ILLINOIS POLLUTION CONTROL BOARD
October 4, 2001

IN THE MATTER OF:)
)
SDWA UPDATE, USEPA AMENDMENTS) R01-20
(July 1, 2000 through December 31, 2000;) (Identical-in-Substance
Radionuclides)) Rulemaking - Public Water Supply)

Adopted Rule. Final Order.

ORDER OF THE BOARD (by R.C. Flemal):

Under Sections 7.2 and 17.5 of the Environmental Protection Act (Act) (415 ILCS 5/7.2 and 17.5 (2000)), the Board today adopts amendments to the Illinois regulations that are "identical in substance" to drinking water regulations that the United States Environmental Protection Agency (USEPA) adopted to implement Sections 1412(b), 1414(c), 1417(a), and 1445(a) of the federal Safe Drinking Water Act (SDWA) (42 U.S.C. §§ 300g-1(a), 300g-3(c), 300g-6(a), and 300j-4(a) (1994)). The nominal timeframe of this docket includes federal SDWA amendments that USEPA adopted in the period July 1, 2000 through December 31, 2000.

Sections 7.2 and 17.5 provide for quick adoption 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 Safe Drinking Water Act (SDWA) (42 U.S.C. §§ 300g-1(a), 300g-3(c), 300g-6(a), and 300j-4(a) (1994)). Section 17.5 also provides that Title VII of the Act and Section 5 of the Administrative Procedure Act (APA) (5 ILCS 100/5-35 and 5-40 (2000)) do not apply to the Board's adoption of identical-in-substance regulations. The federal SDWA regulations are found at 40 C.F.R. 141 through 143.

This order is supported by an opinion that the Board also adopts today. The Board will promptly file the amendments with the Secretary of State and submit a Notice of Adopted Amendments for publication in the *Illinois Register*. The complete text of the adopted amendments follows.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above order on October 4, 2001, by a vote of 7-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board

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

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

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

SUBPART M: TURBIDITY MONITORING AND ANALYTICAL REQUIREMENTS

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

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SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

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SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

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SUBPART R: ENHANCED FILTRATION AND DISINFECTION

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SUBPART T: REPORTING AND RECORDKEEPING

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SUBPART U: CONSUMER CONFIDENCE REPORTS

Section

SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

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. ________, effective ______________________.

SUBPART A: GENERAL

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:

“Amco-AEPA-1 Polymer” is available from Advanced Polymer Systems.

“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.

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

“GLI Method 2” means GLI Method 2, “Turbidity~~”~~,” Nov. 2, 1992, available from Great Lakes Instruments, Inc.

“Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources~~”~~,” available from USEPA Science and Technology Branch.

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

“Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure~~”~~,” NCRP Report Number 22, available from NCRP.

“NCRP” means “National Council on Radiation Protection”.

“NTIS” means “National Technical Information Service”.

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

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

“ONGP-MUG 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 ed., from American Public Health Association.

“Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions~~”~~,” available from NTIS.

“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.

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

“Technicon Methods” means “Fluoride in Water and Wastewater~~”~~,” available from Technicon.

“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~~”~~,” available from NTIS.

“USEPA Asbestos Methods-100.2” means Method 100.2, “Determination of Asbestos Structures over 10-mm in Length in Drinking Water~~”~~,” available from NTIS.

“USEPA Environmental Inorganics Methods” means “Methods for the Determination of Inorganic Substances in Environmental Samples~~”~~,” available from NTIS; “Methods for the Determination of Inorganic Substances in Environmental Samples~~”~~,” August 1993, for Method 300.0; “Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0~~”~~,” 1997, for Method 300.1.

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

“USEPA Organic Methods” means “Methods for the Determination of Organic Compounds in Drinking Water~~”~~,” July 1991, for Methods 502.2, 505, 507, 508, 508A, 515.1, and 531.1; “Methods for the Determination of Organic Compounds in Drinking Water--Supplement I~~”~~,” July 1990, for Methods 506, 547, 550, 550.1, and 551; and “Methods for the Determination of Organic Compounds in Drinking Water--Supplement II~~”~~,” August 1992, for Methods 515.2, 524.2, 548.1, 549.1, 552.1, and 555, available from NTIS. Methods 504.1, 508.1, and 525.2 are available from EPA EMSL; “Methods for the Determination of Organic Compounds” in Drinking Water-Supplement II, August 1992, for Method 552.1; “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.

“USEPA Interim Radiochemical Methods” means “Interim Radiochemical Methodology for Drinking Water~~”~~,” EPA 600/4-75-008 (revised), March 1976. 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 Millipore Corporation, Waters Chromatography Division.

b) The Board incorporates the following publications by reference:

Access Analytical Systems, Inc. (See Environetics, Inc.)

Advanced Polymer Systems, 3696 Haven Avenue, Redwood City, CA 94063 415-366-2626:

Amco-AEPA-1 Polymer. See 40 CFR 141.22(a) (1998). Also, as referenced in ASTM D1889.

American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005 800-645-5476:

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

“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 Water Works Association.

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

American Waterworks Association et al., 6666 West Quincy Ave., Denver, CO 80235 303-794-7711:

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).

Method 303, Total Radioactive Strontium and Strontium 90 in Water.

Method 304, Radium in Water by Precipitation.

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

Method 306, Tritium in Water.

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.

Method 2320 B, Alkalinity, Titration Method.

Method 2510 B, Conductivity, Laboratory Method.

Method 2550, Temperature, Laboratory and Field Methods.

Method 3111 B, Metals by Flame Atomic Absorption Spectrometry, Direct Air-Acetylene Flame Method.

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

Method 3112 B, Metals by Cold-Vapor Atomic Absorption Spectrometry, Cold-Vapor Atomic Absorption Spectrometric Method.

Method 3113 B, Metals by Electrothermal Atomic Absorption Spectrometry, Electrothermal Atomic Absorption Spectrometric Method.

Method 3114 B, Metals by Hydride Generation/Atomic Absorption Spectrometry, Manual Hydride Generation/Atomic Absorption Spectrometric Method.

Method 3120 B, Metals by Plasma Emission Spectroscopy, Inductively Coupled Plasma (ICP) Method.

Method 3500-Ca D, Calcium, EDTA Titrimetric Method.

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

Method 4500-CN^- C, Cyanide, Total Cyanide after Distillation.

Method 4500-CN^- E, Cyanide, Colorimetric Method.

Method 4500-CN^- F, Cyanide, Cyanide-Selective Electrode Method.

Method 4500-CN^- G, Cyanide, Cyanides Amenable to Chlorination after Distillation.

Method 4500-ClO_2 C, Chlorine Dioxide, Amperometric Method I.

Method 4500-F^- B, Fluoride, Preliminary Distillation Step.

Method 4500-F^- C, Fluoride, Ion-Selective Electrode Method.

Method 4500-F^- D, Fluoride, SPADNS Method.

Method 4500-F^- E, Fluoride, Complexone Method.

Method 4500-H^+ B, pH Value, Electrometric Method.

Method 4500-NO_2^- B, Nitrogen (Nitrite), Colorimetric Method.

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

Method 4500-NO_3^- E, Nitrogen (Nitrate), Cadmium Reduction Method.

Method 4500-NO_3^- F, Nitrogen (Nitrate), Automated Cadmium Reduction Method.

Method 4500-O_3 B, Ozone (Residual) (Proposed), Indigo Colorimetric Method.

Method 4500-P E, Phosphorus, Ascorbic Acid Method.

Method 4500-P F, Phosphorus, Automated Ascorbic Acid Reduction Method.

Method 4500-Si D, Silica, Molybdosilicate Method.

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

Method 4500-Si F, Silica, Automated Method for Molybdate-Reactive Silica.

Method 4500-SO_4^{2-} C, Sulfate, Gravimetric Method with Ignition of Residue.

Method 4500-SO_4^{2-} D, Sulfate, Gravimetric Method with Drying of Residue.

Method 4500-SO_4^{2-} F, Sulfate, Automated Methylthymol Blue Method.

Method 6610, Carbamate Pesticide Method.

Method 6651, Glyphosate Herbicide (Proposed).

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

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

Method 7500-Cs B, Radioactive Cesium, Precipitation Method.

Method 7500-3H, B, Tritium, Liquid Scintillation Spectrometric Method.

Method 7500-I B, Radioactive Iodine, Precipitation Method.

Method 7500-I C, Radioactive Iodine, Ion-Exchange Method.

Method 7500-I D, Radioactive Iodine, Distillation Method.

Method 7500-Ra B, Radium, Precipitation Method.

Method 7500-Ra C, Radium, Emanation Method.

Method 7500-Ra D, Radium, Sequential Precipitation Method (Proposed).

Method 7500-U B, Uranium, Radiochemical Method (Proposed).

Method 7500-U C, Uranium, Isotopic Method (Proposed).

Method 9215 B, Heterotrophic Plate Count, Pour Plate Method.

Method 9221 A, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Introduction.

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

Method 9221 C, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Estimation of Bacterial Density.

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

Method 9222 A, Membrane Filter Technique for Members of the Coliform Group, Introduction.

Method 9222 B, Membrane Filter Technique for Members of the Coliform Group, Standard Total Coliform Membrane Filter Procedure.

Method 9222 C, Membrane Filter Technique for Members of the Coliform Group, Delayed-Incubation Total Coliform Procedure.

Method 9223, Chromogenic Substrate Coliform Test (Proposed).

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

Method 7120-B, Gamma Spectrometric Method.

Method 7500-U C, Uranium, Isotopic Method.

Method 4500-Cl D, Chlorine (Residual), Amperometric Titration Method.

Method 4500-Cl E, Chlorine (Residual), Low-Level Amperometric Titration Method.

Method 4500-Cl F, Chlorine (Residual), DPD Ferrous Titrimetric Method.

Method 4500-Cl G, Chlorine (Residual), DPD Colorimetric Method.

Method 4500-Cl H, Chlorine (Residual), Syringaldazine (FACTS) Method.

Method 4500-Cl I, Chlorine (Residual), Iodometric Electrode Technique.

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

Method 4500-ClO_2 E, Chlorine Dioxide, Amperometric Method II.

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

Method 5910 B, UV Absorbing Organic Constituents, Ultraviolet Absorption Method.

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.

Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation Method.

Method 5310 D, TOC, Wet-Oxidation Method.

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

Technical Bulletin 601, “Standard Method of Testing for Nitrate in Drinking Water~~”~~,” July, 1994, PN 221890-001 (referred to as “Technical Bulletin 601”).

ASTM. American Society for Testing and Materials, 1976 Race Street,
Philadelphia, PA 19103 215-299-5585:

ASTM Method D511-93 A and B, “Standard Test Methods for Calcium and Magnesium in Water~~”~~,” “Test Method A--complexometric Titration” & “Test Method B--Atomic Absorption Spectrophotometric~~”~~,” approved 1993.

ASTM Method D515-88 A, “Standard Test Methods for Phosphorus in Water~~”~~,” “Test Method A--Colorimetric Ascorbic Acid Reduction~~”~~,” approved August 19, 1988.

ASTM Method D859-88, “Standard Test Method for Silica in Water~~”~~,” approved August 19, 1988.

ASTM Method D1067-92 B, “Standard Test Methods for Acidity or Alkalinity in Water~~”~~,” “Test Method B--Electrometric or Color-Change Titration~~”~~,” approved May 15, 1992.

ASTM Method D1125-91 A, “Standard Test Methods for Electrical Conductivity and Resistivity of Water~~”~~,” “Test Method A--Field and Routine Laboratory Measurement of Static (Non-Flowing) Samples~~”~~,” approved June 15, 1991.

ASTM Method D1179-93 B “Standard Test Methods for Fluoride in Water~~”~~,” “Test Method B--Ion Selective Electrode~~”~~,” approved 1993.

ASTM Method D1293-84 “Standard Test Methods for pH of Water~~”~~,” “Test Method A--Precise Laboratory Measurement” & “Test Method B--Routine or Continuous Measurement~~”~~,” approved October 26, 1984.

ASTM Method D1688-90 A or C, “Standard Test Methods for Copper in Water~~”~~,” “Test Method A--Atomic Absorption, Direct” & “Test Method C--Atomic Absorption, Graphite Furnace~~”~~,” approved March 15, 1990.

ASTM Method D2036-91 A or B, “Standard Test Methods for Cyanide in Water~~”~~,” “Test Method A--Total Cyanides after Distillation” & “Test Method B--Cyanides Amenable to Chlorination by Difference~~”~~,” approved September 15, 1991.

ASTM Method D2459-72, “Standard Test Method for Gamma Spectrometry in Water,” approved July 28, 1972, discontinued 1988.

ASTM Method D2460-90, “Standard Test Method for Radionuclides of Radium in Water~~”~~,” approved 1990.

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

ASTM Method D2972-93 B or C, “Standard Test Methods for Arsenic in Water~~”~~,” “Test Method B--Atomic Absorption, Hydride Generation” & “Test Method C--Atomic Absorption, Graphite Furnace~~”~~,” approved 1993.

ASTM Method D3223-91, “Standard Test Method for Total Mercury in Water~~”~~,” approved September 23, 1991.

ASTM Method D3454-91, “Standard Test Method for Radium-226 in Water~~”~~,” approved 1991.

ASTM Method D3559-90 D, “Standard Test Methods for Lead in Water~~”~~,” “Test Method D--Atomic Absorption, Graphite Furnace~~”~~,” approved August 6, 1990.

ASTM Method D3645-93 B, “Standard Test Methods for Beryllium in Water~~”~~,” “Method B--Atomic Absorption, Graphite Furnace~~”~~,” approved 1993.

ASTM Method D3649-91, “Standard Test Method for High-Resolution Gamma-Ray Spectrometry of Water~~”~~,” approved 1991.

ASTM Method D3697-92, “Standard Test Method for Antimony in Water~~”~~,” approved June 15, 1992.

ASTM Method D3859-93 A, “Standard Test Methods for Selenium in Water~~”~~,” “Method A--Atomic Absorption, Hydride Method~~”~~,” approved 1993.

ASTM Method D3867-90 A and B, “Standard Test Methods for Nitrite-Nitrate in Water~~”~~,” “Test Method A--Automated Cadmium Reduction” & “Test Method B--Manual Cadmium Reduction~~”~~,” approved January 10, 1990.

ASTM Method D3972-90, “Standard Test Method for Isotopic Uranium in Water by Radiochemistry~~”~~,” approved 1990.

ASTM Method D4107-91, “Standard Test Method for Tritium in Drinking Water~~”~~,” approved 1991.

ASTM Method D4327-91, “Standard Test Method for Anions in Water by Ion Chromatography~~”~~,” approved October 15, 1991.

ASTM Method D4785-88, “Standard Test Method for Low-Level Iodine-131 in Water~~”~~,” approved 1988.

ASTM Method D5174-91, “Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry~~”~~,” approved 1991.

ASTM Method D 1253-86, “Standard Test Method for Residual Chlorine in Water,” reapproved 1992.

ERDA Health and Safety Laboratory, New York, NY:

HASL Procedure Manual, HASL 300, 1973. See 40 CFR 141.25(b)(2) (1998).

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

GLI Method 2, “Turbidity~~”~~,” Nov. 2, 1992.

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

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

Millipore Corporation, Waters Chromatography Division, 34 Maple St., Milford, MA 01757 800-252-4752:

Waters Test Method for the Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography, Method B-1011 (referred to as “Waters Method B-1011”).

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

“Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure~~”~~,” NCRP Report Number 22, June 5, 1959.

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

NSF Standard 61, section 9, November 1998.

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

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

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

Method 100.1, “Analytical Method for Determination of Asbestos Fibers in Water~~”~~,” EPA-600/4-83-043, September, 1983, Doc. No. PB83-260471 (referred to as “USEPA Asbestos Methods-100.1”).

Method 100.2, “Determination of Asbestos Structures over 10-mm in Length in Drinking Water~~”~~,” EPA-600/4-83-043, June, 1994, Doc. No. PB94-201902 (Referred to as “USEPA Asbestos Methods-100.2”).

“Methods for Chemical Analysis of Water and Wastes~~”~~,” March, 1983, Doc. No. PB84-128677 (referred to as “USEPA Inorganic Methods”). (Methods 150.1, 150.2, and 245.2, which formerly appeared in this reference, are available from USEPA EMSL.)

“Methods for the Determination of Metals in Environmental Samples~~”~~,” June, 1991, Doc. No. PB91-231498 (referred to as “USEPA Environmental Metals Methods”).

“Methods for the Determination of Organic Compounds in Drinking Water~~”~~,” December, 1988, revised July, 1991, EPA-600/4-88/039 (referred to as “USEPA Organic Methods”). (For methods 502.2, 505, 507, 508, 508A, 515.1, and 531.1.)

“Methods for the Determination of Organic Compounds in Drinking Water--Supplement I~~”~~,” July, 1990, EPA-600-4-90-020 (referred to as “USEPA Organic Methods”). (For methods 506, 547, 550, 550.1, and 551.)

“Methods for the Determination of Organic Compounds in Drinking Water--Supplement II~~”~~,” August, 1992, EPA-600/R-92-129 (referred to as “USEPA Organic Methods”). (For methods 515.2, 524.2, 548.1, 549.1, 552.1, and 555.)

“Prescribed Procedures for Measurement of Radioactivity in Drinking Water~~”~~,” EPA 600/4-80-032, August 1980 (referred to as “USEPA Radioactivity Methods”). (Methods 900, 901, 901.1, 902, 903, 903.1, 904, 905, 906, 908, 908.1)

“Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions~~”~~,” H.L. Krieger and S. Gold, EPA-R4-73-014, May, 1973, Doc. No. PB222-154/7BA.

“Radiochemical Analytical Procedures for Analysis of Environmental Samples~~”~~,” March, 1979, Doc. No. EMSL LV 053917 (referred to as “USEPA Radiochemical Analyses”). (Pages 1, 19, 33, 65, 87, 92)

“Radiochemistry Procedures Manual~~”~~,” EPA-520/5-84-006, December, 1987, Doc. No. PB-84-215581 (referred to as “USEPA Radiochemistry Methods”). (Methods 00-01, 00-02, 00-07, H-02, Ra-03, Ra-04, Ra-05, Sr-04)

“Technical Notes on Drinking Water Methods~~”~~,” EPA-600/R-94-173, October, 1994, Doc. No. PB-104766 (referred to as “USEPA Technical Notes”).

BOARD NOTE: USEPA made the following assertion with regard to this reference at 40 CFR 141.23(k)(1) and 141.24(e) and (n)(11) (1995): “This document contains other analytical test procedures and approved analytical methods that remain available for compliance monitoring until July 1, 1996.”

“Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS~~”~~,” October, 1994, EPA-821-B-94-005 (referred to as “Dioxin and Furan Method 1613”).

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

“Determination of Radium 228 in Drinking Water~~”~~,” August 1990.

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

> “Determination of Ra-226 and Ra-228 (Ra-02)~~”~~,” January 1980, Revised June 1982.

Technicon Industrial Systems, Tarrytown, NY 10591:

> “Fluoride in Water and Wastewater~~”~~,” Industrial Method #129-71W, December, 1972 (referred to as “Technicon Methods: Method #129-71W”). See 40 CFR 141.23(k)(1), footnote 11 (1995).
>
> “Fluoride in Water and Wastewater~~”~~,” #380-75WE, February, 1976 (referred to as “Technicon Methods: Method #380-75WE”). See 40 CFR 141.23(k)(1), footnote 11 (1995).

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

> “EML Procedures Manual~~”~~,” 27th Edition, Volume 1, 1990.

United States Environmental Protection Agency, EMSL, Cincinnati, OH 45268 513-569-7586:

> “Interim Radiochemical Methodology for Drinking Water~~”~~,” EPA-600/4-75-008 (referred to as “Radiochemical Methods”). (Revised) March, 1976.
>
> “Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water” (referred to as “USEPA Organic Methods”). (For methods 504.1, 508.1, and 525.2 only). See NTIS.
>
> “Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions”. See NTIS.

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

> “Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems using Surface Water Sources~~”~~,” October, 1989.

USGS. Books and Open-File Reports Section, United States Geological Survey, Federal Center, Box 25425, Denver, CO 80225-0425:

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

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

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R-1140-76

R-1141-76

R-1142-76

R-1160-76

R-1171-76

R-1180-76

R-1181-76

R-1182-76

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

40 CFR 136, Appendix B and C ~~(1999)~~ (2000).

d) This Part incorporates no later amendments or editions.

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.110 Special Exception Permits

a) Unless otherwise specified, each Agency determination in this Part is to be made by way of a written permit pursuant to Section 39(a) of the Act. Such permit is titled a "special exception" permit ("SEP").

b) No person ~~shall~~ may cause or allow the violation of any condition of a SEP.

c) The supplier may appeal the denial of or the conditions of a SEP to the Board pursuant to Section 40 of the Act.

d) A SEP may be initiated either:

1) By an application filed by the supplier; or

2) By the Agency, when authorized by Board regulations.

BOARD NOTE: The Board does not intend to mandate by any provision of this Part that the Agency exercise its discretion and initiate a SEP pursuant to subsection (d)(2) ~~above~~ of this Section. Rather, the Board intends to clarify by this subsection that the Agency may opt to initiate a SEP without receiving a request from the supplier.

e) The Agency ~~shall~~ must evaluate a request for a SEP from the monitoring requirements of Section 611.601, 611.602, or 611.603 (inorganic chemical contaminants, excluding the Section 611.603 monitoring frequency requirements for cyanide); Section 611.646(e) and (f) (Phase I, Phase II, and Phase V VOCs); Section 611.646(d), only as to initial monitoring for 1,2,4-trichlorobenzene;

Section 611.648(d) (for Phase II, Phase IIB, and Phase V SOCs) or Section 611.510 (for unregulated organic contaminants) on the basis of knowledge of previous use (including transport, storage, or disposal) of the contaminant in the watershed or zone of influence of the system, as determined pursuant to 35 Ill. Adm. Code 671:

BOARD NOTE: The Agency ~~shall~~ must grant a SEP from the Section 611.603 monitoring frequency requirements for cyanide only on the basis of subsection (g) ~~below~~ of this Section, not on the basis of this subsection.

