE Manual.

i) Method Sr-01; or

ii) Method Sr-02;

C) USEPA Interim Radiochemical Methods: page 29;

D) USEPA Radioactivity Methods: Method 905.0;

E) USEPA Radiochemical Analyses: page 65;

F) USEPA Radiochemistry Methods: Method Sr-04; or

G) USGS Methods: Method R-1160-76.

9) Tritium.

A) ASTM Methods: Method D4107-91 or D4107-98;

B) Standard Methods.

i) Method 306, 13th ed.; or

ii) Method 7500-^{3}H B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for tritium in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7500-^{3}H B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-^{3}H that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-^{3}H B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) USEPA Interim Radiochemical Methods: page 34;

D) USEPA Radioactivity Methods: Method 906.0;

E) USEPA Radiochemical Analyses: page 87;

F) USEPA Radiochemistry Methods: Method H-02; or

G) USGS Methods: Method R-1171-76.

10) Gamma Emitters.

A) ASTM Methods.

i) Method D3649-91 or D3649-98a; or

ii) Method D4785-93 or D4785-00a;

B) Standard Methods.

i) Method 7120, 19th, ~~or~~ 20th, or 21st ed.;

ii) Method 7500-Cs B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.; or

iii) Method 7500-I B, 17th, 18th, 19th, ~~or~~ 20th, or 21st ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for gamma emitters in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7120 (as approved in 1997), Method 7500-Cs B (as approved in 2000), and Method 7500-I B (as approved in 2000). The Board has instead cited to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 7120, Method 7500-Cs, and Method 7500-I that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 7150, Method 7500-Cs B, and Method 7500-I B from the 21st edition of Standard Methods as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

C) USDOE Manual: Method Ga-01-R;

D) USEPA Radioactivity Methods: Methods 901.0, 901.1, or 902.0;

E) USEPA Radiochemical Analyses: page 92; or

F) USGS Methods: Method R-1110-76.

b) When the identification and measurement of radionuclides other than those listed in subsection (a) of this Section are required, the following methods, incorporated by reference in Section 611.102, are to be used, except in cases where alternative methods have been approved in accordance with Section 611.480:

1) "Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions," available from NTIS.

2) HASL Procedure Manual, HASL 300, available from ERDA Health and Safety Laboratory.

c) For the purpose of monitoring radioactivity concentrations in drinking water, the required sensitivity of the radioanalysis is defined in terms of a detection limit. The detection limit must be that concentration which can be counted with a precision of plus or minus 100 percent at the 95 percent confidence level (1.96σ, where σ is the standard deviation of the net counting rate of the sample).

1) To determine compliance with Section 611.330(b), (c), and (e), the detection limit must not exceed the concentrations set forth in the following table:

Contaminant	Detection Limit
Gross alpha particle activity	3 pCi/ℓ
Radium-226	1 pCi/ℓ
Radium-228	1 pCi/ℓ
Uranium	1 µg/ℓ

BOARD NOTE: Derived from 40 CFR 141.25(c) Table B ~~(2005)~~ (2007).

2) To determine compliance with Section 611.330(d), the detection limits must not exceed the concentrations listed in the following table:

Radionuclide	Detection Limit
Tritium	1,000 pCi/ℓ
Strontium-89	10 pCi/ℓ
Strontium-90	2 pCi/ℓ
Iodine-131	1 pCi/ℓ
Cesium-134	10 pCi/ℓ
Gross beta	4 pCi/ℓ
Other radionuclides	1/10 of applicable limit

BOARD NOTE: Derived from 40 CFR 141.25(c) Table C ~~(2005)~~ (2007).

d) To judge compliance with the MCLs listed in Section 611.330, averages of data must be used and must be rounded to the same number of significant figures as the MCL for the substance in question.

BOARD NOTE: Derived from 40 CFR 141.25 ~~(2005)~~ (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3, 2008).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

SUBPART S: GROUNDWATER RULE

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 delineated WHPAs (identifying sources of contamination within the WHPAs and evaluations ~~or~~ of the hydrogeologic sensitivity of the delineated WHPAs conducted under source water assessments or utilizing 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 addresses 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 a 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 before 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 before 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 subsection (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 CFR 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)~~ (2007). Subsection (d) is derived from 40 CFR 142.16(o)(2)~~, as added at 71 Fed. Reg. 65574 (Nov. 8, 2006)~~ (2007).