1) If the Agency determines that there was no prior use of the contaminant, it ~~shall~~ must grant the SEP, or

2) If the contaminant was previously used or the previous use was unknown, the Agency ~~shall~~ must consider the following factors:

   A) Previous analytical results;

   B) The proximity of the system to any possible point source of contamination (including spills or leaks at or near a water treatment facility; at manufacturing, distribution, or storage facilities; from hazardous and municipal waste land fills; or from waste handling or treatment facilities) or non-point source of contamination (including the use of pesticides and other land application uses of the contaminant);

   C) The environmental persistence and transport of the contaminant;

   D) How well the water source is protected against contamination, including whether it is a SWS or a GWS:

      i) A GWS must consider well depth, soil type, well casing integrity, and wellhead protection; and

      ii) A SWS must consider watershed protection;

   E) For Phase II, Phase IIB, and Phase V SOCs and unregulated organic contaminants (pursuant to Section 611.631 or 611.648):

      i) Elevated nitrate levels at the water source; and

      ii) The use of PCBs in equipment used in the production, storage, or distribution of water (including pumps, transformers, etc.); and

F) For Phase I, Phase II, and Phase V VOCs (pursuant to Section 611.646): the number of persons served by the PWS and the proximity of a smaller system to a larger one.

f) If a supplier refuses to provide any necessary additional information requested by the Agency, or if a supplier delivers any necessary information late in the Agency's deliberations on a request, the Agency may deny the requested SEP or grant the SEP with conditions within the time allowed by law.

g) The Agency ~~shall~~ must grant a supplier a SEP that allows it to discontinue monitoring for cyanide if it determines that the supplier's water is not vulnerable due to a lack of any industrial source of cyanide.

BOARD NOTE: Subsection (e) ~~above~~ of this Section is derived from 40 CFR 141.24(f)(8) and (h)(6) ~~(1994)~~ (2000). Subsection (f) ~~above~~ of this Section is derived from 40 CFR 141.82(d)(2), and 141.83(b)(2) ~~(1994)~~ (2000). Subsection (g) is derived from 40 CFR 141.23(c)(2) ~~(1994)~~ (2000). ~~U.S. EPA~~ USEPA has reserved the discretion, at 40 CFR 142.18 ~~(1994)~~ (2000), to review and nullify Agency determinations of the types made pursuant to Sections 611.510, 611.602, 611.603, 611.646, and 611.648 and the discretion, at 40 CFR 141.82(i), 141.83(b)(7), and 142.19 ~~(1994)~~ (2000), to establish federal standards for any supplier, superseding any Agency determination made pursuant to Sections 611.352(d), 611.352(f), 611.353(b)(2), and 611.353(b)(4).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.130 Special Requirements for Certain Variances and Adjusted Standards

a) Relief from the TTHM MCL.

1) In granting any variance or adjusted standard to a supplier that is a CWS ~~that~~ which adds a disinfectant at any part of treatment and which provides water to 10,000 or more persons on a regular basis from the maximum contaminant level for TTHM listed in Section 611.310(c), the Board will require application of the best available technology (BAT) identified at subsection (a)(4) ~~below~~ of this Section for that constituent as a condition to the relief, unless the supplier has demonstrated through comprehensive engineering assessments that application of BAT is not technically appropriate and technically feasible for that system~~,~~ or ~~it~~ that the application would only result in a marginal reduction in TTHM for that supplier.

2) The Board will require the following as a condition for relief from the TTHM MCL where it does not require the application of BAT:

A) That the supplier continue to investigate the following methods as an alternative means of significantly reducing the level of TTHM, according to a definite schedule:

i) The introduction of off-line water storage for THM precursor reduction;

ii) ~~aeration~~ Aeration for TTHM reduction, where geography and climate allow;

iii) The introduction of clarification, where not presently practiced;

iv) The use of alternative sources of raw water; and

v) The use of ozone as an alternative or supplemental disinfectant or oxidant, and

B) That the supplier report results of that investigation to the Agency.

3) The Agency ~~shall~~ must petition the Board to reconsider or modify a variance or adjusted standard, pursuant to Subpart I of 35 Ill. Adm. Code 101~~.Subpart K~~, if it determines that an alternative method identified by the supplier pursuant to subsection (a)(2) ~~above~~ of this Section is technically feasible and would result in a significant reduction in TTHM.

4) Best available technology for TTHM reduction is as follows:

A) The use of chloramines as an alternative or supplemental disinfectant,

B) The use of chlorine dioxide as an alternative or supplemental disinfectant, or

C) ~~improved~~ Improved existing clarification for THM precursor reduction.

BOARD NOTE: ~~Derived~~ Subsection (a) derived from 40 CFR 142.60 ~~(1994)~~ (2000). ~~The restrictions of this subsection do not apply to suppliers regulated for TTHM as an additional state requirement. See the Board Note to Section 611.301(c).~~

b) Relief from the fluoride MCL.

1) In granting any variance or adjusted standard to a supplier that is a CWS from the maximum contaminant level for fluoride listed in Section

611.301(b), the Board will require application of the best available technology (BAT) identified at subsection (b)(4) ~~below~~ of this Section for that constituent as a condition to the relief, unless the supplier has demonstrated through comprehensive engineering assessments that application of BAT is not technically appropriate and technically feasible for that supplier.

2) The Board will require the following as a condition for relief from the fluoride MCL where it does not require the application of BAT:

A) That the supplier continue to investigate the following methods as an alternative means of significantly reducing the level of fluoride, according to a definite schedule:

i) A modification of lime softening;

ii) ~~alum~~ Alum coagulation;

iii) ~~electrodialysis~~Electrodialysis;

iv) ~~anion~~ Anion exchange resins;

v) ~~well~~ Well field management;

vi) The use of alternative sources of raw water; and

vii) ~~regionalization~~Regionalization, and

B) That the supplier report results of that investigation to the Agency.

3) The Agency ~~shall~~ must petition the Board to reconsider or modify a variance or adjusted standard, pursuant to Subpart I of 35 Ill. Adm. Code 101~~.Subpart K~~, if it determines that an alternative method identified by the supplier pursuant to subsection (b)(2) ~~above~~ of this Section is technically feasible and would result in a significant reduction in fluoride.

4) Best available technology for fluoride reduction is as follows:

A) ~~activated~~ Activated alumina absorption centrally applied, and

B) ~~reverse~~ Reverse osmosis centrally applied.

BOARD NOTE: ~~Derived~~ Subsection (b) derived from 40 CFR 142.61 ~~(1994)~~ (2000).

c) Relief from an inorganic chemical contaminant, VOC, or SOC MCL.

1) In granting to a supplier that is a CWS or NTNCWS any variance or adjusted standard from the maximum contaminant levels for any VOC or SOC, listed in Section 611.311(a) or (c), or for any inorganic chemical contaminant, listed in Section 611.301, the supplier must have first applied the best available technology (BAT) identified at Section 611.311(b) (VOCs and SOCs) or Section 611.301(c) (inorganic chemical contaminants) for that constituent, unless the supplier has demonstrated through comprehensive engineering assessments that application of BAT would achieve only a minimal and insignificant reduction in the level of contaminant.

BOARD NOTE: USEPA lists BAT for each SOC and VOC at 40 CFR 142.62(a) ~~(1995)~~ (2000), for the purposes of variances and exemptions (adjusted standards). That list is identical to the list at 40 CFR 141.61(b) ~~(1995)~~ (2000).

2) The Board may require any of the following as a condition for relief from a MCL listed in Section 611.301 or 611.311:

A) That the supplier continue to investigate alternative means of compliance according to a definite schedule, and

B) That the supplier report results of that investigation to the Agency.

3) The Agency ~~shall~~ must petition the Board to reconsider or modify a variance or adjusted standard, pursuant to Subpart I of 35 Ill. Adm. Code 101~~.Subpart K~~, if it determines that an alternative method identified by the supplier pursuant to subsection (c)(2) ~~above~~ of this Section is technically feasible.

BOARD NOTE: ~~Derived~~ Subsection (c) derived from 40 CFR 142.62(a) through (e) ~~(1994)~~ (2000).

d) Conditions requiring use of bottled water or point-of-use or point-of-entry devices. In granting any variance or adjusted standard from the maximum contaminant levels for organic and inorganic chemicals or an adjusted standard from the treatment technique for lead and copper, the Board may impose certain conditions requiring the use of bottled water, point-of-entry devices, or point-of-use devices to avoid an unreasonable risk to health, limited as provided in subsections (e) and (f) ~~below~~ of this Section.

1) Relief from an MCL. The Board may, when granting any variance or adjusted standard from the MCL requirements of Sections 611.301 and 611.311, impose a condition that requires a supplier to use bottled water,

point-of-use devices, point-of-entry devices or other means to avoid an unreasonable risk to health.

2) Relief from corrosion control treatment. The Board may, when granting an adjusted standard from the corrosion control treatment requirements for lead and copper of Sections 611.351 and 611.352, impose a condition that requires a supplier to use bottled water and point-of-use devices or other means, but not point-of-entry devices, to avoid an unreasonable risk to health.

3) Relief from source water treatment or service line replacement. The Board may, when granting an exemption from the source water treatment and lead service line replacement requirements for lead and copper under Sections 611.353 or 611.354, impose a condition that requires a supplier to use point-of-entry devices to avoid an unreasonable risk to health.

BOARD NOTE: ~~Derived~~ Subsection (d) derived from 40 CFR 142.62(f) ~~(1994)~~ (2000).

e) Use of bottled water. Suppliers that propose to use or use bottled water as a condition for receiving a variance or an adjusted standard from the requirements of Section 611.301 or Section 611.311, or an adjusted standard from the requirements of Sections 611.351 through 611.354 must meet the requirements of either subsections (e)(1), (e)(2), (e)(3), and (e)(6) or (e)(4), (e)(5) and (e)(6) ~~below~~ of this Section:

1) The supplier must develop a monitoring program for Board approval that provides reasonable assurances that the bottled water meets all MCLs of Sections 611.301 and 611.311 and submit a description of this program as part of its petition. The proposed program must describe how the supplier will comply with each requirement of this subsection.

2) The supplier must monitor representative samples of the bottled water for all contaminants regulated under Sections 611.301 and 611.311 during the first three-month period that it supplies the bottled water to the public, and annually thereafter.

3) The supplier ~~shall~~ must annually provide the results of the monitoring program to the Agency.

4) The supplier must receive a certification from the bottled water company as to each of the following:

A) that the bottled water supplied has been taken from an approved source of bottled water, as such is defined in Section 611.101;

B) that the approved source of bottled water has conducted monitoring in accordance with 21 CFR 129.80(g)(1) through (3);

C) and that the bottled water does not exceed any MCLs or quality limits as set out in 21 CFR 103.35, 110, and 129.

5) The supplier ~~shall~~ must provide the certification required by subsection (e)(4) ~~above~~ of this Section to the Agency during the first quarter after it begins supplying bottled water and annually thereafter.

6) The supplier ~~shall~~ must assure the provision of sufficient quantities of bottled water to every affected person supplied by the supplier via door-to-door bottled water delivery.

BOARD NOTE: ~~Derived~~ Subsection (e) derived from 40 CFR 142.62(g) ~~(1994)~~ (2000).

f) Use of point-of-entry devices. Before the Board grants any PWS a variance or adjusted standard from any NPDWR that includes a condition requiring the use of a point-of-entry device, the supplier must demonstrate to the Board each of the following:

1) ~~that~~ That the supplier will operate and maintain the device;

2) ~~that~~ That the device provides health protection equivalent to that provided by central treatment;

3) ~~that~~ That the supplier will maintain the microbiological safety of the water at all times;

4) ~~that~~ That the supplier has established standards for performance, conducted a rigorous engineering design review, and field tested the device;

5) ~~that~~ That the operation and maintenance of the device will account for any potential for increased concentrations of heterotrophic bacteria resulting through the use of activated carbon, by backwashing, post-contactor disinfection, and heterotrophic plate count monitoring;

6) ~~that~~ That buildings connected to the supplier's distribution system have sufficient devices properly installed, maintained, and monitored to assure that all consumers are protected; and

7) ~~that~~ That the use of the device will not cause increased corrosion of lead and copper bearing materials located between the device and the tap that could increase contaminant levels at the tap.

BOARD NOTE: ~~Derived~~ Subsection (f) derived from 40 CFR 142.62(h) ~~(1994)~~ (2000).

g) Relief from the maximum contaminant levels for radionuclides (effective December 8, 2003).

1) Relief from the maximum contaminant levels for combined radium-226 and radium-228, uranium, gross alpha particle activity (excluding Radon and Uranium), and beta particle and photon radioactivity.

A) Section 611.330(g) sets forth what USEPA has identified as the best available technology (BAT), treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in Section 611.330(b), (c), (d), and (e), for the purposes of issuing relief equivalent to a federal section 1415 variance or a section 1416 exemption.

B) In addition to the technologies listed in Section 611.330(g), Section 611.330(h) sets forth what USEPA has identified as the BAT, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in Section 611.330(b), (c), (d), and (e), for the purposes of issuing relief equivalent to a federal section 1415 variance or a section 1416 exemption to small drinking water systems, defined here as those serving 10,000 persons or fewer, as shown in the second table set forth at Section 611.330(h).

2) The Board will require a CWS supplier to install and use any treatment technology identified in Section 611.330(g), or in the case of small water systems (those serving 10,000 persons or fewer), listed in Section 611.330(h), as a condition for granting relief equivalent to a federal section 1415 variance or a section 1416 exemption, except as provided in subsection (a)(3) of this Section. If, after the system's installation of the treatment technology, the system cannot meet the MCL, that system will be eligible for relief.

3) If a CWS supplier can demonstrate through comprehensive engineering assessments, which may include pilot plant studies, that the treatment technologies identified in this Section would only achieve a de minimus reduction in the contaminant level, the Board may issue a schedule of compliance that requires the system being granted relief equivalent to a federal section 1415 variance or a section 1416 exemption to examine other treatment technologies as a condition of obtaining the relief.

4) If the Agency determines that a treatment technology identified under subsection (a)(3) of this Section is technically feasible, it may request that the Board require the supplier to install and use that treatment technology in connection with a compliance schedule issued pursuant to Section 36 of the Act. The Agency's determination must be based upon studies by the system and other relevant information.

5) The Board may require a community water system to use bottled water, point-of-use devices, point-of-entry devices, or other means as a condition of granting relief equivalent to a federal Section 1415 variance or a Section 1416 exemption from the requirements of Section 611.330, to avoid an unreasonable risk to health.

6) A CWS supplier that uses bottled water as a condition for receiving relief equivalent to a federal Section 1415 variance or a Section 1416 exemption from the requirements of Section 611.330 must meet the requirements specified in either subsections (e)(1) through (e)(3) or (e)(4) through (e)(6) of this Section.

7) A CWS supplier that uses point-of-use or point-of-entry devices as a condition for obtaining relief equivalent to a federal Section 1415 variance or a Section 1416 exemption from the radionuclides NPDWRs must meet the conditions in subsections (g)(1) through (g)(6) of this Section.

BOARD NOTE: Subsection (g) derived from 40 CFR 142.65, as added at 65 Fed. Reg. 76751 (December 7, 2000), effective December 8, 2003.

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

SUBPART B: FILTRATION AND DISINFECTION

Section 611.261 Unfiltered PWSs: Reporting and Recordkeeping

A supplier that uses a surface water source and does not provide filtration treatment must report monthly to the Agency the information specified in this Section beginning December 31, 1990, unless the Agency has determined that filtration is required, in which case the Agency must, by special exception permit, specify alternative reporting requirements, as appropriate, until filtration is in place. A supplier that uses a groundwater source under the direct influence of surface water and does not provide filtration treatment must report monthly to the Agency the information specified in this Section beginning December 31, 1990, or six months after the Agency determines that the groundwater source is under the direct influence of surface water, whichever is later, unless the Agency has determined that filtration is required, in which case the Agency must, by special exception permit, specify alternative reporting requirements, as appropriate, until filtration is in place.

a) Source water quality information must be reported to the Agency within ten days after the end of each month the system serves water to the public. Information that must be reported includes:

1) The cumulative number of months for which results are reported.

2) The number of fecal or total coliform samples, whichever are analyzed during the month (if a system monitors for both, only fecal coliforms must be reported), the dates of sample collection, and the dates when the turbidity level exceeded 1 NTU.

3) The number of samples during the month that had equal to or fewer than 20/100 ml fecal coliforms or equal to or fewer than 100/100 ml total coliforms, whichever are analyzed.

4) The cumulative number of fecal or total coliform samples, whichever are analyzed, during the previous six months the system served water to the public.

5) The cumulative number of samples that had equal to or fewer than 20/100 ml fecal coliforms or equal to or fewer than 100/100 ml total coliforms, whichever are analyzed, during the previous six months the system served water to the public.

6) The percentage of samples that had equal to or fewer than 20/100 ml fecal coliforms or equal to or fewer than 100/100 ml total coliforms, whichever are analyzed, during the previous six months the system served water to the public.

7) The maximum turbidity level measured during the month, the dates of occurrence for any measurements ~~which~~ that exceeded 5 NTU and the dates the occurrences were reported to the Agency.

8) For the first 12 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after one year of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 12 months the system served water to the public.

9) For the first 120 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after ten years of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 120 months the system served water to the public.

b) Disinfection information specified in Section 611.532 must be reported to the Agency within ten days after the end of each month the system serves water to the public. Information that must be reported includes:

  1) For each day, the lowest measurement of RDC in mg/L in water entering the distribution system.

  2) The date and duration of each period when the RDC in water entering the distribution system fell below 0.2 mg/L and when the Agency was notified of the occurrence.

  3) The daily RDCs (in mg/L) and disinfectant contact times (in minutes) used for calculating the CT values.

  4) If chlorine is used, the daily measurements of pH of disinfected water following each point of chlorine disinfection.

  5) The daily measurements of water temperature in degrees C following each point of disinfection.

  6) The daily CTcalc and Ai values for each disinfectant measurement or sequence and the sum of all Ai values (B) before or at the first customer.

  7) The daily determination of whether disinfection achieves adequate Giardia cyst and virus inactivation, i.e., whether Ai is at least 1.0 or, where disinfectants other than chlorine are used, other indicator conditions that the Agency, pursuant to Section 611.241(a)(1), determines are appropriate, are met.

  8) The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to Section 611.240 through 611.242:

    A) Number of instances where the RDC is measured;

    B) Number of instances where the RDC is not measured but HPC is measured;

    C) Number of instances where the RDC is measured but not detected and no HPC is measured;

    D) Number of instances where no RDC is detected and where HPC is greater than 500/ml;

    E) Number of instances where the RDC is not measured and HPC is greater than 500/ml;

F) For the current and previous month the system served water to the public, the value of “V” in the following formula:

$$V = \frac{100(c + d + e)}{(a + b)}$$

where:

a = Value in subsection (b)(8)(A) of this Section

b = Value in subsection (b)(8)(B) of this Section

c = Value in subsection (b)(8)(C) of this Section

d = Value in subsection (b)(8)(D) of this Section

e = Value in subsection (b)(8)(E) of this Section

G) The requirements of subsections (b)(8)(A) through (b)(8)(F) of this Section do not apply if the Agency determines, pursuant to Section 611.213, that a system has no means for having a sample analyzed for HPC.

9) A system need not report the data listed in subsections (b)(1)~~,~~ and (b)(3) through (b)(6) of this Section, if all data listed in subsections (b)(1) through (b)(8) of this Section remain on file at the system, and the Agency determines, by special exception permit, that:

A) The system has submitted to the Agency all the information required by subsections (b)(1) through (b)(8) of this Section for at least 12 months; and

B) The Agency has determined that the system is not required to provide filtration treatment.

c) By October 10 of each year, each system must provide to the Agency a report ~~which~~ that summarizes its compliance with all watershed control program requirements specified in Section 611.232(b).

d) By October 10 of each year, each system must provide to the Agency a report on the on-site inspection conducted during that year pursuant to Section 611.232(c), unless the on-site inspection was conducted by the Agency. If the inspection was conducted by the Agency, the Agency must provide a copy of its report to the supplier.

e) Reporting health threats.

1) Each system, upon discovering that a waterborne disease outbreak potentially attributable to that water system has occurred, must report that occurrence to the Agency as soon as possible, but no later than by the end of the next business day.

2) If at any time the turbidity exceeds 5 NTU, the system must consult with the Agency as soon as practical, but no later than 24 hours after the ~~exceedance~~ exceedence is known, in accordance with the public notification requirements under Section 611.903(b)(3).

3) If at any time the RDC falls below 0.2 mg/L in the water entering the distribution system, the system must notify the Agency as soon as possible, but no later than by the end of the next business day. The system also must notify the Agency by the end of the next business day whether or not the RDC was restored to at least 0.2 mg/L within four hours.

BOARD NOTE: Derived from 40 CFR 141.75(a) ~~(1999), as amended at 65 Fed. Reg. 26022 (May 4, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.262 Filtered PWSs: Reporting and Recordkeeping

A supplier that uses a surface water source or a groundwater source under the direct influence of surface water and provides filtration treatment must report monthly to the Agency the information specified in this Section.

a) Turbidity measurements as required by Section 611.533(a) must be reported within ten days after the end of each month the supplier serves water to the public. Information that must be reported includes:

1) The total number of filtered water turbidity measurements taken during the month.

2) The number and percentage of filtered water turbidity measurements taken during the month ~~which~~ that are less than or equal to the turbidity limits specified in Section 611.250 for the filtration technology being used.

3) The date and value of any turbidity measurements taken during the month ~~which~~ that exceed 5 NTU.

b) Disinfection information specified in Section 611.533 must be reported to the Agency within ten days after the end of each month the supplier serves water to the public. Information that must be reported includes:

1) For each day, the lowest measurement of RDC in mg/L in water entering the distribution system.

2) The date and duration of each period when the RDC in water entering the distribution system fell below 0.2 mg/L and when the Agency was notified of the occurrence.

3) The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to Sections 611.240 through 611.242:

A) Number of instances where the RDC is measured;

B) Number of instances where the RDC is not measured but HPC is measured;

C) Number of instances where the RDC is measured but not detected and no HPC is measured;

D) Number of instances where no RDC is detected and where HPC is greater than 500/ml;

E) Number of instances where the RDC is not measured and HPC is greater than 500/ml;

F) For the current and previous month the supplier serves water to the public,the value of "V" in the following formula:

$$V = \frac{100(c + d + e)}{(a + b)}$$

where:

a = Value in subsection (b)(3)(A) of this Section

b = Value in subsection (b)(3)(B) of this Section

c = Value in subsection (b)(3)(C) of this Section

d = Value in subsection (b)(3)(D) of this Section

e = Value in subsection (b)(3)(E) of this Section

G) Subsections (b)(3)(A) through (b)(3)(F) of this Section do not apply if the Agency determines, pursuant to Section 611.213, that a supplier has no means for having a sample analyzed for HPC.

c) Reporting health threats.

1) Each supplier, upon discovering that a waterborne disease outbreak potentially attributable to that water system has occurred, must report that occurrence to the Agency as soon as possible, but no later than by the end of the next business day.

2) If at any time the turbidity exceeds 5 NTU, the supplier must consult with the Agency as soon as practical, but no later than 24 hours after the ~~exceedance~~ exceedence is known, in accordance with the public notification requirements under Section 611.903(b)(3).

3) If at any time the residual falls below 0.2 mg/L in the water entering the distribution system, the supplier must notify the Agency as soon as possible, but no later than by the end of the next business day. The supplier also must notify the Agency by the end of the next business day whether or not the residual was restored to at least 0.2 mg/L within four hours.

BOARD NOTE: Derived from 40 CFR 141.75(b) ~~(1999), as amended at 65 Fed. Reg. 26022 (May 4, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

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

Section 611.301 Revised MCLs for Inorganic Chemicals

a) This subsection corresponds with 40 CFR 141.62(a), reserved by USEPA. This statement maintains structural consistency with USEPA rules.

b) The MCLs in the following table apply to CWSs. Except for fluoride, the MCLs also apply to NTNCWSs. The MCLs for nitrate, nitrite, and total nitrate and nitrite also apply to transient non-CWSs.

Contaminant	MCL	Units
Antimony	0.006	mg/L

Asbestos	7	MFL
Barium	2	mg/L
Beryllium	0.004	mg/L
Cadmium	0.005	mg/L
Chromium	0.1	mg/L
Cyanide (as free CN^-)	0.2	mg/L
Fluoride	4.0	mg/L
Mercury	0.002	mg/L
Nitrate (as N)	10.	mg/L
Nitrite (as N)	1.	mg/L
Total Nitrate and Nitrite(as N)	10.	mg/L
Selenium	0.05	mg/L
Thallium	0.002	mg/L

BOARD NOTE: See Section 611.300(d) for an elevated nitrate level for non-CWSs. USEPA removed and reserved the MCL for nickel on June 29, 1995, at 60 Fed. Reg. 33932, as a result of a judicial order in Nickel Development Institute v. EPA, No. 92-1407, and Specialty Steel Industry of the U.S. v. Browner, No. 92-1410 (D.C. Cir. Feb. 23 & Mar. 6, 1995), while retaining the contaminant, analytical methodology, and detection limit listings for this contaminant.

c) USEPA has identified the following as BAT for achieving compliance with the MCL for the inorganic contaminants identified in subsection (b) ~~above~~ of this Section, except for fluoride:

Contaminant	BAT(s)
Antimony	C/F RO
Asbestos	C/F DDF CC
Barium	IX LIME RO ED
Beryllium	AA C/F IX LIME RO

Cadmium	C/F
	IX
	LIME
	RO
Chromium	C/F
	IX
	LIME, BAT for Cr(III) only
	RO
Cyanide	IX
	RO
	Cl_2
Mercury	C/F, BAT only if influent Hg concentrations less than or equal to (≤) 10 μg/L
	GAC
	LIME, BAT only if influent Hg concentrations ≤ 10 μg/L
	RO, BAT only if influent Hg concentrations ≤ 10 μg/L
Nickel	IX
	LIME
	RO
Nitrate	IX
	RO
	ED
Nitrite	IX
	RO
Selenium	AAL
	C/F, BAT for Se(IV) only
	LIME
	RO
	ED
Thallium	AAL
	IX

Abbreviations

AAL	Activated alumina
C/F	Coagulation/filtration
DDF	Direct and diatomite filtration
GAC	Granular activated carbon

IX	Ion exchange
LIME	Lime softening
RO	Reverse osmosis
CC	Corrosion control
ED	Electrodialysis
Cl_2	Oxidation (chlorine)
UV	Ultraviolet irradiation

BOARD NOTE: Derived from 40 CFR 141.62~~ (1995)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.330 ~~Radium and Gross Alpha Particle Activity~~Maximum Contaminant Levels for Radionuclides

~~The following are the MCLs for radium-226, radium-228 and gross alpha particle radioactivity:~~

~~a) Combined radium-226 and radium-228 - 5 pCi/L.~~

~~b) Gross alpha particle activity (including radium-226 but excluding radon and uranium) - 15 pCi/L.~~

a) This subsection corresponds with 40 CFR 141.66(a), marked reserved by USEPA. This statement maintains structural consistency with USEPA rules.

b) MCL for combined radium-226 and –228. The maximum contaminant level for combined radium-226 and radium-228 is 5 pCi/L. The combined radium-226 and radium-228 value is determined by the addition of the results of the analysis for radium-226 and the analysis for radium-228.

c) MCL for gross alpha particle activity (excluding radon and uranium). The maximum contaminant level for gross alpha particle activity (including radium-226 but excluding radon and uranium) is 15 pCi/L.

d) Effective December 8, 2003, MCL for beta particle and photon radioactivity.

1) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year (mrem/year).

2) Except for the radionuclides listed in the following table, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents must be calculated on the basis of two liters per day drinking water intake, using the 168-hour data list set forth in “Maximum Permissible Body Burdens and Maximum Permissible

Concentrations of Radionuclides in Air and in Water for Occupational Exposure," incorporated by reference in Section 611.102, available from the NTIS. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ must not exceed 4 mrem/year.

Average Annual Concentrations Assumed to Produce a Total Body or Organ Dose of 4 mrem/yr

Radionuclide	Critical organ	pCi per liter
1. Tritium	Total body	20,000
2. Strontium-90	Bone Marrow	8

e) MCL for uranium. Effective December 8, 2003, the maximum contaminant level for uranium is 30 μg/L.

f) Compliance dates for combined radium-226 and -228, gross alpha particle activity, gross beta particle and photon radioactivity, and uranium: Effective December 8, 2003, a CWS supplier must comply with the MCLs listed in subsections (b) through (e) of this Section beginning December 8, 2003, and compliance must be determined in accordance with the requirements of Subpart Q of this Part. Compliance with reporting requirements for the radionuclides under Appendices A, G, and H of this Part is required before December 8, 2003.

g) Best available technologies (BATs) for radionuclides. USEPA has identified the technologies indicated in the following table as the BAT for achieving compliance with the MCLs for combined radium-226 and -228, uranium, gross alpha particle activity, and beta particle and photon radioactivity.

BAT for Combined Radium-226 and Radium-228, Uranium, Gross Alpha Particle Activity, and Beta Particle and Photon Radioactivity

Contaminant	BAT
1. Combined radium-226 and radium-228	Ion exchange, reverse osmosis, lime softening.
2. Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/filtration.
3. Gross alpha particle activity (excluding Radon and Uranium)	Reverse osmosis.
4. Beta particle and photon radioactivity	Ion exchange, reverse osmosis.

h) Small systems compliance technologies list for radionuclides.

List of Small Systems Compliance Technologies for Radionuclides and Limitations to Use

Unit technologies	Limitations (see footnotes)	Operator skill level required[1]	Raw water quality range and considerations[1]
1. Ion exchange (IE)	(a)	Intermediate	All ground waters.
2. Point of use (POU[2]) IE	(b)	Basic	All ground waters.
3. Reverse osmosis (RO)	(c)	Advanced	Surface waters usually require pre-filtration.
4. POU[2] RO	(b)	Basic	Surface waters usually require pre-filtration.
5. Lime softening	(d)	Advanced	All waters.
6. Green sand filtration	(e)	Basic	
7. Co-precipitation with Barium sulfate	(f)	Intermediate to Advanced	Ground waters with suitable water quality.
8. Electrodialysis/ electrodialysis reversal		Basic to Intermediate	All ground waters.
9. Pre-formed hydrous Manganese oxide filtration	(g)	Intermediate	All ground waters.
10. Activated alumina	(a), (h)	Advanced	All ground waters; competing anion concentrations may affect regeneration frequency.
11. Enhanced coagulation/ filtration	(i)	Advanced	Can treat a wide range of water qualities.

[1] National Research Council (NRC). "Safe Water from Every Tap: Improving Water Service to Small Communities," National Academy Press, Washington, D.C. 1997.

[2] A POU, or "point-of-use" technology is a treatment device installed at a single tap used for the purpose of reducing contaminants in drinking water at that one tap. POU devices are typically installed at the kitchen tap. BOARD NOTE: USEPA refers the reader to the notice of data availability (NODA) at 66 Fed. Reg. 21576 (April 21, 2000) for more details.

Limitations Footnotes: Technologies for Radionuclides:

(a) The regeneration solution contains high concentrations of the contaminant ions. Disposal options should be carefully considered before choosing this technology.

(b) When POU devices are used for compliance, programs for long-term operation, maintenance, and monitoring must be provided by water utility to ensure proper performance.

(c) Reject water disposal options should be carefully considered before choosing this technology.

BOARD NOTE: In corresponding 40 CFR 141.66, Table C, footnote c states in part as follows: "See other RO limitations described in the SWTR Compliance Technologies Table." Table C was based in significant part on "Table 13.—Technologies for Radionuclides" that appears at 63 Fed. Reg. 42032 at 42043 (August 6, 1998), which refers to "Table 2.—SWTR Compliance Technology Table: Filtration." That Table 2 lists the limitations on RO as follows:

> [d] Blending (combining treated water with untreated raw water) cannot be practiced at risk of increasing microbial concentrations in finished water.
>
> [e] Post-disinfection recommended as a safety measure and for residual maintenance.
>
> [f] Post-treatment corrosion control will be needed prior to distribution.
>
> 63 Fed. Reg. at 42036.

(d) The combination of variable source water quality and the complexity of the water chemistry involved may make this technology too complex for small surface water systems.

(e) Removal efficiencies can vary depending on water quality.

(f) This technology may be very limited in application to small systems. Since the process requires static mixing, detention basins, and filtration, it is most applicable to systems with sufficiently high sulfate levels that already have a suitable filtration treatment train in place.

(g) This technology is most applicable to small systems that already have filtration in place.

(h) Handling of chemicals required during regeneration and pH adjustment may be too difficult for small systems without an adequately trained operator.

(i) Assumes modification to a coagulation/filtration process already in place.

Compliance Technologies by System Size Category for Radionuclide NPDWRs

	Compliance technologies[1] for system size categories (population served)		
Contaminant	25-500	501-3,300	3,300-10,000
1. Combined radium-226 and radium-228	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9
2. Gross alpha particle activity	3, 4	3, 4	3, 4

3. Beta particle activity and photon activity	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
4. Uranium	1, 2, 4, 10, 11	1, 2, 3, 4, 5, 10, 11	1, 2, 3, 4, 5, 10, 11

Note: [1] Numbers correspond to those technologies found listed in the table, "List of Small Systems Compliance Technologies for Radionuclides and Limitations to Use," set forth above.

BOARD NOTE: Derived from 40 CFR ~~141.15 (1989)~~ 141.66, as added at 65 Fed. Reg. 76748 (December 7, 2000), effective December 8, 2003.

(Source: Former Section 611.330 repealed and new Section 611.330 adopted at 25 Ill. Reg. ________, effective ______________________)

Section 611.331 Beta Particle and Photon Radioactivity

The following provisions apply until December 8, 2003:

a) The average annual concentration of beta particle and photon radio-activity from man-made radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than 4 mrem/year.

b) Except for the radionuclides listed below, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents must be calculated on the basis of a 2 liter per day drinking water intake using the 168 hour data 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. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ must not exceed 4 mrem/year.

AVERAGE ANNUAL CONCENTRATIONS ASSUMED TO PRODUCE A TOTAL BODY OR ORGAN DOSE OF 4 mrem/year

Radionuclide	Critical Organ	pCi/L
Tritium	Total body	20,000
Strontium-90	Bone marrow	8

BOARD NOTE: Derived from 40 CFR 141.16 (1989), as removed at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003.

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

SUBPART G: LEAD AND COPPER

Section 611.350 General Requirements

a) Applicability and Scope

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

2) Scope. This Subpart 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, the following terms ~~shall~~ have the following meanings:

“Action level” means that concentration of lead or copper in water computed pursuant to subsection (c) ~~below~~ of this Section that determines, in some cases, the treatment requirements of this Subpart ~~which~~ 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 ~~6~~ 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)~~ (1994)~~ (2000) (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)~~ (1994)~~ (2000).

“Monitoring period” means any of the six-month periods of time during which a supplier must complete a cycle of monitoring under this Subpart.
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 ~~10~~ 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 ~~shall~~ must be determined pursuant to subsection (c)(3) ~~below~~ of this Section.

BOARD NOTE: Derived from 40 CFR 141.80(c) ~~(1994)~~ (2000).

"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) ~~(1994)~~ (2000).

"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 ~~6~~ 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 ~~(1994)~~ (2000).

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 ~~shall~~ 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 ~~shall~~ 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) ~~above~~ of this Section is the 90th percentile contaminant level.

D) For suppliers that collect ~~5~~ five samples per six-month monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

d) Corrosion Control Treatment Requirements:

1) All suppliers ~~shall~~ 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) ~~above~~ of this Section.

e) Source water treatment requirements. Any supplier whose system exceeds the lead or copper action level ~~shall~~ 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 ~~shall~~ must complete the lead service line replacement requirements contained in Section 611.354.

g) Public education requirements. Any supplier whose system exceeds the lead action level ~~shall~~ must implement the public education requirements contained in Section 611.355.

h) Monitoring and analytical requirements. Suppliers ~~shall~~ 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 in compliance with Sections 611.356, 611.357, 611.358, and 611.359.

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

j) Recordkeeping requirements. Suppliers ~~shall~~ 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, including conditions imposed by the Agency by special exception permit (SEP) pursuant to these provisions, ~~shall~~ will constitute a violation of the national primary drinking water regulations for lead or copper.

BOARD NOTE: Derived from 40 CFR 141.80 ~~(1994)~~ (2000).

(Source: Amended at 25 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 criteriaspecified 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 complete a round of monitoring pursuant to this subsection (b) no later than September 30, 2000.

BOARD NOTE: USEPA specified September 30, 2000 at 40 CFR 141.81(b)(3)(ii) ~~(1999), as amended at 65 Fed. Reg. 2004 (Jan. 12, 2000)~~ (2000). In order to remain identical-in-substance and to retain State primacy, the Board retained this date despite the fact that this Section became effective after that date.

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 change in treatment or the addition of a new source. 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.

D) As of July 12, 2001, 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 ~~exceedance~~ 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 conduct initial monitoring (Sections 611.356(d)(1) and 611.357(b)) during two consecutive six-month monitoring periods on or before January 1, 1993.

BOARD NOTE: USEPA specified January 1, 1993 at 40 CFR 141.81(d)(1) ~~(1999)~~ (2000). In order to remain identical-in-substance and to retain State primacy, the Board retained this date despite the fact that this Section became effective after that date.

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

3) Step 3: The Agency must approve 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 install optimal corrosion control treatment (Section 611.352(e)) by January 1, 1997.

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

6) Step 6: The Agency must review 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 it exceeds one of the action levels.

2) Step 2: Within 12 months after 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 following timeframes:

A) for medium-sized systems, within 18 months after such supplier exceeds the lead action level or the copper action level,

B) for small systems, within 24 months after 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 ~~(1999), as amended at 65 Fed. Reg. 2004 (Jan. 12, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.353 Source Water Treatment

Suppliers ~~shall~~ must complete the applicable source water monitoring and treatment requirements (described in the referenced portions of subsection (b) ~~below~~ 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 ~~shall~~ must complete lead and copper and source water monitoring (Section 611.358(b)) and make a treatment recommendation to the Agency (subsection (b)(1) ~~below~~ of this Section) within ~~6~~ six months after exceeding the pertinent action level.

2) Step 2: The Agency ~~shall~~ must, by a SEP issued pursuant to Section 611.110, make a determination regarding source water treatment (subsection (b)(2) ~~below~~ of this Section) within ~~6~~ six months after submission of monitoring results under step 1.

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

4) Step 4: The supplier ~~shall~~ 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 ~~shall~~ 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) ~~below~~ of this Section) within ~~6~~ six months after completion of step 4.

6) Step 6: The supplier ~~shall~~ must operate in compliance with the Agency-specified lead and copper MPCs (subsection (b)(4) ~~below~~ 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 ~~shall~~ must recommend in writing to the Agency the installation and operation of one of the source water treatments listed in subsection (b)(2) ~~below~~ 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 ~~shall~~ 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 ~~shall~~ 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 ~~shall~~ 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 ~~shall~~ must properly install and operate the source water treatment approved by the Agency under subsection (b)(2) ~~above~~ of this Section.

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

A) The Agency ~~shall~~ 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 ~~shall~~ 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 ~~shall~~ must reflect the contaminant removal capability of the treatment properly operated and maintained.

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

5) Continued operation and maintenance. Each supplier ~~shall~~ 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) ~~above~~ 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) ~~above~~ of this Section, or the lead and copper MPCs under subsection (b)(4) ~~above~~ of this Section.

B) A request for modification by a supplier ~~shall~~ 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) ~~above~~ of this Section ~~shall~~ 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) ~~above~~ 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.

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) ~~above~~ 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:

A) the Agency has failed to issue a treatment determination by the applicable deadline contained in subsection (a) ~~above~~ 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 ~~(1992)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.356 Tap Water Monitoring for Lead and Copper

a) Sample 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) ~~(1999)~~ (2000). 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) ~~(1999)~~ (2000). 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) ~~(1999)~~ (2000).

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) ~~(1999)~~ (2000). 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) ~~(1999)~~ (2000).

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) ~~(1999)~~ (2000).

  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) ~~(1999)~~ (2000).

  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) ~~(1999)~~ (2000).

  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) ~~(1999), as amended at 65 Fed. Reg. 2007 (Jan. 12, 2000)~~ (2000).

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) ~~(1999)~~ (2000).

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) ~~(1999)~~ (2000).

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) ~~(1999), as amended at 65 Fed. Reg. 2007 (Jan. 12, 2000)~~ (2000).

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) ~~(1999), as renumbered and amended at 65 Fed. Reg. 2007 (Jan. 12, 2000)~~ (2000). 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, 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), 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 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. 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 monitor during each of two consecutive six-month monitoring periods before the date specified in Section 611.351(d)(5).

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 the date 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 the date 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.

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

i) 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 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) ~~above~~ of this Section if it receives written approval from the Agency in the form of a SEP granted pursuant to Section 611.110.

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 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 ~~of monitoring~~ 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.

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 ~~month~~ 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.

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 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).

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 the Agency in writing in accordance with Section 611.360(a)(3). 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.

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)(i) through (d)(4)(H)(iii) are derived from 40 CFR 141.86(d)(4)(vi)(B)(*1*) through (d)(4)(vi)(B)(*3*)~~, as added at 65 Fed. Reg. 2009 (January 12, 2000)~~ (2000), 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 ~~which~~ that contain lead plasticizers, or plastic service lines ~~which~~ 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 and/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.

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 ~~subsection~~ subsections (d)(1) through (d)(4) of this Section, as appropriate.

C) If a 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). 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~~ of this Part~~.

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 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:

BOARD NOTE: Corresponding 40 CFR 141.86(g)(7) sets forth the April 11, 2000 date. The Board has retained that date to maintain consistency with the federal requirements, despite the fact that this subsection (g)(7) became effective after that date.

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 ~~has~~ 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 meets 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: Corresponding 40 CFR 141.86(g)(7)(ii) sets forth the September 30, 2000 date. The Board has retained that date to maintain consistency with the federal requirements, despite the fact that this subsection (g)(7)(B) became effective after that date.

BOARD NOTE: Derived from 40 CFR 141.86 ~~(1999), as amended at 65 Fed. Reg. 2007 (Jan. 12, 2000)~~ (2000).

(Source: Amended at 25 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 systems. 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~~ six-month period to begin on the date the State specifies the optimal values under Section 611.352(f).

2) Small and medium-sized systems. 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 ~~exceedance~~ exceedence, the end of the applicable six-month period under this subsection must coincide with the end 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.

      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.

   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 during two consecutive monitoring periods:

      i) 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)~~ 611.359(a)(1)(B),

      ii) 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 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).