(Source: Amended at 33 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 after 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 supplier cannot collect the groundwater source water sample within 24 hours due to circumstances beyond the supplier's 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 after 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 611.521 must notify the wholesale systems within 24 hours after 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 ~~Section~~ 611.521 is total coliform-positive must, within 24 hours after 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 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, or alternative methods approved by the Agency pursuant to Section 611.480, 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 or 21st ed., Method 9223 B.

ii) Colisure Test, Standard Methods, 20th or 21st ed., Method

9223 B.

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.

viii) Colilert-18, Standard Methods, 20th or 21st 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 611.526(a) or (b) after use of Standard Methods, Method 9221 B, 9221 D, 9222 B, or 9222 C. On June 3, 2008 (at 73 Fed. Reg. 31616), USEPA added appendix A to subpart C of 40 CFR 141 of 40 CFR 141, which authorized alternative methods to those listed for E. coli by Colilert and Colisure and added Colilert-18 in the table at corresponding 40 CFR 141.402(c)(2) to allow the use of the 21st edition of Standard Methods for the Examination of Water and Wastewater and Standard Methods Online (at www.standardmethods.org), Method 9223 B (as approved in 1997). The Board has instead cited only to the 21st edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 9223 B that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA also added the version of Method 9223 B that appears in the 20th edition of Standard Methods as to Colilert-18.

B) Enterococci:

i) Multiple-Tube Technique, Standard Methods, 20th ed., Method 9230 B or Standard Methods Online, Method 9230 B.

BOARD NOTE: On June 3, 2008 (at 73 Fed. Reg. 31616), USEPA added appendix A to subpart C of 40 CFR 141 of 40 CFR 141, which authorized alternative methods to those listed for enterococci by multiple-tube technique at corresponding 40 CFR 141.402(c)(2) to allow the use of the Standard Methods Online (at www.standardmethods.org), Method 9230 B (as approved in 2004).

ii) Membrane Filter Technique, Standard Methods, 20th ed., Method 9230 C, 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, it may collect a sample at an 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)~~ (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3, 2008).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

SUBPART U: CONSUMER CONFIDENCE REPORTS

Section 611.884 Required Additional Health Information

a) All reports must prominently display the following language: "Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA or Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the USEPA Safe Drinking Water Hotline (800-426-4791)."

b) A supplier that detects arsenic above 0.005 mg/ℓ and up to and including 0.010 mg/ℓ must do the following:

1) The supplier must include in its report a short informational statement about arsenic, using the following language: "While your drinking water meets USEPA's standard for arsenic, it does contain low levels of arsenic. USEPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. USEPA continues to research the health effects of low levels of arsenic, which is a naturally-occurring mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems."; or

2) The supplier may write its own educational statement, but only in consultation with the Agency.

c) A supplier that detects nitrate at levels above 5 mg/ℓ, but below the MCL, must do the following:

1) The supplier must include a short informational statement about the impacts of nitrate on children, using the following language: "Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider"; or

2) The CWS supplier may write its own educational statement, but only in consultation with the Agency.

~~d) A CWS supplier that detects lead above the action level in more than five percent,~~

~~and up to and including ten percent, of homes sampled must do the following:~~

d) Every report must include the following lead-specific information:

~~1) The CWS supplier must include a short informational statement about the special impact of lead on children, using the following language: "Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to two minutes before using tap water. Additional information is available from the USEPA Safe Drinking Water Hotline (800-426-4791)"; or~~

1) A short informational statement about lead in drinking water and its effects on children. The statement must include the following information:

> If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [NAME OF SUPPLIER] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at *http://www.epa.gov/safewater/lead.*

~~2) The CWS supplier may write its own educational statement, but only in consultation with the Agency.~~

2) A supplier may write its own educational statement, but only in consultation with the Agency.

e) A CWS supplier that detects TTHM above 0.080 mg/ℓ, but below the MCL in Section 611.312, as an annual average, monitored and calculated under the provisions of former Section 611.680, must include the health effects language prescribed by Appendix A of this Part.

f) Until January 22, 2006, a CWS supplier that detects arsenic above 0.010 mg/ℓ and up to and including 0.05 mg/ℓ must include the arsenic health effects language prescribed by Appendix A to this Part.

BOARD NOTE: Derived from 40 CFR 141.154 ~~(2003)~~ (2007), as amended at 72 Fed. Reg. 57782 (October 10, 2007).

(Source: Amended at 33 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)~~ (c)(1)(E) of this Section, subject to the conditions of subsections ~~(c)(1)(E)~~ (c)(1)(F) through ~~(c)(1)(G)~~ (c)(1)(H) of this Section:

1) Compliance dates.

A) A supplier that is not part of a combined distribution system, or a supplier that serves the largest population in a combined distribution system, and which 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 must have obtained or have been subject to a very small system waiver before October 1, 2006. The supplier must further complete its standard monitoring or system-specific study before September 30, 2008 and submit its IDSE report to the Agency before January 1, 2009.