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 systems. 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 ~~(1999), as amended at 65 Fed. Reg. 2010 (Jan. 12, 2000)~~ (2000).

(Source: Amended at 25 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 ~~which~~ 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 ~~exceedance~~ 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 six months after the ~~exceedance~~ exceedence.

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 the deadline 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.

B) A SWS or mixed system supplier must collect samples annually, the first annual monitoring period to begin on the date on 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) 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) 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~~ (1999), as amended at 65 Fed. Reg. 2012 (Jan. 12, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.510 Special Monitoring for Unregulated Contaminants

a) Monitoring for Phase I unregulated contaminants.

1) All CWS and NTNCWS suppliers ~~shall~~ must begin monitoring for the contaminants listed in subsection (a)(5) no later than the ~~the~~ following dates:

A) Less than 3300 persons served: January 1, 1991.

B) 3300 to 10,000 persons served: January 1, 1989.

C) More than 10,000 persons served: January 1, 1988.

2) SWS and mixed system suppliers ~~shall~~ must sample at points in the distribution system representative of each water source or at entry points to the distribution system after any application of treatment. The minimum number of samples is one year of quarterly samples per water source.

3) GWS suppliers ~~shall~~ must sample at points of entry to the distribution system representative of each well after any application of treatment. The minimum number of samples is one sample per entry point to the distribution system.

4) The Agency may issue a SEP pursuant to Section 610.110 to require a supplier to use a confirmation sample for results that it finds dubious for whatever reason. The Agency must state its reasons for issuing the SEP if the SEP is Agency-initiated.

5) List of Phase I unregulated chemical contaminants:

Bromobenzene
Bromodichloromethane
Bromoform
Bromomethane
Chlorobenzene
Chlorodibromomethane
Chloroethane
Chloroform
Chloromethane
o-Chlorotoluene
p-Chlorotoluene
Dibromomethane
m-Dichlorobenzene
1,1-Dichloroethane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
1,3-Dichloropropene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
1,2,3-Trichloropropane

6) This subsection corresponds with 40 CFR 141.40(f), reserved by USEPA. This statement maintains structural consistency with USEPA rules.

7) Analyses performed pursuant to subsection (a) ~~shall~~ must be conducted using the following USEPA Organic Methods: Methods 502.2 or 524.2 or their equivalent as approved by the Agency, except that analyses for bromodichloromethane, bromoform, chlorodibromomethane, and chloroform may also be performed using USEPA Organic Methods: Method 551, and analyses for 1,2,3-trichloropropane may also be performed using USEPA Organic Methods: Method 504.1, all of which are incorporated by reference in Section 611.102.

BOARD NOTE: Subsection ~~(b)~~ (a) derived from 40 CFR 141.40(a) through (m) ~~(1995)~~ (2000). The Board has adopted no counterpart to 40 CFR 141.40(h), which the Board has codified at subsection (c) ~~below~~ of this Section; 141.40(i), which pertains to the ability of suppliers to grandfather data up until a date long since expired; 141.41(j), an optional USEPA provision relating to monitoring 15 additional contaminants that USEPA does not require for state programs; 141.40(k), which pertains to notice to the Agency by smaller suppliers up until a date long since expired in lieu of sampling; 141.40(l), which the Board has adopted at subsection (d) ~~below~~ of this Section; and 141.40(m), an optional provision that pertains to composite sampling. Otherwise, the structure of this Section directly corresponds with 40 CFR 141.40(a) through (m) ~~(1995)~~ (2000).

b) Monitoring for Phase V unregulated contaminants. Monitoring of the unregulated organic contaminants listed in subsection (b)(11) ~~below~~ of this Section and the unregulated inorganic contaminants listed in subsection (b)(12) ~~below~~ of this Section ~~shall~~ must be conducted as follows:

1) Each CWS and NTNCWS supplier ~~shall~~ must take four consecutive quarterly samples at each sampling point for each contaminant listed in subsection (b)(11) ~~below~~ of this Section and report the results to the Agency. Monitoring must be completed by December 31, 1995.

2) Each CWS and NTNCWS supplier ~~shall~~ must take one sample at each sampling point for each contaminant listed in subsection (b)(12) ~~below~~ of this Section and report the results to the Agency. Monitoring must be completed by December 31, 1995.

3) Each CWS and NTNCWS supplier may apply to the Agency for a SEP pursuant to Section 611.110 that releases it from any of the requirements of subsections (b)(1) and (b)(2) ~~above~~ of this Section.

4) The Agency ~~shall~~ must grant a SEP pursuant to Section 611.110 as follows:

A) From any requirement of subsection (b)(1) ~~above~~ of this Section based on consideration of the factors set forth at Section 611.110(e), and

B) From any requirement of subsection (b)(2) ~~above~~ of this Section if previous analytical results indicate contamination would not occur, provided this data was collected after January 1, 1990.

5) A GWS supplier ~~shall~~ must take a minimum of one sample at every entry point to the distribution system that is representative of each well after treatment (“sampling point”).

6) A SWS or mixed system supplier ~~shall~~ must take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the system after treatment ("sampling point").

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

8) The Agency may issue a SEP pursuant to Section 610.110 to require a supplier to use a confirmation sample for results that it finds dubious for whatever reason. The Agency must state its reasons for issuing the SEP if the SEP is Agency-initiated.

9) Suppliers ~~shall~~ must take samples at the same sampling point unless the Agency has granted a SEP allowing another sampling point because conditions make another sampling point more representative of the water from each source or treatment plant.

BOARD NOTE: Subsection (b)(9) ~~above~~ of this Section corresponds with duplicate segments of 40 CFR 141.40(n)(5) and (n)(6) ~~(1995)~~ (2000), which correspond with subsections (b)(5) and (b)(6) ~~above~~ of this Section. The Board has adopted no counterpart to 40 CFR 141.40(n)(9), an optional provision that pertains to composite sampling. Otherwise, the structure of this Section directly corresponds with 40 CFR 141.40(n) ~~(1995)~~ (2000).

10) Instead of performing the monitoring required by this subsection, a CWS and NTNCWS supplier serving fewer than 150 service connections may send a letter to the Agency stating that the PWS is available for sampling. This letter must be sent to the Agency by January 1, 1994. The supplier ~~shall~~ must not send such samples to the Agency, unless requested to do so by the Agency.

11) List of Phase V unregulated organic contaminants with methods required for analysis (all methods are from USEPA Organic Methods unless otherwise noted; all are incorporated by reference in Section 611.102):

Contaminant	USEPA Organic Methods
Aldicarb	531.1, Standard Methods, 18th ed.: Method 6610
Aldicarb sulfone	531.1, Standard Methods, 18th ed.: Method 6610

Aldicarb sulfoxide	531.1, Standard Methods, 18th ed.: Method 6610
Aldrin	505, 508, 508.1, 525.2
Butachlor	507, 525.2
Carbaryl	531.1, Standard Methods, 18th ed.: Method 6610
Dicamba	515.1, 515.2, 555
Dieldrin	505, 508, 508.1, 525.2
3-Hydroxycarbofuran	531.1, Standard Methods, 18th ed.: Method 6610
Methomyl	531.1, Standard Methods, 18th ed.: Method 6610
Metolachlor	507, 508.1, 525.2
Metribuzin	507, 508.1, 525.2
Propachlor	508, 508.1, 525.2

12) List of unregulated inorganic contaminants (all methods indicated are incorporated by reference in Section 611.102):

Contaminant	Methods
Sulfate	USEPA Environmental Inorganic Methods: Methods 300.0, 375.2; ASTM Method D 4327-91; Standard Methods, 18th ed.: Methods 4110, 4500-SO_4^{2-} F, 4500-SO_4^{2-} C & 4500-SO_4^{2-} D

BOARD NOTE: Subsection (b) derived from 40 CFR 141.40(n) ~~(1995)~~ (2000).

c) Analyses performed pursuant to this Section must be conducted by a laboratory certified pursuant to Section 611.646(q).

BOARD NOTE: Subsection (c) derived from 40 CFR 141.40 (h) ~~(1995)~~ (2000).

d) All CWS and NTNCWS suppliers ~~shall~~ must repeat the monitoring required by this Section no less frequently than every five years, starting from the dates specified in subsections (a)(1) and (b)(2) ~~above~~ of this Section.

BOARD NOTE: Subsection (d) derived from 40 CFR 141.40 (l) ~~(1995)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

SUBPART L: MICROBIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.521 Routine Coliform Monitoring

a) Suppliers ~~shall~~ must collect total coliform samples at sites ~~which~~ that are representative of water throughout the distribution system according to a written sample siting plan, which must be approved by special exception permit.

b) The monitoring frequency for total coliforms for CWSs is based on the population served by the CWS, as set forth in Section 611.Table A.

c) The monitoring frequency for total coliforms for non-CWSs is as follows:

1) A non-CWS using only groundwater (except groundwater under the direct influence of surface water, as determined in Section 611.212) and serving 1,000 persons or fewer ~~shall~~ must monitor each calendar quarter that the system provides water to the public, except that the Agency ~~shall~~ must reduce this monitoring frequency if a sanitary survey shows that the system is free of sanitary defects. Beginning June 29, 1994, the Agency cannot reduce the monitoring frequency for a non-CWS using only groundwater (except groundwater under the direct influence of surface water) and serving 1,000 persons or fewer to less than once per year.

2) A non-CWS using only groundwater (except groundwater under the direct influence of surface water) and serving more than 1,000 persons during any month ~~shall~~ must monitor at the same frequency as a like-sized CWS, as specified in subsection (b) ~~above~~ of this Section, except the Agency ~~shall~~ must reduce this monitoring frequency for any month the system serves 1,000 persons or fewer. ~~the~~ The Agency cannot reduce the monitoring to less than once per year. For systems using groundwater under the direct influence of surface water, subsection (c)(4) ~~below~~ of this Section applies.

3) A non-CWS using surface water, in total or in part, ~~shall~~ must monitor at the same frequency as a like-sized CWS, as specified in subsection (b) ~~above~~ of this Section, regardless of the number of persons it serves.

4) A non-CWS using groundwater under the direct influence of surface water~~,~~ ~~shall~~ must monitor at the same frequency as a like-sized CWS, as specified in subsection (b) ~~above~~ of this Section. The supplier ~~shall~~ must begin monitoring at this frequency beginning six months after Public Health determines that the groundwater is under the direct influence of surface water.

d) The supplier ~~shall~~ must collect samples at regular time intervals throughout the month, except that a supplier ~~which~~ that uses only groundwater (except groundwater under the direct influence of surface water) and serves 4,900 persons or fewer, may collect all required samples on a single day if they are taken from different sites.

e) A PWS that uses surface water or groundwater under the direct influence of surface water, and does not practice filtration in compliance with Subpart B of this Part, ~~shall~~ must collect at least one sample near the first service connection each day the turbidity level of the source water, measured as specified in Section 611.532(b), exceeds 1 NTU. This sample must be analyzed for the presence of total coliforms. When one or more turbidity measurements in any day exceed 1 NTU, the supplier ~~shall~~ must collect this coliform sample within 24 hours of the first ~~exceedance~~ exceedence, unless the Agency has determined, by special exception permit, that the supplier, for logistical reasons outside the supplier's control, cannot have the sample analyzed within 30 hours of collection. Sample results from this coliform monitoring must be included in determining compliance with the MCL for total coliforms in Section 611.325.

f) Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement or repair, must not be used to determine compliance with the MCL for total coliforms in Section 611.325.

BOARD NOTE: Derived from 40 CFR 141.21(a) ~~(1989), as amended at 54 Fed. Reg. 27562, June 29, 1989~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.601 Monitoring Frequency

Monitoring ~~shall~~ must be conducted as follows:

a) Required sampling.

1) Each supplier ~~shall~~ must take a minimum of one sample at each sampling point at the times required by Section 611.610 beginning in the initial compliance period.

2) Each sampling point must produce samples that are representative of the water from each source after treatment or from each treatment plant, as required by subsection (b) ~~below~~ of this Section. The total number of

sampling points must be representative of the water delivered to users throughout the PWS.

3) The supplier ~~shall~~ must take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant and the Agency has granted a SEP pursuant to subsection (b)(5) ~~below~~ of this Section.

b) Sampling points.

1) Sampling points for GWSs. Unless otherwise provided by SEP, a GWS supplier ~~shall~~ must take at least one sample from each of the following points: each entry point that is representative of each well after treatment.

2) Sampling points for SWSs and mixed systems. Unless otherwise provided by SEP, a SWS or mixed system supplier ~~shall~~ must take at least one sample from each of the following points:

A) Each entry point after the application of treatment; or

B) A point in the distribution system that is representative of each source after treatment.

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

4) Additional sampling points. The Agency ~~shall~~ must, by SEP, designate additional sampling points in the distribution system or at the consumer's tap if it determines that such samples are necessary to more accurately determine consumer exposure.

5) Alternative sampling points. The Agency ~~shall~~ must, by SEP, approve alternate sampling points if the supplier demonstrates that the points are more representative than the generally required point.

c) This subsection corresponds with 40 CFR 141.23(a)(4), an optional USEPA provision relating to compositing of samples that USEPA does not require for state programs. This statement maintains structural consistency with USEPA rules.

d) The frequency of monitoring for the following contaminants must be in accordance with the following Sections:

1) Asbestos: Section 611.602;

2) Antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, and thallium: Section 611.603;

3) Nitrate: Section 611.604; and

4) Nitrite: Section 611.605.

BOARD NOTE: Derived from 40 CFR 141.23(a) and (c)~~ (1995)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.602 Asbestos Monitoring Frequency

The frequency of monitoring conducted to determine compliance with the MCL for asbestos in Section 611.301 is as follows:

a) Unless the Agency has determined under subsection (c) that the PWS is not vulnerable, each CWS and NTNCWS supplier ~~shall~~ must monitor for asbestos during the first compliance period of each compliance cycle, beginning January 1, 1993.

b) CWS suppliers may apply to the Agency, by way of an application for a SEP under Section 611.110, for a determination that the CWS is not vulnerable based on consideration of the criteria listed in subsection (c)~~ below~~ of this Section.

c) The Agency ~~shall~~ must determine that the CWS is "not vulnerable" if the CWS is not vulnerable to contamination either from asbestos in its source water, from corrosion of asbestos-cement pipe, or from both, based on a consideration of the following factors:

    1) Potential asbestos contamination of the water source; and

    2) The use of asbestos-cement pipe for finished water distribution and the corrosive nature of the water.

d) A SEP based on a determination that a CWS is not vulnerable to asbestos contamination expires at the end of the compliance cycle for which it was issued.

e) A supplier of a PWS vulnerable to asbestos contamination due solely to corrosion of asbestos-cement pipe ~~shall~~ must take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

f) A supplier of a PWS vulnerable to asbestos contamination due solely to source water ~~shall~~ must monitor in accordance with Section 611.601.

g) A supplier of a PWS vulnerable to asbestos contamination due both to its source water supply and corrosion of asbestos-cement pipe ~~shall~~ must take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

h) A supplier that exceeds the MCL, as determined in Section 611.609, ~~shall~~ must monitor quarterly beginning in the next quarter after the violation occurred.

i) Reduction of quarterly monitoring.

  1) The Agency ~~shall~~ must issue a SEP pursuant to Section 611.110 that reduces the monitoring frequency to that specified by subsection (a) if it determines that the sampling point is reliably and consistently below the MCL.

  2) The request must, at a minimum, include the following information:

    A) For a GWS: two quarterly samples.

    B) For an SWS or mixed system: four quarterly samples.

  3) In issuing a SEP, the Agency ~~shall~~ must specify the level of the contaminant upon which the "reliably and consistently" determination was based. All SEPs that allow less frequent monitoring based on an Agency "reliably and consistently" determination ~~shall~~ must include a condition requiring the supplier to resume quarterly monitoring pursuant to subsection (h) ~~above~~ of this Section if it violates the MCL specified by Section 611.609.

j) If the Agency determines that data collected after January 1, 1990 are generally consistent with the requirements of this Section, it may grant a SEP pursuant to Section 611.110 that allows the supplier to use those data to satisfy the requirements of this Section for the compliance period beginning January 1, 1993.

BOARD NOTE: Derived from 40 CFR 141.23(b) ~~(1993)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.603 Inorganic Monitoring Frequency

The frequency of monitoring conducted to determine compliance with the revised MCLs in Section 611.301 for antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, and thallium is as follows:

a) Suppliers ~~shall~~ must take samples at each sampling point, beginning in the initial compliance period, as follows:

1) For GWSs: at least one sample during each compliance period;

2) For SWSs and mixed systems: at least one sample each year.

BOARD NOTE: Derived from 40 CFR 141.23(c)(1) ~~(1994)~~ (2000).

b) SEP Application.

1) The supplier may apply to the Agency for a SEP that allows reduction from the monitoring frequencies specified in subsection (a) ~~above~~ of this Section pursuant to subsections (d) through (f) ~~below~~ of this Section and Section 611.110.

2) The supplier may apply to the Agency for a SEP that relieves it of the requirement for monitoring cyanide pursuant to subsections (d) through (f) ~~below~~ of this Section and Section 611.110 if it can demonstrate that its system is not vulnerable due to a lack of any industrial source of cyanide.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(2) and (c)(6) ~~(1994)~~ (2000).

c) SEP Procedures. The Agency ~~shall~~ must review the request pursuant to the SEP procedures of Section 611.110 based on consideration of the factors in subsection (e) ~~below~~ of this Section.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(6) ~~(1994)~~ (2000).

d) Standard for SEP reduction in monitoring. The Agency ~~shall~~ must grant a SEP that allows a reduction in the monitoring frequency if the supplier demonstrates that all previous analytical results were less than the MCL, provided the supplier meets the following minimum data requirements:

1) For GWS suppliers: a minimum of three rounds of monitoring.

2) For SWS and mixed system suppliers: annual monitoring for at least three years.

3) At least one sample must have been taken since January 1, 1990.

4) A supplier that uses a new water source is not eligible for a SEP until it completes three rounds of monitoring from the new source.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(4) ~~(1994)~~ (2000).

e) Standard for SEP monitoring conditions. As a condition of any SEP, the Agency ~~shall~~ must require that the supplier take a minimum of one sample during the term of the SEP. In determining the appropriate reduced monitoring frequency, the Agency ~~shall~~ must consider:

1) Reported concentrations from all previous monitoring;

2) The degree of variation in reported concentrations; and

3) Other factors may affect contaminant concentrations, such as changes in groundwater pumping rates, changes in the CWSs configuration, the CWS's operating procedures, or changes in stream flows or characteristics.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(3) and (c)(5) ~~(1994)~~ (2000).

f) SEP Conditions and Revision.

1) A SEP will expire at the end of the compliance cycle for which it was issued.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(3) ~~(1994)~~ (2000).

2) In issuing a SEP, the Agency ~~shall~~ must specify the level of the contaminant upon which the "reliably and consistently" determination was based. A SEP must provide that the Agency will review and, where appropriate, revise its determination of the appropriate monitoring frequency when the supplier submits new monitoring data or when other data relevant to the supplier's appropriate monitoring frequency become available.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(6) ~~(1994)~~ (2000).

g) A supplier that exceeds the MCL for antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium, as determined in Section 611.609, ~~shall~~ must monitor quarterly for that contaminant, beginning in the next quarter after the violation occurred.

BOARD NOTE: Derived from 40 CFR 141.23(c)(7) ~~(1994)~~ (2000).

h) Reduction of quarterly monitoring.

1) The Agency ~~shall~~ must grant a SEP pursuant to Section 611.110 that reduces the monitoring frequency to that specified by subsection (a) ~~above~~ of this Section if it determines that the sampling point is reliably and consistently below the MCL.

2) A request for a SEP must include the following minimal information:

A) For a GWS: two quarterly samples.

B) For an SWS or mixed system: four quarterly samples.

3) In issuing the SEP, the Agency ~~shall~~ must specify the level of the contaminant upon which the “reliably and consistently” determination was based. All SEPs that allow less frequent monitoring based on an Agency “reliably and consistently” determination ~~shall~~ must include a condition requiring the supplier to resume quarterly monitoring for any contaminant pursuant to subsection (g)~~ above~~ of this Section if it violates the MCL specified by Section 611.609 for that contaminant.

BOARD NOTE: Derived from 40 CFR 141.23(c)(8)~~ (1994)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.609 Determining Compliance

Compliance with the MCLs of Sections 611.300 or 611.301 (as appropriate) must be determined based on the analytical result(s) obtained at each sampling point.

a) For suppliers that monitor at a frequency greater than annual, compliance with the MCLs for antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium is determined by a running annual average at each sampling point.

1) If the average at any sampling point is greater than the MCL, then the supplier is out of compliance.

2) If any one sample would cause the annual average to be exceeded, then the supplier is out of compliance immediately.

3) Any sample below the method detection limit must be calculated at zero for the purpose of determining the annual average.

BOARD NOTE: The “method detection limit” is different from the “detection limit~~”~~,” as set forth in Section 611.600. The “method detection limit” is the level of contaminant that can be determined by a particular method with a 95 percent degree of confidence, as determined by the method outlined in 40 CFR 136, ~~appendix~~ Appendix B, incorporated by reference at Section 611.102.

b) For suppliers that monitor annually or less frequently, compliance with the MCLs for ~~antimoney~~ antimony, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium is determined by the level of the contaminant at any sampling point. If a confirmation sample is taken, the determination of compliance will be based on the average of the two samples.

c) Compliance with the MCLs for nitrate and nitrite is determined based on one sample if the levels of these contaminants are below the MCLs. If the levels of nitrate or nitrite exceed the MCLs in the initial sample, Section 611.606 requires confirmation sampling, and compliance is determined based on the average of the initial and confirmation samples.

d) When the portion of the distribution system that is out of compliance is separable from other parts of the distribution system and has no interconnections, the supplier may give the public notice required by Subpart T only to persons served by that portion of the distribution system not in compliance.

BOARD NOTE: Derived from 40 CFR 141.23(i) ~~(1994)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.720 Analytical Methods

a) The methods specified below, incorporated by reference in Section 611.102, are to be used to determine compliance with ~~Sections~~ Section 611.330 ~~and 611.331~~, except in cases where alternative methods have been approved in accordance with Section 611.480.

1) Gross Alpha and Beta:

A) ASTM Method 302;

B) Standard Methods:

i) Method 302; or

ii) Method 7110 B;

C) USEPA Interim Radiochemical Methods: page 1;

D) USEPA Radioactivity Methods: Method 900;

E) USEPA Radiochemical Analyses: page 1;

F) USEPA Radiochemistry Methods: Method 00-01; or

G) USGS Methods: Method R-1120-76

2) Gross Alpha:

A) Standard Methods: Method 7110 C; or

B) USEPA Radiochemistry Methods: Method 00-02.

3) Radium-226:

A) ASTM Methods:

i) Method D-2460-90; or

ii) Method D-3454-91;

B) New York Radium Method;

C) Standard Methods:

i) Method 304;

ii) Method 305;

iii) Method 7500-Ra B; or

iv) Method 7500-Ra C;

D) USDOE Methods: Method Ra-05;

E) USEPA Interim Radiochemical Methods: pages 13 and 16;

F) USEPA Radioactivity Methods: Methods 903, 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.

4) Radium-228:

  - A) Standard Methods:

    - i) Method 304; or

    - ii) Method 7500-Ra D;

  - B) New York Radium Method;

  - C) USEPA Interim Radiochemical Methods: page 24;

  - D) USEPA Radioactivity Methods: Method 904;

  - 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.

5) Uranium:

  - A) ASTM Methods:

    - i) Method D-2907;

    - ii) Method D-2907-91;

    - iii) Method D 3972-90; or

    - iv) Method D 5174-91;

  - B) USEPA Radioactivity Methods: Methods 908, 908.1;

  - C) USEPA Radiochemical Analyses: page 33;

  - D) USEPA Radiochemistry Methods: Method 00-07; or

  - E) USGS Methods:

    - i) Method R-1180-76;

ii) Method R-1181-76; or

iii) Method R-1182-76.

6) Cesium:

A) ASTM Methods:

i) Method D 2459-72; or

ii) Method D 3649-91;

B) Standard Methods:

i) Method 7120 (19th ed.); or

ii) Method 7500-Cs B;

C) USDOE Methods: Method 4.5.2.3;

D) USEPA Interim Radiochemical Methods: page 4;

E) USEPA Radioactivity Methods: Methods 901, 901.1;

F) USEPA Radiochemical Analyses: page 92; or

G) USGS Methods:

i) Method R-1110-76; or

ii) Method R-1111-76.

7) Iodine:

A) ASTM Methods:

i) D 3649-91; or

ii) D 4785-88;

B) Standard Methods:

i) Method 7120 (19th ed.);

ii) Method 7500-I B;

        - iii) Method 7500-I C; or
        - iv) Method 7500-I D;
    - C) USDOE Methods: 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.
- 8) Strontium-89 & 90:
    - A) Standard Methods:
        - i) Method 303; or
        - ii) Method 7500-Sr B;
    - B) USDOE Methods:
        - i) Method Sr-01; or
        - ii) Method Sr-02;
    - C) USEPA Interim Radiochemical Methods: page 29;
    - D) USEPA Radioactivity Methods: Method 905;
    - 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 D 4107-91;
    - B) Standard Methods:
        - i) Method 306; or
        - ii) Method 7500-3H B;

C) USEPA Interim Radiochemical Methods: page 34;

D) USEPA Radioactivity Methods: Method 906;

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 D 3649-91; or

ii) Method D 4785-88;

B) Standard Methods:

i) Method 7120 (19th ed.);

ii) Method 7500-Cs B; or

iii) Method 7500-I B;

C) USDOE Method: Method 4.5.2.3;

D) USEPA Radioactivity Methods: Methods 901, 901.1, 902;

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) 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 (1.96 sigma where sigma is the standard deviation of the net counting rate of the sample).

1) To determine compliance with Section 611.330~~(a)~~(b), (c), and (e), the detection limit must not exceed ~~1 pCi/L. To determine compliance with Section 611.330(b) the detection limit must not exceed 3 pCi/L.~~ 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	None

BOARD NOTE: Derived from 40 CFR 141.25(c) Table B, as added at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003.

2) To determine compliance with Section ~~611.331~~ 611.330(d), the detection limits must not exceed the concentrations listed in ~~that Section.~~ the following table:

~~3) The detection limits for man-made beta particle and photon emitters to determine the applicability of Section 611.881 are 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 ~~B (1998)~~ C (2000), as renumbered at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003.

d) To judge compliance with the MCLs listed in ~~Sections~~ Section 611.330 ~~and 611.331~~, 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 ~~(1998)~~ (2000), as amended at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003.

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.731 Gross Alpha

Monitoring requirements for gross alpha particle activity, radium-226, ~~and~~ radium-228, and uranium are as follows:

a) Effective December 8, 2003, a community water system (CWS) supplier must conduct initial monitoring to determine compliance with Section 611.330(b), (c), and (e) by December 31, 2007. For the purposes of monitoring for gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity in drinking water, "detection limit" is defined as in Section 611.720(c).

1) Applicability and sampling location for an existing CWS supplier. An existing CWS supplier using groundwater, surface water, or both groundwater and surface water (for the purpose of this Section hereafter referred to as a supplier) must sample at every entry point to the distribution system that is representative of all sources being used (hereafter called a sampling point) under normal operating conditions. The supplier must take each sample at the same sampling point unless conditions make another sampling point more representative of each source or the Agency has designated a distribution system location, in accordance with subsection (b)(2)(C) of this Section.

2) Applicability and sampling location for a new CWS supplier. A new CWS supplier or a CWS supplier that uses a new source of water must begin to conduct initial monitoring for the new source within the first quarter after initiating use of the source. A CWS supplier must conduct more frequent monitoring when ordered by the Agency in the event of possible contamination or when changes in the distribution system or treatment processes occur that may increase the concentration of radioactivity in finished water.

b) Initial monitoring: Effective December 8, 2003, a CWS supplier must conduct initial monitoring for gross alpha particle activity, radium-226, radium-228, and uranium as follows:

1) A CWS supplier without acceptable historical data, as defined in subsection (b)(2) of this Section, must collect four consecutive quarterly samples at all sampling points before December 31, 2007.

2) Grandfathering of data: A CWS supplier may use historical monitoring data collected at a sampling point to satisfy the initial monitoring requirements for that sampling point, under the following situations.

A) To satisfy initial monitoring requirements, a CWS supplier having only one entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.

B) To satisfy initial monitoring requirements, a CWS supplier with multiple entry points and having appropriate historical monitoring data for each entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.

C) To satisfy initial monitoring requirements, a CWS supplier with appropriate historical data for a representative point in the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003, provided that the Agency finds that the historical data satisfactorily demonstrate that each entry point to the distribution system is expected to be in compliance based upon the historical data and reasonable assumptions about the variability of contaminant levels between entry points. The Agency must make its finding in writing, by a SEP issued pursuant to Section 611.110, indicating how the data conforms to the requirements of this subsection (b)(2).

3) For gross alpha particle activity, uranium, radium-226, and radium-228 monitoring, the Agency may, by a SEP issued pursuant to Section 611.110, waive the final two quarters of initial monitoring for a sampling point if the results of the samples from the previous two quarters are below the detection limit.

4) If the average of the initial monitoring results for a sampling point is above the MCL, the supplier must collect and analyze quarterly samples at that sampling point until the system has results from four consecutive quarters that are at or below the MCL, unless the supplier enters into another schedule as part of a formal compliance agreement with the Agency.

c) Reduced monitoring: Effective December 8, 2003, the Agency may allow a CWS supplier to reduce the future frequency of monitoring from once every three years to once every six or nine years at each sampling point, based on the following criteria:

1) If the average of the initial monitoring results for each contaminant (i.e., gross alpha particle activity, uranium, radium-226, or radium-228) is below the detection limit specified in the table at Section 611.720(c)(1), the supplier must collect and analyze for that contaminant using at least one sample at that sampling point every nine years.

2) For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is at or above the detection limit but at or below one-half the MCL, the supplier must collect and analyze for that contaminant using at least one sample at that sampling point every six years. For combined radium-226 and radium-228, the analytical results must be combined. If the average of the combined initial monitoring results for radium-226 and radium-228 is at or above the detection limit but at or below one-half the MCL, the supplier must collect and analyze for that contaminant using at least one sample at that sampling point every six years.

3) For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is above one-half the MCL but at or below the MCL, the supplier must collect and analyze at least one sample at that sampling point every three years. For combined radium-226 and radium-228, the analytical results must be combined. If the average of the combined initial monitoring results for radium-226 and radium-228 is above one-half the MCL but at or below the MCL, the supplier must collect and analyze at least one sample at that sampling point every three years.

4) A supplier must use the samples collected during the reduced monitoring period to determine the monitoring frequency for subsequent monitoring periods (e.g., if a supplier's sampling point is on a nine year monitoring period, and the sample result is above one-half the MCL, then the next monitoring period for that sampling point is three years).

5) If a supplier has a monitoring result that exceeds the MCL while on reduced monitoring, the supplier must collect and analyze quarterly samples at that sampling point until the supplier has results from four consecutive quarters that are below the MCL, unless the supplier enters into another schedule as part of a formal compliance agreement with the Agency.

d) Compositing: Effective December 8, 2003, to fulfill quarterly monitoring requirements for gross alpha particle activity, radium-226, radium-228, or uranium, a supplier may composite up to four consecutive quarterly samples from a single entry point if analysis is done within a year after the first sample. The analytical results from the composited sample must be treated as the average analytical result to determine compliance with the MCLs and the future monitoring frequency. If the analytical result from the composited sample is greater than one-half the MCL, the Agency may, by a SEP issued pursuant to Section 611.110, direct the supplier to take additional quarterly samples before allowing the supplier to sample under a reduced monitoring schedule.

e) Effective December 8, 2003, a gross alpha particle activity measurement may be substituted for the required radium-226 measurement, provided that the measured gross alpha particle activity does not exceed 5 pCi/L. A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/L.

1) The gross alpha measurement must have a confidence interval of 95% (1.65σ, where σ is the standard deviation of the net counting rate of the sample) for radium-226 and uranium.

2) When a supplier uses a gross alpha particle activity measurement in lieu of a radium-226 or uranium measurement, the gross alpha particle activity analytical result will be used to determine the future monitoring frequency for radium-226 and/or uranium.

3) If the gross alpha particle activity result is less than detection, one-half the detection limit will be used to determine compliance and the future monitoring frequency.

~~a~~f) ~~Compliance~~ Until December 8, 2003, compliance must be based on the analysis of an annual composite of four consecutive quarterly samples or the average of the analyses of four samples obtained at quarterly intervals.

1) A gross alpha particle activity measurement may be substituted for the required radium-226 and radium-228 analysis, provided that the measured gross alpha particle activity does not exceed 5 pCi/L at a confidence level of 95 percent (1.65 sigma where sigma is the standard deviation of the net counting rate of the sample). In localities where radium-228 may be present in drinking water, the Agency may, by special exception permit, require radium-226 or radium-228 analyses if it determines that the gross alpha particle activity exceeds 2 pCi/L.

2) When the gross alpha particle activity exceeds 5 pCi/L, the same or an equivalent sample must be analyzed for radium-226. If the concentration of radium-226 exceeds 3 pCi/L the same or an equivalent sample must be analyzed for radium-228.

~~b~~g) See Section 611.100(e).

~~c~~h) Until December 8, 2003, CWS suppliers must monitor at least once every four years following the procedure required by subsection ~~(a)~~ (f) of this Section.

When an annual record taken in conformance with subsection ~~(a)~~ (f) of this Section has established that the average annual concentration is less than half the MCLs established by Section 611.330, the Agency shall, by special exception permit, substitute analysis of a single sample for the quarterly sampling procedure required by subsection ~~(a)~~ (f) of this Section.

1) The Agency shall, by special exception permit, require more frequent monitoring in the vicinity of mining or other operations that may contribute alpha particle radioactivity to either surface or groundwater sources of drinking water.

2) A CWS supplier must monitor in conformance with subsection ~~(a)~~ (f) of this Section for one year after the introduction of a new water source. The Agency shall, by special exception permit, require more frequent monitoring in the event of possible contamination or when changes in the distribution system or treatment process occur that may increase the concentration of radioactivity in finished water.

3) The Agency shall, by special exception permit, require a CWS supplier using two or more sources having different concentrations of radioactivity to monitor source water, in addition to water from a free-flowing tap.

4) The Agency must not require monitoring for radium-228 to determine compliance with Section 611.330 after the initial period, provided that the average annual concentration of radium-228 has been assayed at least once using the quarterly sampling procedure required by subsection ~~(a)~~ (f) of this Section.

5) The Agency must require the CWS supplier to conduct annual monitoring if the radium-226 concentration exceeds 3 pCi/L.

~~d~~i) Until December 8, 2003, ~~If~~ if the average annual MCL for gross alpha particle activity or total radium as set forth in Section 611.330 is exceeded, the CWS supplier must give notice to the Agency and notify the public as required by Subpart V. Monitoring at quarterly intervals must be continued until the annual average concentration no longer exceeds the MCL or until a monitoring schedule as a condition to a variance, adjusted standard or enforcement action becomes effective.

BOARD NOTE: ~~Derived~~ Subsections (a) through (e) derive from 40 CFR 141.26(a) ~~(1999)~~ (2000), as amended at 65 Fed. Reg. ~~26022, May 4, 2000~~ 76745 (December 7, 2000), effective December 8, 2003. Subsections (f) through (i) derive from 40 CFR 141.26(a), as effective until December 8, 2003.

(Source: Amended at 25 Ill. Reg. ________ effective ______________________)

Section 611.732 ~~Manmade~~ Beta Particle and Photon Radioactivity

Monitoring and compliance requirements for manmade radioactivity ~~in CWSs are as follows:~~. To determine compliance with the maximum contaminant levels in Section 611.330(d) for beta particle and photon radioactivity, a supplier must monitor at a frequency as follows:

a) Effective December 8, 2003, a CWS supplier (either a surface water or groundwater supplier) designated by the Agency, by a SEP issued pursuant to Section 611.110, as vulnerable must sample for beta particle and photon radioactivity. A supplier must collect quarterly samples for beta emitters and annual samples for tritium and strontium-90 at each entry point to the distribution system (hereafter called a sampling point), beginning within one quarter after being notified by the Agency. A supplier already designated by the Agency must continue to sample until the Agency reviews and either reaffirms or removes the designation, by a SEP issued pursuant to Section 611.110.

1) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 50 pCi/L (screening level), the Agency may reduce the frequency of monitoring at that sampling point to once every three years. A supplier must collect all samples required in subsection (a) of this Section during the reduced monitoring period.

2) For a supplier in the vicinity of a nuclear facility, the Agency may allow the CWS supplier to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the supplier's entry points, where the Agency determines if such data is applicable to a particular water system, by a SEP issued pursuant to Section 611.110. In the event that there is a release from a nuclear facility, a supplier that is using surveillance data must begin monitoring at the community water supplier's entry points in accordance with subsection (b)(1) of this Section.

b) Effective December 8, 2003, a CWS supplier (either a surface water or groundwater supplier) designated by the Agency, by a SEP issued pursuant to Section 611.110, as utilizing waters contaminated by effluents from nuclear facilities must sample for beta particle and photon radioactivity. A supplier must collect quarterly samples for beta emitters and iodine-131 and annual samples for tritium and strontium-90 at each entry point to the distribution system (hereafter called a sampling point), beginning within one quarter after being notified by the Agency. A supplier already designated by the Agency as a supplier using waters contaminated by effluents from nuclear facilities must continue to sample until the Agency reviews and either reaffirms or removes the designation, by a SEP issued pursuant to Section 611.110.

1) Quarterly monitoring for gross beta particle activity must be based on the analysis of monthly samples or the analysis of a composite of three monthly samples.

BOARD NOTE: In corresponding 40 CFR 141.26(b)(2)(i), USEPA recommends the use of a composite of three monthly samples.

2) For iodine-131, a composite of five consecutive daily samples must be analyzed once each quarter. The Agency may, by a SEP issued pursuant to Section 611.110, order more frequent monitoring for iodine-131 where it is identified in the finished water.

3) Annual monitoring for strontium-90 and tritium must be conducted by means of the analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples.

BOARD NOTE: In corresponding 40 CFR 141.26(b)(2)(iii), USEPA recommends the analysis of four consecutive quarterly samples.

4) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 15 pCi/L, the Agency may, by a SEP issued pursuant to Section 611.110, reduce the frequency of monitoring at that sampling point to once every three years. The supplier must collect all samples required in subsection (b) of this Section during the reduced monitoring period.

5) For a supplier in the vicinity of a nuclear facility, the Agency may allow the CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry points, where the Agency determines, by a SEP issued pursuant to Section 611.110, that such data is applicable to the particular water system. In the event that there is a release from a nuclear facility, a supplier that uses such surveillance data must begin monitoring at the CWS's entry points in accordance with subsection (b) of this Section.

c) Effective December 8, 2003, a CWS supplier designated by the Agency to monitor for beta particle and photon radioactivity can not apply to the Agency for a waiver from the monitoring frequencies specified in subsection (a) or (b) of this Section.

d) Effective December 8, 2003, a CWS supplier may analyze for naturally occurring potassium-40 beta particle activity from the same or equivalent sample used for the gross beta particle activity analysis. A supplier is allowed to subtract the potassium-40 beta particle activity value from the total gross beta particle activity value to determine if the screening level is exceeded. The potassium-40 beta particle activity must be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.

e) Effective December 8, 2003, if the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the screening level, an analysis of the sample must be performed to identify the major radioactive constituents present in the sample and the appropriate doses must be calculated and summed to determine compliance with Section 611.330(d)(1), using the formula in Section 611.330(d)(2). Doses must also be calculated and combined for measured levels of tritium and strontium to determine compliance.

f) Effective December 8, 2003, a supplier must monitor monthly at the sampling points that exceeds the maximum contaminant level in Section 611.330(d) beginning the month after the exceedence occurs. A supplier must continue monthly monitoring until the supplier has established, by a rolling average of three monthly samples, that the MCL is being met. A supplier that establishes that the MCL is being met must return to quarterly monitoring until it meets the requirements set forth in subsection (a)(2) or (b)(1) of this Section.

~~a~~g) Until December 8, 2003, CWSs using surface water sources and serving more than 100,000 persons and such other CWSs as the Agency, by special exception permit, requires must monitor for compliance with Section 611.331 by analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples. Compliance with Section 611.331 is assumed without further analysis if the average annual concentration of gross beta particle activity is less than 50 pCi/L and if the average annual concentrations of tritium and strontium-90 are less than those listed in Section 611.331, provided that if both radionuclides are present the sum of their annual dose equivalents to bone marrow must not exceed 4 millirem/year.

1) If the gross beta particle activity exceeds 50 pCi/L, an analysis of the sample must be performed to identify the major radioactive constituents present and the appropriate organ and total body doses must be calculated to determine compliance with Section 611.331.

2) If the MCLs are exceeded, the Agency shall, by special exception permit, require the supplier to conduct additional monitoring to determine the concentration of man-made radioactivity in principal watersheds.

3) The Agency shall, pursuant to subsection ~~(d)~~ (j) of this Section, by special exception permit, require suppliers of water utilizing only groundwater to monitor for man-made radioactivity.

~~b~~h) See Section 611.100(e).

~~c~~i) Until December 8, 2003, CWS suppliers shall monitor at least every four years following the procedure in subsection ~~(a)~~ (g) of this Section.

~~d~~j) ~~The~~ Until December 8, 2003, the Agency ~~shall~~ must, by special exception permit, require any CWS supplier utilizing waters contaminated by effluents from nuclear facilities to initiate quarterly monitoring for gross beta particle and iodine-131 radioactivity and annual monitoring for strontium-90 and tritium.

1) Quarterly monitoring for gross beta particle activity must be based on the analysis of monthly samples or the analysis of a composite of three monthly samples. If the gross beta particle activity in a sample exceeds 15 pCi/L, the same or an equivalent sample must be analyzed for strontium-89 and cesium-134. If the gross beta particle activity exceeds 50 pCi/L, an analysis of the sample must be performed to identify the major radioactive constitutents present and the appropriate organ and total body doses must be calculated to determine compliance with Section 611.331.

2) For iodine-131, a composite of five consecutive daily samples must be analyzed once each quarter. The Agency shall, by special exception permit, require more frequent monitoring when iodine-131 is identified in the finished water.

3) The Agency shall, by special exception permit, require annual monitoring for strontium-90 and tritium by means of the analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples.

4) The Agency shall, by special exception permit, allow the substitution of environmental surveillance data taken in conjunction with a nuclear facility for direct monitoring of manmade radioactivity by the supplier where the Agency determines such data is applicable to the CWS.

~~e~~k) ~~If~~ Until December 8, 2003, if the average annual MCL for man-made radioactivity set forth in Section 611.331 is exceeded, the CWS supplier shall give notice to the Agency and to the public as required by Subpart T. Monitoring at monthly intervals must be continued until the concentration no longer exceeds the MCL or until a monitoring schedule as a condition to a variance, adjusted standard or enforcement action becomes effective.