B) A supplier that is not part of a combined distribution system, or a supplier that serves the largest population in a combined distribution system, and which 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 must have obtained or have been subject to a very small system waiver before April 1, 2007. The supplier must further complete its standard monitoring or system-specific study before March 31, 2009 and submit its IDSE report to the Agency before July 1, 2009.

C) A supplier that is not part of a combined distribution system, or a supplier that serves the largest population in a combined distribution system, and which serves a population of 10,000 to 49,999 persons must submit its standard monitoring plan, its system-specific study plan, or its 40/30 certification or must obtain or be subject to a very small system waiver before October 1, 2007. The supplier must further complete its standard monitoring or system-specific study before September 30, 2009 and submit its IDSE report to the Agency before January 1, 2010.

D) A supplier that is not part of a combined distribution system, or a supplier that serves the largest population in a combined distribution system, and which serves a population of fewer than 10,000 persons (and which is a CWS) must submit its standard monitoring plan, its system-specific study plan, or its 40/30 certification or must obtain or be subject to a very small system waiver before April 1, 2008. The supplier must further complete its standard monitoring or system-specific study before March 31, 2010 and submit its IDSE report to the Agency before July 1, 2010.

E) A supplier that is part of a combined distribution system which does not serve the largest population in the combined system, which is a wholesale system supplier or a consecutive system supplier, must submit its standard monitoring plan, its system-specific study plan, or its 40/30 certification or must obtain or be subject to a very small system waiver; must further complete its standard monitoring or system-specific study; and submit its IDSE report to the Agency at the same time as the supplier in the combined system that has the earliest compliance date.

~~E~~F) If, within 12 months after the date when submission of the standard monitoring plan, the system-specific study plan, or the 40/30 certification or becoming subject to a very small system waiver is due, as identified in the applicable of subsections (a)(1) through (a)(4) of this Section, 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~~G) The supplier must submit its 40/30 certification pursuant to Section 611.923 before the date indicated in the applicable of subsections (a)(1) through (a)(4) of this Section.

~~G~~H) If, within three months after the due date for submission of the IDSE report identified in this subsection (c)(1) (nine months after this date 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, 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 conduct 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 which uses 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 meets 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)~~ (2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM

Section 611.1004 Source Water Monitoring Requirements: Analytical Methods

a) Cryptosporidium. A supplier must analyze for Cryptosporidium using USEPA OGWDW Methods, Method 1623 (05) or USEPA OGWDW Methods, Method 1622 (05), or alternative methods approved by the Agency pursuant to Section 611.480, 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), or alternative methods approved by the Agency pursuant to Section 611.480, 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, or 20th ed., Method 9223 B, as listed in 40 CFR 136.3(a), incorporated by reference in Section 611.102.

3) A supplier must maintain the temperature of its samples between 0ºC and 10ºC during storage and transit to the laboratory.

4) The supplier may use the membrane filtration, two-step procedure described in Standard Methods, 20th ed., Method 9222 D and G, incorporated by reference in Section 611.102.

BOARD NOTE: On June 3, 2008 (at 73 Fed. Reg. 31616), USEPA added appendix A to subpart C of 40 CFR 141 of 40 CFR 141, which authorized alternative methods to those listed for E. coli by multiple-tube technique at corresponding 40 CFR 141.402(c)(2) to allow the use of Standard Methods for the Examination of Water and Wastewater, 20th ed., Method 9222 D and G.

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)~~ (2007) and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3, 2008).

(Source: Amended at 33 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 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 and 611.1005.

c) Cryptosporidium sample analysis. The analysis of Cryptosporidium samples must meet the criteria in this subsection (c).

1) Laboratories ~~analyzed~~ must analyze Cryptosporidium samples using one of the following analytical methods, or alternative methods approved by the Agency pursuant to Section 611.480:

A) USEPA OGWDW Methods, Method 1623 (05), incorporated by reference in Section 611.102;

B) USEPA OGWDW Methods, Method 1622 (05), incorporated by reference in Section 611.102;

C) USEPA OGWDW Methods, Method 1623 (01), incorporated by reference in Section 611.102;

D) USEPA OGWDW Methods, Method 1622 (01), incorporated by reference in Section 611.102;

E) USEPA OGWDW Methods, Method 1623 (99), incorporated by reference in Section 611.102; or

F) USEPA OGWDW Methods, 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 it intends 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.

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, initial precision and recovery, 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 Agency, to ensure that the data set used pursuant to Section 611.1010 or Section 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)~~ (2007).

(Source: Amended at 33 Ill. Reg. ________, effective ______________________)

I, John T. Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion on December 18, 2008, by a vote of 5-0.

John T. Therriault

John T. Therriault, Assistant Clerk
Illinois Pollution Control Board