BOARD NOTE: ~~Derived~~ Subsections (a) through (f) derive from 40 CFR 141.26(b) ~~(1999)~~ (2000), as amended at 65 Fed. Reg. ~~26022, May 4, 2000~~ 76745 (December 7, 2000), effective December 8, 2003. Subsections (g) through (k) derive from 40 CFR 141.26(b), as effective until December 8, 2003.

(Source: Amended at 25 Ill. Reg. ________ effective ______________________)

Section 611.733 General Monitoring and Compliance Requirements

The following requirements apply effective December 8, 2003:

a) The Agency may, by a SEP issued pursuant to Section 611.110, require more frequent monitoring than specified in Sections 611.731 and 611.732 or may require confirmation samples. The results of the initial and confirmation samples will be averaged for use in a compliance determination.

b) Each PWS supplier must monitor at the time designated by the Agency during each compliance period.

c) Compliance: compliance with Section 611.330(b) through (e) must be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL, the supplier is in violation of the MCL.

  1) For a supplier monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point. If the average of any sampling point is greater than the MCL, then the supplier is out of compliance with the MCL.

  2) For a supplier monitoring more than once per year, if any sample result would cause the running average to exceed the MCL at any single sampling point, the supplier is immediately out of compliance with the MCL.

  3) a supplier must include all samples taken and analyzed under the provisions of this Section and Sections 611.731 and 611.732 in determining compliance, even if that number is greater than the minimum required.

  4) If a supplier does not collect all required samples when compliance is based on a running annual average of quarterly samples, compliance will be based on the running average of the samples collected.

  5) If a sample result is less than the detection limit, zero will be used to calculate the annual average, unless a gross alpha particle activity is being used in lieu of radium-226 and/or uranium. If the gross alpha particle activity result is less than detection, one-half the detection limit will be used to calculate the annual average.

d) The Agency may, by a SEP issued pursuant to Section 611.110, allow the supplier to delete results of obvious sampling or analytic errors.

e) If the MCL for radioactivity set forth in Section 611.330 (b) through (e) is exceeded, the operator of a CWS must give notice to the Agency pursuant to Section 611.840 and to the public as required by Subpart V of this Part.

BOARD NOTE: Derived from 40 CFR 141.26(c), as added at 65 Fed. Reg. 76745 (December 7, 2000), effective December 8, 2003.

(Source: Added at 25 Ill. Reg. ________ effective ______________________)

SUBPART R: ENHANCED FILTRATION AND DISINFECTION

Section 611.745 Reporting and Recordkeeping Requirements

In addition to the reporting and recordkeeping requirements in Sections 611.261 and 611.262, a public water system subject to the requirements of this Subpart that provides conventional filtration treatment or direct filtration must report monthly to the Agency the information specified in subsections (a) and (b) of this Section beginning January 1, 2002. In addition to the reporting and recordkeeping requirements in Sections 611.261 and 611.262, a public water system subject to the requirements of this Subpart that provides filtration approved under Section 611.743(b) must report monthly to the Agency the information specified in subsection (a) of this Section beginning January 1, 2002. The reporting in subsection (a) of this Section is in lieu of the reporting specified in Section 611.262(a).

a) Turbidity measurements, as required by Section 611.743, must be reported within ten days after the end of each month the system serves water to the public. Information that must be reported is the following:

1) The total number of filtered water turbidity measurements taken during the month.

2) The number and percentage of filtered water turbidity measurements taken during the month ~~which~~ that are less than or equal to the turbidity limits specified in Section 611.743 (a) or (b).

3) The date and value of any turbidity measurements taken during the month that exceed 1 NTU for systems using conventional filtration treatment or direct filtration, or that exceed the maximum level under Section 611.743(b).

b) Systems must maintain the results of individual filter monitoring taken under Section 611.744 for at least three years. Systems must report that they have conducted individual filter turbidity monitoring under Section 611.744 within ten days after the end of each month the system serves water to the public. Systems must report individual filter turbidity measurement results taken under Section 611.744 within ten days after the end of each month the system serves water to the public only if measurements demonstrate one or more of the conditions in subsections (b)(1) through (4) of this Section. Systems that use lime softening may apply to the Agency for alternative exceedence levels for the levels specified in subsections (b)(1) through (4) of this Section if they can demonstrate that higher turbidity levels in individual filters are due to lime carryover only and not due to degraded filter performance.

1) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart, the system must report the filter number, the turbidity measurement, and the dates on which the exceedence occurred. In addition, the system must either produce a filter profile for the filter within seven days after the exceedence (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedence.

2) For any individual filter that has a measured turbidity level of greater than 0.5 NTU in two consecutive measurements taken 15 minutes apart at the end of the first four hours of continuous filter operation after the filter has been backwashed or otherwise taken offline, the system must report the filter number, the turbidity, and the dates on which the exceedence occurred. In addition, the system must either produce a filter profile for the filter within seven days after the exceedence (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedence.

3) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of three consecutive months, the system must report the filter number, the turbidity measurement, and the dates on which the exceedence occurred. In addition, the system must conduct a self-assessment of the filter within 14 days after the exceedence and report that the self-assessment was conducted. The self-assessment must consist of at least the following components: assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report.

4) For any individual filter that has a measured turbidity level of greater than 2.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of two consecutive months, the system must report the filter number, the turbidity measurement, and the dates on which the exceedence occurred. In addition, the system must arrange for the conduct of a comprehensive performance evaluation by the Agency or a third party approved by the Agency no later than 30 days following the exceedence

and have the evaluation completed and submitted to the Agency no later than 90 days following the exceedence.

c) Additional reporting requirements.

1) If at any time the turbidity exceeds 1 NTU in representative samples of filtered water in a system using conventional filtration treatment or direct filtration, the supplier must consult with the Agency as soon as practical, but no later than 24 hours after the ~~exceedance~~ exceedence is known, in accordance with the public notification requirements under Section 611.903(b)(3).

2) If at any time the turbidity in representative samples of filtered water exceeds the maximum level set by the Agency under Section 611.743(b) for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, the supplier must consult with the Agency as soon as practical, but no later than 24 hours after the ~~exceedance~~ exceedence is known, in accordance with the public notification requirements under Section 611.903(b)(3).

BOARD NOTE: Derived from 40 CFR 141.175 ~~(1999), as amended at 65 Fed. Reg. 26035 (May 4, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

Section 611.901 General Public Notification Requirements

The requirements of this Subpart V replace former notice requirements.

a) Who must give public notice. Each owner or operator of a public water system (a CWS, an NTNCWS, or a transient non-CWS) must give notice for all violations of an NPDWR and for other situations, as listed in this subsection (a). The term "NPDWR violation" is used in this Subpart V to include violations of an MCL, an MRDL, a treatment technique, monitoring requirements, or a testing procedure set forth in this Part. Appendix G to this Part identifies the tier assignment for each specific violation or situation requiring a public notice.

1) NPDWR violations:

A) A failure to comply with an applicable MCL or MRDL.

B) A failure to comply with a prescribed treatment technique.

C) A failure to perform water quality monitoring, as required by this Part.

D) A failure to comply with testing procedures as prescribed by this Part.

2) Relief equivalent to a variance and exemptions under sections 1415 and 1416 of SDWA:

A) Operation under relief equivalent to a SDWA ~~Section~~ section 1415 variance, under Section 611.111, or a SDWA ~~Section~~ section 1416 exemption, under Section 611.112.

B) A failure to comply with the requirements of any schedule that has been set under relief equivalent to a SDWA ~~Section~~ section 1415 variance, under Section 611.111, or a SDWA ~~Section~~ section 1415 exemption, under Section 611.112.

3) Special public notices:

A) The occurrence of a waterborne disease outbreak or other waterborne emergency.

B) An ~~exceedance~~ exceedence of the nitrate MCL by a non-CWS, where granted permission by the Agency under Section 611.300(d).

C) An ~~exceedance~~ exceedence of the secondary fluoride standard of Section 611.858.

D) The availability of unregulated contaminant monitoring data.

E) Other violations and situations determined by the Agency by a SEP issued pursuant to Section 611.110 to require a public notice under this Subpart, not already listed in Appendix G.

b) The type of public notice required for each violation or situation. The public notice requirements of this Subpart V are divided into three tiers, to take into account the seriousness of the violation or situation and of any potential adverse health effects that may be involved. The public notice requirements for each violation or situation listed in subsection (a) of this Section are determined by the tier to which it is assigned. This subsection (b) provides the definition of each tier. Appendix G of this Part identifies the tier assignment for each specific violation or situation.

1) Tier 1 public notice: required for NPDWR violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.

2) Tier 2 public notice: required for all other NPDWR violations and situations with potential to have serious adverse effects on human health.

3) Tier 3 public notice: required for all other NPDWR violations and situations not included in Tier 1 and Tier 2.

c) Who must receive notice.

1) Each PWS supplier must provide public notice to persons served by the water supplier, in accordance with this Subpart V. A PWS supplier that sells or otherwise provides drinking water to another PWS supplier (i.e., to a consecutive system) is required to give public notice to the owner or operator of the consecutive system; the consecutive system supplier is responsible for providing public notice to the persons it serves.

2) If a PWS supplier has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the Agency may allow the system to limit distribution of the public notice to only persons served by that portion of the system ~~which~~ that is out of compliance. Permission by the Agency for limiting distribution of the notice must be granted in writing, by a SEP granted pursuant to Section 611.110.

3) A copy of the notice must also be sent to the Agency, in accordance with the requirements under Section 611.840(d).

BOARD NOTE: Derived from 40 CFR 141.201~~, as added at 65 Fed. Reg. 26035 (May 4, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.902 Tier 1 Public Notice--Form, Manner, and Frequency of Notice

a) Violations or situations that require a Tier 1 public notice. This subsection (a) lists the violation categories and other situations requiring a Tier 1 public notice. Appendix G of this Part identifies the tier assignment for each specific violation or situation.

1) Violation of the MCL for total coliforms when fecal coliform or E. coli are present in the water distribution system (as specified in Section 611.325(b)), or when the water supplier fails to test for fecal coliforms or

E. coli when any repeat sample tests positive for coliform (as specified in Section 611.525);

2) Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, as defined in Section 611.301, or when the water supplier fails to take a confirmation sample within 24 hours after the supplier's receipt of the results from the first sample showing an ~~exceedance~~ exceedence of the nitrate or nitrite MCL, as specified in Section 611.606(b);

3) ~~Exceedance~~ Exceedence of the nitrate MCL by a non-CWS supplier, where permitted to exceed the MCL by the Agency under Section 611.300(d), as required under Section 611.909;

4) Violation of the MRDL for chlorine dioxide, as defined in Section 611.313(a), when one or more samples taken in the distribution system the day following an ~~exceedance~~ exceedence of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water supplier does not take the required samples in the distribution system, as specified in Section 611.383(c)(2)(A);

5) Violation of the turbidity MCL under Section 141.13(b), where the Agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the supplier learns of the violation;

6) Violation of the Surface Water Treatment Rule (SWTR) or Interim Enhanced Surface Water Treatment Rule (IESWTR) treatment technique requirement resulting from a single ~~exceedance~~ exceedence of the maximum allowable turbidity limit (as identified in Appendix G), where the primacy agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the supplier learns of the violation;

7) Occurrence of a waterborne disease outbreak, as defined in Section 611.101, or other waterborne emergency (such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination);

8) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the Agency by a SEP issued pursuant to Section 611.110.

b) When the Tier 1 public notice is to be provided. Additional steps required. A PWS supplier must:

1) Provide a public notice as soon as practical but no later than 24 hours after the supplier learns of the violation;

2) Initiate consultation with the Agency as soon as practical, but no later than 24 hours after the PWS supplier learns of the violation or situation, to determine additional public notice requirements; and

3) Comply with any additional public notification requirements (including any repeat notices or direction on the duration of the posted notices) that are established as a result of the consultation with the Agency. Such requirements may include the timing, form, manner, frequency, and content of repeat notices (if any) and other actions designed to reach all persons served.

c) The form and manner of the public notice. A PWS supllier must provide the notice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the PWS supplier are to fit the specific situation, but must be designed to reach residential, transient, and non-transient users of the water system. In order to reach all persons served, a water supplier is to use, at a minimum, one or more of the following forms of delivery:

1) Appropriate broadcast media (such as radio and television);

2) Posting of the notice in conspicuous locations throughout the area served by the water supplier;

3) Hand delivery of the notice to persons served by the water supplier; or

4) Another delivery method approved in writing by the Agency by a SEP issued pursuant to Section 611.110.

BOARD NOTE: Derived from 40 CFR 141.202~~, as added at 65 Fed. Reg. 26036 (May 4, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.903 Tier 2 Public Notice--Form, Manner, and Frequency of Notice

a) Violations or situations that require a Tier 2 public notice. This subsection lists the violation categories and other situations requiring a Tier 2 public notice. Appendix G to this Part identifies the tier assignment for each specific violation or situation.

1) All violations of the MCL, MRDL, and treatment technique requirements, except where a Tier 1 notice is required under Section 611.902(a) or

where the Agency determines by a SEP issued pursuant to Section 611.110 that a Tier 1 notice is required;

2) Violations of the monitoring and testing procedure requirements, where the Agency determines by a SEP issued pursuant to Section 611.110 that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation; and

3) Failure to comply with the terms and conditions of any relief equivalent to a SDWA Section 1415 variance or a SDWA Section 1416 exemption in place.

b) When Tier 2 public notice is to be provided.

1) A PWS supplier must provide the public notice as soon as practical, but no later than 30 days after the supplier learns of the violation. If the public notice is posted, the notice must remain in place for as long as the violation or situation persists, but in no case for less than seven days, even if the violation or situation is resolved. The Agency may, in appropriate circumstances, by a SEP issued pursuant to Section 611.110, allow additional time for the initial notice of up to three months from the date the supplier learns of the violation. It is not appropriate for the Agency to grant an extension to the 30-day deadline for any unresolved violation or to allow across-the-board extensions by rule or policy for other violations or situations requiring a Tier 2 public notice. Extensions granted by the Agency must be in writing.

2) The PWS supplier must repeat the notice every three months as long as the violation or situation persists, unless the Agency determines that appropriate circumstances warrant a different repeat notice frequency. In no circumstance may the repeat notice be given less frequently than once per year. It is not appropriate for the Agency to allow less frequent repeat notice for an MCL violation under the Total Coliform Rule or a treatment technique violation under the Surface Water Treatment Rule or Interim Enhanced Surface Water Treatment Rule. It is also not appropriate for the Agency to allow across-the-board reductions in the repeat notice frequency for other ongoing violations requiring a Tier 2 repeat notice. An Agency determination allowing repeat notices to be given less frequently than once every three months must be in writing.

3) For the turbidity violations specified in this subsection (b)(3), a PWS supplier must consult with the Agency as soon as practical but no later than 24 hours after the supplier learns of the violation, to determine whether a Tier 1 public notice under Section 611.902(a) is required to protect public health. When consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notice of the

violation within the next 24 hours (i.e., no later than 48 hours after the supplier learns of the violation), following the requirements under Section 611.902(b) and (c). Consultation with the Agency is required for the following:

A) Violation of the turbidity MCL under Section 141.320(b); or

B) Violation of the SWTR or IESWTR treatment technique requirement resulting from a single ~~exceedance~~ exceedence of the maximum allowable turbidity limit.

c) The form and manner of Tier 2 public notice. A PWS supplier must provide the initial public notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

1) Unless directed otherwise by the Agency in writing, by a SEP issued pursuant to Section 611.110, a CWS supplier must provide notice by:

A) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the PWS supplier; and

B) Any other method reasonably calculated to reach other persons regularly served by the supplier, if they would not normally be reached by the notice required in subsection (c)(1)(A) of this Section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places served by the supplier or on the Internet; or delivery to community organizations.

2) Unless directed otherwise by the Agency in writing, by a SEP issued pursuant to Section 611.110, a non-CWS supplier must provide notice by the following:

A) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the supplier, or by mail or direct delivery to each customer and service connection (where known); and

B) Any other method reasonably calculated to reach other persons served by the system if they would not normally be reached by the notice required in subsection (c)(2)(A) of this Section. Such persons may include those served who may not see a posted notice because the posted notice is not in a location they routinely pass by. Other methods may include the following: Publication in a local newspaper or newsletter distributed to customers; use of E-mail to notify employees or students; or delivery of multiple copies in central locations (e.g., community centers).

BOARD NOTE: Derived from 40 CFR 141.203~~, as added at 65 Fed. Reg. 26036 (May 4, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.904 Tier 3 Public Notice--Form, Manner, and Frequency of Notice

a) Violations or situations that require a Tier 3 public notice. This subsection (a) lists the violation categories and other situations requiring a Tier 3 public notice. Appendix G of this Part identifies the tier assignment for each specific violation or situation.

1) Monitoring violations under this Part, except where a Tier 1 notice is required under Section 611.902(a) or where the Agency determines by a SEP issued pursuant to Section 611.110 that a Tier 2 notice is required;

2) Failure to comply with a testing procedure established in this Part, except where a Tier 1 notice is required under Section 611.902(a) or where the Agency determines by a SEP issued pursuant to Section 611.110 that a Tier 2 notice is required;

3) Operation under relief equivalent to a SDWA Section 1415 variance granted under Section 611.111 or relief equivalent to a SDWA Section 1416 exemption granted under Section 611.112;

4) Availability of unregulated contaminant monitoring results, as required under Section 611.907; and

5) ~~Exceedance~~ Exceedence of the secondary standard for fluoride under Section 611.858, as required under Section 611.908.

b) When the Tier 3 public notice is to be provided.

1) A PWS supplier must provide the public notice not later than one year after the supplier learns of the violation or situation or begins operating under relief equivalent to a SDWA Section 1415 variance or Section 1416

exemption. Following the initial notice, the supplier must repeat the notice annually for as long as the violation, relief equivalent to a SDWA Section 1415 variance or Section 1416 exemption, or other situation persists. If the public notice is posted, the notice must remain in place for as long as the violation, relief equivalent to a SDWA Section 1415 variance or Section 1416 exemption, or other situation persists, but in no case less than seven days (even if the violation or situation is resolved).

2) Instead of individual Tier 3 public notices, a PWS supplier may use an annual report detailing all violations and situations that occurred during the previous twelve months, as long as the timing requirements of subsection (b)(1) of this Section are met.

c) The form and manner of the Tier 3 public notice. A PWS supplier must provide the initial notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

1) Unless directed otherwise by the Agency by a SEP issued pursuant to Section 611.110 in writing, a CWS supplier must provide notice by the following:

A) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the supplier; and

B) Any other method reasonably calculated to reach other persons regularly served by the supplier, if they would not normally be reached by the notice required in subsection (c)(1)(A) of this Section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include the following: publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places or on the Internet; or delivery to community organizations.

2) Unless directed otherwise by the Agency by a SEP issued pursuant to Section 611.110 in writing, a non-CWS supplier must provide notice by the following:

A) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the supplier, or by mail or direct delivery to each customer and service connection (where known); and

B) Any other method reasonably calculated to reach other persons served by the supplier, if they would not normally be reached by the notice required in subsection (c)(2)(A) of this Section. Such persons may include those who may not see a posted notice because the notice is not in a location they routinely pass by. Other methods may include the following: publication in a local newspaper or newsletter distributed to customers; use of E-mail to notify employees or students; or delivery of multiple copies in central locations (e.g., community centers).

d) When the Consumer Confidence Report may be used to meet the Tier 3 public notice requirements. For a CWS supplier, the Consumer Confidence Report (CCR) required under Subpart U of this Part may be used as a vehicle for the initial Tier 3 public notice and all required repeat notices, as long as the following is true:

1) The CCR is provided to persons served no later than 12 months after the supplier learns of the violation or situation as required under Section 611.904(b);

2) The Tier 3 notice contained in the CCR follows the content requirements under Section 611.905; and

3) The CCR is distributed following the delivery requirements under Section 611.904(c).

BOARD NOTE: Derived from 40 CFR 141.204~~, as added at 65 Fed. Reg. 26037 (May 4, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.908 Special Notice for ~~Exceedance~~ Exceedence of the Fluoride Secondary Standard

a) When to give special notice. A CWS supplier that exceeds the fluoride secondary standard (SMCL) of 2 mg/L, as specified in Section 611.858 (determined by the last single sample taken in accordance with Section 611.603), but does not exceed the maximum contaminant level (MCL) of 4 mg/L for fluoride (as specified in Section 611.301), must provide the public notice in subsection (c) of this Section to persons served. Public notice must be provided as soon as practical but no later than 12 months from the day the supplier learns of the ~~exceedance~~ exceedence. A copy of the notice must also be sent to all new billing units and new customers at the time service begins and to the Department of Pubic Health. The PWS supplier must repeat the notice at least annually for as long as the SMCL is exceeded. If the public notice is posted, the notice must remain in place for as long as the fluoride SMCL is exceeded, but in no case less than seven days (even if the ~~exceedance~~ exceedence is eliminated). On a case-by-case basis, the Agency may require an initial notice sooner than 12 months and repeat notices more frequently than annually.

b) The form and manner of a special notice. The form and manner of the public notice (including repeat notices) must follow the requirements for a Tier 3 public notice in Section 611.904(c), (d)(1), and (d)(3).

c) Mandatory language in a special notice. The notice must contain the following language, including the language necessary to fill in the blanks:

> This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system [name] has a fluoride concentration of [insert value] mg/L. Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.
>
> Drinking water containing more than 4 mg/L of fluoride (the USEPA's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/L of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/L because of this cosmetic dental problem.
>
> For more information, please call [name of water system contact] of [name of community water system] at [phone number]. Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP.

BOARD NOTE: Derived from 40 CFR 141.208~~, as added at 65 Fed. Reg. 26039 (May 4, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.909 Special Notice for Nitrate ~~Exceedances~~ Exceedences above the MCL by a Non-Community Water System

a) When the special notice is to be given. The owner or operator of a non-CWS supplier granted permission by the Agency under Section 611.300(d) to exceed the nitrate MCL must provide notice to persons served according to the requirements for a Tier 1 notice under Section 611.902(a) and (b).

b) The form and manner of the special notice. A non-CWS supplier granted permission by the Agency to exceed the nitrate MCL under Section 611.300(d) must provide continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effects of exposure, according to the requirements for Tier 1 notice delivery under Section 611.902(c) and the content requirements under Section 611.905.

BOARD NOTE: Derived from 40 CFR 141.209~~, as added at 65 Fed. Reg. 26039 (May 4, 2000)~~ (2000).

(Source: Amended at 25 Ill. Reg. ________, effective ______________________)

Section 611.Appendix A Regulated Contaminants

Microbiological contaminants:

Contaminant (units): Total Coliform Bacteria
Traditional MCL in mg/L: MCL: (systems that collect ≥40 samples/month) fewer than 5% of monthly samples are positive; (systems that collect < 40 samples/month) fewer than 1 positive monthly sample.
To convert for CCR, multiply by: --
MCL in CCR units: MCL: (systems that collect ≥40 samples/month) fewer than 5% of monthly samples are positive; (systems that collect < 40 samples/month) fewer than 1 positive monthly sample.
MCLG: 0
Major sources in drinking water: Naturally present in the environment.
Health effects language: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Contaminant (units): Fecal coliform and E. coli
Traditional MCL in mg/L: 0
To convert for CCR, multiply by: --
MCL in CCR units: 0

MCLG: 0
Major sources in drinking water: Human and animal fecal waste.
Health effects language: Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Contaminant (units): Total organic carbon (ppm)
Traditional MCL in mg/L: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: N/A
Major sources in drinking water: Naturally present in the environment.
Health effects language: Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

Contaminant (units): Turbidity (NTU)
Traditional MCL in mg/L: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: N/A
Major sources in drinking water: Soil runoff.
Health effects language: Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Radioactive contaminants:

Contaminant (units): Beta/photon emitters (mrem/yr)
Traditional MCL in mg/L: 4 mrem/yr
To convert for CCR, multiply by: --
MCL in CCR units: 4
MCLG: ~~N/A~~ 0
Major sources in drinking water: Decay of natural and man-made deposits.
Health effects language: Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta particle and photon ~~emitters~~ radioactivity in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Alpha emitters (pCi/L)~~.~~
Traditional MCL in mg/L: 15 pCi/L
To convert for CCR, multiply by: --
MCL in CCR units: 15
MCLG: ~~N/A~~ 0
Major sources in drinking water: Erosion of natural deposits.
Health effects language: Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Combined radium (pCi/L)
Traditional MCL in mg/L: 5 pCi/L
To convert for CCR, multiply by: --
MCL in CCR units: 5
MCLG: ~~N/A~~ 0
Major sources in drinking water: Erosion of natural deposits.
Health effects language: Some people who drink water containing ~~radium 226 or 228~~ radium-226 or -228 in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Uranium (µg/L)
Traditional MCL in mg/L: 30 µg/L
To convert for CCR, multiply by: --
MCL in CCR units: 30
MCLG: 0
Major sources in drinking water: Erosion of natural deposits.
Health effects language: Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

Inorganic contaminants:

Contaminant (units): Antimony (ppb)
Traditional MCL in mg/L: 0.006
To convert for CCR, multiply by: 1000
MCL in CCR units: 6
MCLG: 6
Major sources in drinking water: Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Health effects language: Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

Contaminant (units): Arsenic (ppb)

Traditional MCL in mg/L: 0.05
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: N/A
Major sources in drinking water: Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Health effects language: Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Contaminant (units): Asbestos (MFL)
Traditional MCL in mg/L: 7 MFL
To convert for CCR, multiply by: --
MCL in CCR units: 7
MCLG: 7
Major sources in drinking water: Decay of asbestos cement water mains; erosion of natural deposits.
Health effects language: Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.

Contaminant (units): Barium (ppm)
Traditional MCL in mg/L: 2
To convert for CCR, multiply by: --
MCL in CCR units: 2
MCLG: 2
Major sources in drinking water: Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Health effects language: Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

Contaminant (units): Beryllium (ppb)
Traditional MCL in mg/L: 0.004
To convert for CCR, multiply by: 1000
MCL in CCR units: 4
MCLG: 4
Major sources in drinking water: Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Health effects language: Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.

Contaminant (units): Cadmium (ppb)
Traditional MCL in mg/L: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 5

Major sources in drinking water: Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Health effects language: Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

Contaminant (units): Chromium (ppb)
Traditional MCL in mg/L: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from steel and pulp mills; erosion of natural deposits.
Health effects language: Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

Contaminant (units): Copper (ppm)
Traditional MCL in mg/L: AL=1.3
To convert for CCR, multiply by: --
MCL in CCR units: AL=1.3
MCLG: 1.3
Major sources in drinking water: Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Health effects language: Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Contaminant (units): Cyanide (ppb)
Traditional MCL in mg/L: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Discharge from steel/metal factories; discharge from plastic and fertilizer factories.
Health effects language: Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.

Contaminant (units): Fluoride (ppm)
Traditional MCL in mg/L: 4
To convert for CCR, multiply by: --
MCL in CCR units: 4
MCLG: 4

Major sources in drinking water: Erosion of natural deposits; water additive ~~which~~ that promotes strong teeth; discharge from fertilizer and aluminum factories.
Health effects language: Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.

Contaminant (units): Lead (ppb)
Traditional MCL in mg/L: AL=0.015
To convert for CCR, multiply by: 1000
MCL in CCR units: AL=15
MCLG: 0
Major sources in drinking water: Corrosion of household plumbing systems; erosion of natural deposits.
Health effects language: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Contaminant (units): Mercury [inorganic] (ppb)
Traditional MCL in mg/L: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 2
Major sources in drinking water: Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Health effects language: Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.

Contaminant (units): Nitrate (ppm)
Traditional MCL in mg/L: 10
To convert for CCR, multiply by: --
MCL in CCR units: 10
MCLG: 10
Major sources in drinking water: Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Health effects language: Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Contaminant (units): Nitrite (ppm)
Traditional MCL in mg/L: 1
To convert for CCR, multiply by: --

MCL in CCR units: 1
MCLG: 1
Major sources in drinking water: Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Health effects language: Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Contaminant (units): Selenium (ppb)
Traditional MCL in mg/L: 0.05
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: 50
Major sources in drinking water: Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Health effects language: Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

Contaminant (units): Thallium (ppb)
Traditional MCL in mg/L: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0.5
Major sources in drinking water: Leaching from ore-processing sites; discharge from electronics, glass, and drug factories.
Health effects language: Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

Synthetic organic contaminants including pesticides and herbicides:

Contaminant (units): 2,4-D (ppb)
Traditional MCL in mg/L: 0.07
To convert for CCR, multiply by: 1000
MCL in CCR units: 70
MCLG: 70
Major sources in drinking water: Runoff from herbicide used on row crops.
Health effects language: Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

Contaminant (units): 2,4,5-TP [silvex](ppb)
Traditional MCL in mg/L: 0.05
To convert for CCR, multiply by: 1000

MCL in CCR units: 50
MCLG: 50
Major sources in drinking water: Residue of banned herbicide.
Health effects language: Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.

Contaminant (units): Acrylamide
Traditional MCL in mg/L: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: 0
Major sources in drinking water: Added to water during sewage/wastewater treatment.
Health effects language: Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.

Contaminant (units): Alachlor (ppb)
Traditional MCL in mg/L: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0
Major sources in drinking water: Runoff from herbicide used on row crops.
Health effects language: Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.

Contaminant (units): Atrazine (ppb)
Traditional MCL in mg/L: 0.003
To convert for CCR, multiply by: 1000
MCL in CCR units: 3
MCLG: 3
Major sources in drinking water: Runoff from herbicide used on row crops.
Health effects language: Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.

Contaminant (units): Benzo(a)pyrene [PAH] (nanograms/L)
Traditional MCL in mg/L: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 0
Major sources in drinking water: Leaching from linings of water storage tanks and distribution lines.
Health effects language: Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.

Contaminant (units): Carbofuran (ppb)
Traditional MCL in mg/L: 0.04
To convert for CCR, multiply by: 1000
MCL in CCR units: 40
MCLG: 40
Major sources in drinking water: Leaching of soil fumigant used on rice and alfalfa.
Health effects language: Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.

Contaminant (units): Chlordane (ppb)
Traditional MCL in mg/L: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0
Major sources in drinking water: Residue of banned termiticide.
Health effects language: Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.

Contaminant (units): Dalapon (ppb)
Traditional MCL in mg/L: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Runoff from herbicide used on rights of way.
Health effects language: Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

Contaminant (units): Di(2-ethylhexyl)adipate (ppb)
Traditional MCL in mg/L: 0.4
To convert for CCR, multiply by: 1000
MCL in CCR units: 400
MCLG: 400
Major sources in drinking water: Discharge from chemical factories.
Health effects language: Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience general toxic effects or reproductive difficulties.

Contaminant (units): Di(2-ethylhexyl)phthalate (ppb)
Traditional MCL in mg/L: 0.006
To convert for CCR, multiply by: 1000
MCL in CCR units: 6
MCLG: 0
Major sources in drinking water: Discharge from rubber and chemical factories.

Health effects language: Some people who drink water containing di(2-ethylhexyl)phthalate in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.

Contaminant (units): Dibromochloropropane [DBCP] (ppt)
Traditional MCL in mg/L: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 0
Major sources in drinking water: Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Health effects language: Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.

Contaminant (units): Dinoseb (ppb)
Traditional MCL in mg/L: 0.007
To convert for CCR, multiply by: 1000
MCL in CCR units: 7
MCLG: 7
Major sources in drinking water: Runoff from herbicide used on soybeans and vegetables.
Health effects language: Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.

Contaminant (units): Diquat (ppb)
Traditional MCL in mg/L: 0.02
To convert for CCR, multiply by: 1000
MCL in CCR units: 20
MCLG: 20
Major sources in drinking water: Runoff from herbicide use.
Health effects language: Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.

Contaminant (units): Dioxin [2,3,7,8-TCDD] (ppq)
Traditional MCL in mg/L: 0.00000003
To convert for CCR, multiply by: 1,000,000,000
MCL in CCR units: 30
MCLG: 0
Major sources in drinking water: Emissions from waste incineration and other combustion; discharge from chemical factories.
Health effects language: Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

Contaminant (units): Endothall (ppb)
Traditional MCL in mg/L: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Runoff from herbicide use.
Health effects language: Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.

Contaminant (units): Endrin (ppb)
Traditional MCL in mg/L: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 2
Major sources in drinking water: Residue of banned insecticide.
Health effects language: Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

Contaminant (units): Epichlorohydrin~~.~~
Traditional MCL in mg/L: TT
To convert for CCR, multiply by: --
MCL in CCR units: TT
MCLG: 0
Major sources in drinking water: Discharge from industrial chemical factories; an impurity of some water treatment chemicals.
Health effects language: Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

Contaminant (units): Ethylene dibromide (ppt)
Traditional MCL in mg/L: 0.00005
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 50
MCLG: 0
Major sources in drinking water: Discharge from petroleum refineries.
Health effects language: Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.

Contaminant (units): Glyphosate (ppb)
Traditional MCL in mg/L: 0.7
To convert for CCR, multiply by: 1000
MCL in CCR units: 700
MCLG: 700

Major sources in drinking water: Runoff from herbicide use.
Health effects language: Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.

Contaminant (units): Heptachlor (ppt)
Traditional MCL in mg/L: 0.0004
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 400
MCLG: 0
Major sources in drinking water: Residue of banned pesticide.
Health effects language: Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.

Contaminant (units): Heptachlor epoxide (ppt)
Traditional MCL in mg/L: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 0
Major sources in drinking water: Breakdown of heptachlor.
Health effects language: Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

Contaminant (units): Hexachlorobenzene (ppb)
Traditional MCL in mg/L: 0.001
To convert for CCR, multiply by: 1000
MCL in CCR units: 1
MCLG: 0
Major sources in drinking water: Discharge from metal refineries and agricultural chemical factories.
Health effects language: Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.

Contaminant (units): Hexachlorocyclopentadiene (ppb)
Traditional MCL in mg/L: 0.05
To convert for CCR, multiply by: 1000
MCL in CCR units: 50
MCLG: 50
Major sources in drinking water: Discharge from chemical factories.
Health effects language: Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.

Contaminant (units): Lindane (ppt)
Traditional MCL in mg/L: 0.0002
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Runoff/leaching from insecticide used on cattle, lumber, gardens.
Health effects language: Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

Contaminant (units): Methoxychlor (ppb)
Traditional MCL in mg/L: 0.04
To convert for CCR, multiply by: 1000
MCL in CCR units: 40
MCLG: 40
Major sources in drinking water: Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock.
Health effects language: Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.

Contaminant (units): Oxamyl [Vydate] (ppb)
Traditional MCL in mg/L: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Runoff/leaching from insecticide used on apples, potatoes and tomatoes.
Health effects language: Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.

Contaminant (units): PCBs [Polychlorinated biphenyls] (ppt)
Traditional MCL in mg/L: 0.0005
To convert for CCR, multiply by: 1,000,000
MCL in CCR units: 500
MCLG: 0
Major sources in drinking water: Runoff from landfills; discharge of waste chemicals.
Health effects language: Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.

Contaminant (units): Pentachlorophenol (ppb)
Traditional MCL in mg/L: 0.001
To convert for CCR, multiply by: 1000
MCL in CCR units: 1

MCLG: 0
Major sources in drinking water: Discharge from wood preserving factories.
Health effects language: Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.

Contaminant (units): Picloram (ppb)
Traditional MCL in mg/L: 0.5
To convert for CCR, multiply by: 1000
MCL in CCR units: 500
MCLG: 500
Major sources in drinking water: Herbicide runoff.
Health effects language: Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): Simazine (ppb)
Traditional MCL in mg/L: 0.004
To convert for CCR, multiply by: 1000
MCL in CCR units: 4
MCLG: 4
Major sources in drinking water: Herbicide runoff.
Health effects language: Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.

Contaminant (units): Toxaphene (ppb)
Traditional MCL in mg/L: 0.003
To convert for CCR, multiply by: 1000
MCL in CCR units: 3
MCLG: 0
Major sources in drinking water: Runoff/leaching from insecticide used on cotton and cattle.
Health effects language: Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

Volatile organic contaminants:

Contaminant (units): Benzene (ppb)
Traditional MCL in mg/L: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from factories; leaching from gas storage tanks and landfills.

Health effects language: Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.

Contaminant (units): Bromate (ppb)
Traditional MCL in mg/L: 0.010
To convert for CCR, multiply by: 1000
MCL in CCR units: 10
MCLG: 0
Major sources in drinking water: Byproduct of drinking water chlorination.
Health effects language: Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Carbon tetrachloride (ppb)
Traditional MCL in mg/L: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from chemical plants and other industrial activities.
Health effects language: Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Contaminant (units): Chloramines (ppm)
Traditional MCL in mg/L: MRDL = 4
To convert for CCR, multiply by: --
MCL in CCR units: MRDL = 4
MCLG: MRDLG = 4
Major sources in drinking water: Water additive used to control microbes.
Health effects language: Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.

Contaminant (units): Chlorine (ppm)
Traditional MCL in mg/L: MRDL = 4
To convert for CCR, multiply by: --
MCL in CCR units: MRDL = 4
MCLG: MRDLG = 4
Major sources in drinking water: Water additive used to control microbes.
Health effects language: Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

Contaminant (units): Chlorite (ppm)
Traditional MCL in mg/L: 1
To convert for CCR, multiply by: --
MCL in CCR units: 1
MCLG: 0.8
Major sources in drinking water: Byproduct of drinking water chlorination.
Health effects language: Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.

Contaminant (units): Chlorine dioxide (ppb)
Traditional MCL in mg/L: MRDL = 0.8
To convert for CCR, multiply by: 1000
MCL in CCR units: MRDL = 800
MCLG: MRDLG = 800
Major sources in drinking water: Water additive used to control microbes.
Health effects language: Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.

Contaminant (units): Chlorobenzene (ppb)
Traditional MCL in mg/L: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from chemical and agricultural chemical factories.
Health effects language: Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.

Contaminant (units): o-Dichlorobenzene (ppb)
Traditional MCL in mg/L: 0.6
To convert for CCR, multiply by: 1000
MCL in CCR units: 600
MCLG: 600
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

Contaminant (units): p-Dichlorobenzene (ppb)
Traditional MCL in mg/L: 0.075

To convert for CCR, multiply by: 1000
MCL in CCR units: 75
MCLG: 75
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.

Contaminant (units): 1,2-Dichloroethane (ppb)
Traditional MCL in mg/L: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): 1,1-Dichloroethylene (ppb)
Traditional MCL in mg/L: 0.007
To convert for CCR, multiply by: 1000
MCL in CCR units: 7
MCLG: 7
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): cis-1,2-Dichloroethylene (ppb)
Traditional MCL in mg/L: 0.07
To convert for CCR, multiply by: 1000
MCL in CCR units: 70
MCLG: 70
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): trans-1,2-Dichloroethylene (ppb)
Traditional MCL in mg/L: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.

Contaminant (units): Dichloromethane (ppb)
Traditional MCL in mg/L: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from pharmaceutical and chemical factories.
Health effects language: Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

Contaminant (units): 1,2-Dichloropropane (ppb)
Traditional MCL in mg/L: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Ethylbenzene (ppb)
Traditional MCL in mg/L: 0.7
To convert for CCR, multiply by: 1000
MCL in CCR units: 700
MCLG: 700
Major sources in drinking water: Discharge from petroleum refineries.
Health effects language: Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.

Contaminant (units): Haloacetic Acids (HAA5) (ppb)
Traditional MCL in mg/L: 0.060
To convert for CCR, multiply by: 1000
MCL in CCR units: 60
MCLG: N/A
Major sources in drinking water: Byproduct of drinking water disinfection.
Health effects language: Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Styrene (ppb)
Traditional MCL in mg/L: 0.1
To convert for CCR, multiply by: 1000
MCL in CCR units: 100
MCLG: 100
Major sources in drinking water: Discharge from rubber and plastic factories; leaching from landfills.

Health effects language: Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.

Contaminant (units): Tetrachloroethylene (ppb)
Traditional MCL in mg/L: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from factories and dry cleaners.
Health effects language: Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.

Contaminant (units): 1,2,4-Trichlorobenzene (ppb)
Traditional MCL in mg/L: 0.07
To convert for CCR, multiply by: 1000
MCL in CCR units: 70
MCLG: 70
Major sources in drinking water: Discharge from textile-finishing factories.
Health effects language: Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

Contaminant (units): 1,1,1-Trichloroethane (ppb)
Traditional MCL in mg/L: 0.2
To convert for CCR, multiply by: 1000
MCL in CCR units: 200
MCLG: 200
Major sources in drinking water: Discharge from metal degreasing sites and other factories.
Health effects language: Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

Contaminant (units): 1,1,2-Trichloroethane (ppb)
Traditional MCL in mg/L: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 3
Major sources in drinking water: Discharge from industrial chemical factories.
Health effects language: Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

Contaminant (units): Trichloroethylene (ppb)

Traditional MCL in mg/L: 0.005
To convert for CCR, multiply by: 1000
MCL in CCR units: 5
MCLG: 0
Major sources in drinking water: Discharge from metal degreasing sites and other factories.
Health effects language: Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Contaminant (units): TTHMs [Total trihalomethanes] (ppb)
Traditional MCL in mg/L: 0.10/0.080
To convert for CCR, multiply by: 1000
MCL in CCR units: 100/80
MCLG: N/A
Major sources in drinking water: Byproduct of drinking water chlorination.
Health effects language: Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Contaminant (units): Toluene (ppm)
Traditional MCL in mg/L: 1
To convert for CCR, multiply by: --
MCL in CCR units: 1
MCLG: 1
Major sources in drinking water: Discharge from petroleum factories.
Health effects language: Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.

Contaminant (units): Vinyl Chloride (ppb)
Traditional MCL in mg/L: 0.002
To convert for CCR, multiply by: 1000
MCL in CCR units: 2
MCLG: 0
Major sources in drinking water: Leaching from PVC piping; discharge from plastics factories.
Health effects language: Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant (units): Xylenes (ppm)
Traditional MCL in mg/L: 10
To convert for CCR, multiply by: --
MCL in CCR units: 10
MCLG: 10

Major sources in drinking water: Discharge from petroleum factories; discharge from chemical factories.
Health effects language: Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

Key:

Abbreviation	Meaning
AL	Action Level
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MFL	million fibers per liter
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
mrem/year	millirems per year (a measure of radiation absorbed by the body)
N/A	Not Applicable
NTU	Nephelometric Turbidity Units (a measure of water clarity)
pCi/L	picocuries per liter (a measure of radioactivity)
ppm	parts per million, or milligrams per liter (mg/L)
ppb	parts per billion, or micrograms per liter (μg/L)
ppt	parts per trillion, or nanograms per liter
ppq	parts per quadrillion, or picograms per liter
TT	Treatment Technique

BOARD NOTE: Derived from Appendix A to Subpart O to 40 CFR 141 ~~(1999)~~ (2000), as added at 65 Fed. Reg. ~~26024 (May 4, 1999)~~ 76749 (December 7, 2000), effective December 8, 2003.

(Source: Amended at 25 Ill. Reg. ________ effective ______________________)

Section 611.Appendix G NPDWR Violations and Situations Requiring Public Notice

See note 1 at the end of this Appendix for an explanation of the Agency's authority to alter the magnitude of a violation from that set forth in the following table.

	MCL/MRDL/TT violations^2		Monitoring & testing procedure violations	
Contaminant	Tier of public notice required	Citation	Tier of public notice required	Citation

I. Violations of National Primary Drinking Water Regulations (NPDWR):[3]

A. Microbiological Contaminants

1. Total coliform	2	611.325(a)	3	611.521-611.525
2. Fecal coliform/E. coli	1	611.325(b)	[4] 1, 3	611.525
3. Turbidity MCL	2	611.320(a)	3	611.560
4. Turbidity MCL (average of ~~2~~ two days' samples >5 NTU)	[5] 2, 1	611.320(b)	3	611.560
5. Turbidity (for TT violations resulting from a single ~~exceedance~~ exceedence of maximum allowable turbidity level)	[6] 2, 1	611.231(b), 611.233(b)(1), 611.250(a)(2), 611.250(b)(2), 611.250(c)(2), 611.250(d), 611.743(a)(2), 611.743(b)	3	611.531(a), 611.532(b), 611.533(a), 611.744
6. Surface Water Treatment Rule violations, other than violations resulting from single ~~exceedance~~ exceedence of max. allowable turbidity level (TT)	2	611.211, 611.213, 611.220, 611.230-611.233, 611.240-611.242, 611.250	3	611.531-611.533
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from single ~~exceedance~~ exceedence of max. turbidity level (TT)	2	[7] 611.740-611.743	3	611.742, 611.744

B. Inorganic Chemicals (IOCs)

1. Antimony	2	611.301(b)	3	611.600, 611.601, 611.603
2. Arsenic	2	611.300(b), 611.612(c)	3	611.100, 611.101, 611.612
3. Asbestos (fibers >10 m)	2	611.301(b)	3	611.600, 611.601, 611.602
4. Barium	2	611.301(b)	3	611.600, 611.601, 611.603

5. Beryllium	2	611.301(b)	3	611.600, 611.601, 611.603
6. Cadmium	2	611.301(b)	3	611.600, 611.601, 611.603
7. Chromium (total)	2	611.301(b)	3	611.600, 611.601, 611.603
8. Cyanide	2	611.301(b)	3	611.600, 611.601, 611.603
9. Fluoride	2	611.301(b)	3	611.600, 611.601, 611.603
10. Mercury (inorganic)	2	611.301(b)	3	611.600, 611.601, 611.603
11. Nitrate	1	611.301(b)	[8] 1, 3	611.600, 611.601, 611.604, 611.606
12. Nitrite	1	611.301(b)	[8] 1, 3	611.600, 611.601, 611.605, 611.606
13. Total Nitrate and Nitrite	1	611.301(b)	3	611.600, 611.601
14. Selenium	2	611.301(b)	3	611.600, 611.601, 611.603
15. Thallium	2	611.301(b)	3	611.600, 611.601, 611.603

C. Lead and Copper Rule (Action Level for lead is 0.015 mg/L, for copper is 1.3 mg/L)

1. Lead and Copper Rule (TT)	2	611.350-611.355	3	611.356-611.359

D. Synthetic Organic Chemicals (SOCs)

1. 2,4-D	2	611.310(c)	3	611.648
2. 2,4,5-TP (silvex)	2	611.310(c)	3	611.648
3. Alachlor	2	611.310(c)	3	611.648
4. Atrazine	2	611.310(c)	3	611.648
5. Benzo(a)pyrene (PAHs)	2	611.310(c)	3	611.648

6. Carbofuran	2	611.310(c)	3	611.648
7. Chlordane	2	611.310(c)	3	611.648
8. Dalapon	2	611.310(c)	3	611.648
9. Di (2-ethylhexyl) adipate	2	611.310(c)	3	611.648
10. Di (2-ethylhexyl) phthalate	2	611.310(c)	3	611.648
11. Dibromochloropropane (DBCP)	2	611.310(c)	3	611.648
12. Dinoseb	2	611.310(c)	3	611.648
13. Dioxin (2,3,7,8-TCDD)	2	611.310(c)	3	611.648
14. Diquat	2	611.310(c)	3	611.648
15. Endothall	2	611.310(c)	3	611.648
16. Endrin	2	611.310(c)	3	611.648
17. Ethylene dibromide	2	611.310(c)	3	611.648
18. Glyphosate	2	611.310(c)	3	611.648
19. Heptachlor	2	611.310(c)	3	611.648
20. Heptachlor epoxide	2	611.310(c)	3	611.648
21. Hexachlorobenzene	2	611.310(c)	3	611.648
22. Hexachlorocyclo-pentadiene	2	611.310(c)	3	611.648
23. Lindane	2	611.310(c)	3	611.648
24. Methoxychlor	2	611.310(c)	3	611.648
25. Oxamyl (Vydate)	2	611.310(c)	3	611.648
26. Pentachlorophenol	2	611.310(c)	3	611.648
27. Picloram	2	611.310(c)	3	611.648
28. Polychlorinated biphenyls (PCBs)	2	611.310(c)	3	611.648
29. Simazine	2	611.310(c)	3	611.648
30. Toxaphene	2	611.310(c)	3	611.648

E. Volatile Organic Chemicals (VOCs)

1. Benzene	2	611.310(a)	3	611.646
2. Carbon tetrachloride	2	611.310(a)	3	611.646
3. Chlorobenzene (monochlorobenzene)	2	611.310(a)	3	611.646
4. o-Dichlorobenzene	2	611.310(a)	3	611.646
5. p-Dichlorobenzene	2	611.310(a)	3	611.646
6. 1,2-Dichloroethane	2	611.310(a)	3	611.646
7. 1,1-Dichloroethylene	2	611.310(a)	3	611.646
8. cis-1,2-Dichloroethylene	2	611.310(a)	3	611.646
9. trans-1,2-Dichloroethylene	2	611.310(a)	3	611.646
10. Dichloromethane	2	611.310(a)	3	611.646
11. 1,2-Dichloropropane	2	611.310(a)	3	611.646
12. Ethylbenzene	2	611.310(a)	3	611.646
13. Styrene	2	611.310(a)	3	611.646
14. Tetrachloroethylene	2	611.310(a)	3	611.646

15. Toluene	2	611.310(a)	3	611.646
16. 1,2,4-Trichlorobenzene	2	611.310(a)	3	611.646
17. 1,1,1-Trichloroethane	2	611.310(a)	3	611.646
18. 1,1,2-Trichloroethane	2	611.310(a)	3	611.646
19. Trichloroethylene	2	611.310(a)	3	611.646
20. Vinyl chloride	2	611.310(a)	3	611.646
21. Xylenes (total)	2	611.310(a)	3	611.646

F. Radioactive Contaminants

1. Beta/photon emitters	2	~~611.331~~ 611.330(d)	3	611.720(a), 611.732
2. Alpha emitters	2	~~611.330(b)~~ 611.330(c)	3	611.720(a), 611.731
3. Combined radium (226 & 228)	2	~~611.330(a)~~ 611.330(b)	3	611.720(a), 611.731
4. Uranium	[9] 2	611.330(e)	[10] 3	611.720(a), 611.731

G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). ~~EPA~~ USEPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).~~[9]~~[11]

1. Total trihalomethanes (TTHMs)	2	~~[10]~~-[12] 611.310, 611.312(a)	3	611.680-611.688, 611.382(a)-(b)
2. Haloacetic Acids (HAA5)	2	611.312(a)	3	611.382(a)-(b)
3. Bromate	2	611.312(a)	3	611.382(a)-(b)
4. Chlorite	2	611.312(a)	3	611.382(a)-(b)
5. Chlorine (MRDL)	2	611.313(a)	3	611.382(a), (c)
6. Chloramine (MRDL)	2	611.313(a)	3	611.382(a), (c)
7. Chlorine dioxide (MRDL), where any ~~2~~ two consecutive daily samples at entrance to distribution system only are above MRDL	2	611.313(a), 611.383(c)(3)	2-~~[11]~~ [13], 3	611.382(a), (c), 611.383(c)(2)
8. Chlorine dioxide (MRDL), where sample(s) in distribution system the next day are also above MRDL	-~~[12]~~ [14]1	611.313(a), 611.383(c)(3)	1	611.382(a), (c), 611.383(c)(2)
9. Control of DBP precursors--TOC (TT)	2	611.385(a)-(b)	3	611.382(a), (d)
10. Benchmarking and disinfection profiling	N/A	N/A	3	611.742

11. Development of monitoring plan	N/A	N/A	3	611.382(f)

H. Other Treatment Techniques

1. Acrylamide (TT)	2	611.296	N/A	N/A
2. Epichlorohydrin (TT)	2	611.296	N/A	N/A

II. Unregulated Contaminant Monitoring:~~[13]~~ [15]

A. Unregulated contaminants	N/A	N/A	3	611.510
B. Nickel	N/A	N/A	3	611.603, 611.611

III. Public Notification for Relief Equivalent to a SDWA Section 1415 Variance or a Section 1416 Exemption:

A. Operation under relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption	3	~~[14]~~ [16] 1415, 1416	N/A	N/A
B. Violation of conditions of relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption	2	1415, 1416, ~~[15]~~ [17] 611.111, 611.112	N/A	N/A

IV. Other Situations Requiring Public Notification:

A. Fluoride secondary maximum contaminant level (SMCL) ~~exceedance~~ exceedence	3	611.858	N/A	N/A
B. ~~Exceedance~~ Exceedence of nitrate MCL for non-community systems, as allowed by the Agency	1	611.300(d)	N/A	N/A
C. Availability of unregulated contaminant monitoring data	3	611.510	N/A	N/A
D. Waterborne disease outbreak	1	611.101, 611.233(b)(2)	N/A	N/A
E. Other waterborne emergency ~~[16]~~ [18]	1	N/A	N/A	N/A
F. Other situations as determined by the Agency by a SEP issued pursuant to Section 611.110	1, 2, 3	N/A	N/A	N/A

Appendix G--Endnotes

1. Violations and other situations not listed in this table (e.g., reporting violations and failure to prepare Consumer Confidence Reports)~~,~~ do not require notice, unless otherwise determined by the Agency by a SEP issued pursuant to Section 611.110. The Agency may, by a SEP issued pursuant to Section 611.110, further require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under Sections 611.902(a) and 611.903(a).

2. Definition of the abbreviations used: "MCL" means maximum contaminant level, "MRDL" means maximum residual disinfectant level, and "TT" means treatment technique.

3. The term "violations of National Primary Drinking Water Regulations (NPDWR)" is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.

4. Failure to test for fecal coliform or E. coli is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3 violations.

5. A supplier that violates the turbidity MCL of 5 NTU based on an average of measurements over two consecutive days must consult with the Agency within 24 hours after learning of the violation. Based on this consultation, the Agency may subsequently decide to issue a SEP ~~issued~~ pursuant to Section 611.110 that elevates the violation to a Tier 1 violation. If a system is unable to make contact with the Agency in the 24-hour period, the violation is automatically elevated to a Tier 1 violation.

6. A supplier with a treatment technique violation involving a single ~~exceedance~~ exceedence of a maximum turbidity limit under the Surface Water Treatment Rule (SWTR) or the Interim Enhanced Surface Water Treatment Rule (IESWTR) are required to consult with the Agency within 24 hours after learning of the violation. Based on this consultation, the Agency may subsequently decide to issue a SEP pursuant to Section 611.110 that elevates the violation to a Tier 1 violation. If a system is unable to make contact with the Agency in the 24-hour period, the violation is automatically elevated to a Tier 1 violation.

7. Most of the requirements of the Interim Enhanced Surface Water Treatment Rule (63 ~~FR~~ Fed. Reg. 69477 (December 16, 1998)) (~~Secs.~~ Sections 611.740-611.741, 611.743-611.744) become effective January 1, 2002 for a Subpart B supplier (surface water systems and groundwater systems under the direct influence of surface water) that serves at least 10,000 persons. However, Section 611.742 is currently effective. The Surface Water Treatment Rule (SWTR) remains in effect for systems serving at least 10,000 persons even after 2002; the Interim Enhanced Surface Water Treatment Rule adds additional requirements and does not in many cases supercede the SWTR.

8. Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are Tier 3.

9. The uranium MCL Tier 2 violation citations are effective December 8, 2003 for all community water systems.

10. The uranium Tier 3 violation citations are effective December 8, 2000 for all community water systems.

~~9.~~ 11. A Subpart B community or non-transient non-community system supplier that serves 10,000 persons or more must comply with new DBP MCLs, disinfectant MRDLs, and related monitoring requirements beginning January 1, 2002. All other community and non-transient non-community systems must meet the MCLs and MRDLs beginning January 1, 2004. A Subpart B transient non-community system supplier serving 10,000 or more persons that uses chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. A Subpart B transient non-community system supplier that serves fewer than 10,000 persons, which uses only groundwater not under the direct influence of surface water, and which uses chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

~~10.~~ 12. Section 611.310 will no longer apply after January 1, 2004.

~~11.~~ 13. Failure to monitor for chlorine dioxide at the entrance to the distribution system the day after exceeding the MRDL at the entrance to the distribution system is a Tier 2 violation.

~~12.~~ 14. If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and one or more samples taken in the distribution system the next day exceed the MRDL, Tier 1 notification is required. A failure to take the required samples in the distribution system after the MRDL is exceeded at the entry point also triggers Tier 1 notification.

~~13.~~ 15. Some water suppliers must monitor for certain unregulated contaminants listed in Section 611.510.

~~14.~~ 16. This citation refers to ~~Sections~~ sections 1415 and 1416 of the federal Safe Drinking Water Act. ~~Sections~~ sections 1415 and 1416 require that “a schedule prescribed . . . for a public water system granted relief equivalent to a SDWA ~~Section~~ section 1415 variance or a ~~Section~~ section 1416 exemption ~~shall~~ must require compliance by the system . . ..”

~~15.~~ 17. In addition to ~~Sections~~ sections 1415 and 1416 of the federal Safe Drinking Water Act, 40 CFR 142.307 specifies the items and schedule milestones that must be included in relief equivalent to a SDWA ~~Section~~ section 1415 small system variance. In granting any form of relief from an NPDWR, the Board will consider all applicable federal requirements for and limitations on the State’s ability to grant relief consistent with federal law.

~~16.~~ 18. Other waterborne emergencies require a Tier 1 public notice under Section 611.902(a) for situations that do not meet the definition of a waterborne disease outbreak given in Section 611.101, but which still have the potential to have serious adverse effects on health as a result of short-term exposure. These could include outbreaks not related to treatment deficiencies, as well as situations that have the potential to cause outbreaks, such as failures or significant interruption in water treatment processes, natural disasters that disrupt the water supply or distribution system, chemical spills, or unexpected loading of possible pathogens into the source water.

BOARD NOTE: Derived from Appendix A to Subpart Q to 40 CFR 141 (2000), as ~~added~~ amended at 65 Fed. Reg. ~~26040 (May 4, 1999)~~ 76750 (December 7, 2000), effective December 8, 2003.

(Source: Amended at 25 Ill. Reg. ________ effective ______________________)

Section 611.Appendix H Standard Health Effects Language for Public Notification

Contaminant	MCLG [1] mg/L	MCL [2] mg/L	Standard health effects language for public notification
National Primary Drinking Water Regulations (NPDWR):			
A. Microbiological Contaminants			
1a. Total coliform	Zero	See footnote 3	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
1b. Fecal coliform/E. coli	Zero	Zero	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

2a. Turbidity (MCL) [4]	None	1 NTU [5]/5 NTU	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
2b. Turbidity (SWTR TT)	None	TT [7]	Turbidity has no health effects. However,[6] turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
2c. Turbidity (IESWTR TT)	None	TT	Turbidity has no health effects. However,[8] turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
B. Surface Water Treatment Rule (SWTR) and Interim Enhanced Surface Water Treatment Rule (IESWTR) violations			
3. Giardia lamblia (SWTR/IESWTR)	Zero	TT [10]	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites ~~which~~ that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
4. Viruses (SWTR/IESWTR)			

5. Heterotrophic plate count (HPC) bacteria[9] (SWTR/IESWTR)			
6. Legionella (SWTR/IESWTR)			
7. Cryptosporidium (IESWTR)			
C. Inorganic Chemicals (IOCs)			
8. Antimony	0.006	0.006	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
9. Arsenic	None	0.05	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
10. Asbestos (10 µm)	7 MFL[11]	7MFL	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
11. Barium	2	2	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
12. Beryllium	0.004	0.004	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
13. Cadmium	0.005	0.005	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
14. Chromium (total)	0.1	0.1	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

15. Cyanide	0.2	0.2	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
16. Fluoride	4.0	4.0	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children’s teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
17. Mercury (inorganic)	0.002	0.002	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
18. Nitrate	10	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
19. Nitrite	1	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
20. Total Nitrate and Nitrite	10	10	Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

21. Selenium	0.05	0.05	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
22. Thallium	0.0005	0.002	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
D. Lead and Copper Rule			
23. Lead	Zero	TT [12]	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
24. Copper	1.3	TT [13]	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson’s Disease should consult their personal doctor.
E. Synthetic Organic Chemicals (SOCs)			
25. 2,4-D	0.07	0.07	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

26. 2,4,5-TP (silvex)	0.05	0.05	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
27. Alachlor	Zero	0.002	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
28. Atrazine	0.003	0.003	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
29. Benzo(a)pyrene (PAHs).	Zero	0.0002	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
30. Carbofuran	0.04	0.04	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
31. Chlordane	Zero	0.002	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
32. Dalapon	0.2	0.2	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

33. ~~Di (2-ethylhexyl)adipate~~ Di(2-ethylhexyl)adipate	0.4	0.4	Some people who drink water containing ~~di(2-ethylhexyl) adipate~~ di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience general toxic effects or reproductive difficulties.
34. ~~Di (2-ethylhexyl)-phthalate~~ Di(2-ethylhexyl)-phthalate	Zero	0.006	Some people who drink water containing ~~di(2-ethylhexyl) phthalate~~ di(2-ethylhexyl)phthalate in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
35. Dibromochloropropane (DBCP)	Zero	0.0002	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
36. Dinoseb	0.007	0.007	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
37. Dioxin (2,3,7,8-TCDD)	Zero	3 x 10^{-8}	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
38. Diquat	0.02	0.02	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
39. Endothall	0.1	0.1	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
40. Endrin	0.002	0.002	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

41. Ethylene dibromide	Zero	0.00005	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
42. Glyphosate	0.7	0.7	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
43. Heptachlor	Zero	0.0004	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
44. Heptachlor epoxide	Zero	0.0002	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
45. Hexachlorobenzene	Zero	0.001	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
46. Hexachlorocyclopentadiene	0.05	0.05	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
47. Lindane	0.0002	0.0002	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

48. Methoxychlor	0.04	0.04	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
49. Oxamyl (Vydate)	0.2	0.2	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
50. Pentachlorophenol	Zero	0.001	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
51. Picloram	0.5	0.5	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
52. Polychlorinated biphenyls (PCBs)	Zero	0.0005	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
53. Simazine	0.004	0.004	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
54. Toxaphene	Zero	0.003	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

F. Volatile Organic Chemicals (VOCs)			
55. Benzene	Zero	0.005	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
56. Carbon tetrachloride	Zero	0.005	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
57. Chlorobenzene (mono-chlorobenzene)	0.1	0.1	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
58. o-Dichlorobenzene	0.6	0.6	Some people who drink water containing o- dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
59. p-Dichlorobenzene	0.075	0.075	Some people who drink water containing p- dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
60. 1,2-Dichloroethane	Zero	0.005	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
61. 1,1-Dichloroethylene	0.007	0.007	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
62. cis-1,2-Dichloro-ethylene	0.07	0.07	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

63. trans-1,2-Dichloro-ethylene	0.1	0.1	Some people who drink water containing trans-1,2-dichloro-ethylene well in excess of the MCL over many years could experience problems with their liver.
64. Dichloromethane	Zero	0.005	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
65. 1,2-Dichloropropane	Zero	0.005	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
66. Ethylbenzene	0.7	0.7	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
67. Styrene	0.1	0.1	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
68. Tetrachloroethylene	Zero	0.005	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
69. Toluene	1	1	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
70. 1,2,4-Trichlorobenzene	0.07	0.07	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

71. 1,1,1-Trichloroethane	0.2	0.2	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
72. 1,1,2-Trichloroethane	0.003	0.005	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
73. Trichloroethylene	Zero	0.005	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
74. Vinyl chloride	Zero	0.002	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
75. Xylenes (total)	10	10	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.
G. Radioactive Contaminants			
76. Beta/photon emitters	Zero	4 mrem/yr [14]	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
77. Alpha emitters	Zero	15 pCi/L [15]	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

78. Combined radium (226 & 228)	Zero	5 pCi/L	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
79. Uranium [16]	Zero	30 μg/L	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.
H. Disinfection Byproducts (DBPs), Byproduct Precursors, and Disinfectant Residuals: Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). USEPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAA5). ~~[16]~~[17]			
~~79.~~ 80. Total trihalomethanes (TTHMs)	N/A	0.10/0.080~~[17]~~ ~~[18]~~[18] [19]	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
~~80.~~ 81. Haloacetic Acids (HAA5)	N/A	0.060~~-~~ ~~[19]~~ [20]	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
~~81.~~ 82. Bromate	Zero	0.010	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
~~82.~~ 83. Chlorite	0.08	1.0	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.

~~83.~~ 84. Chlorine	4 (MRDLG) ~~[20]~~ [21]	4.0 (MRDL) ~~[21]~~ [22]	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
~~84.~~ 85. Chloramines	4 (MRDLG)	4.0 (MRDL)	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
~~85a.~~ 85a. Chlorine dioxide, where any ~~2~~ two consecutive daily samples taken at the entrance to the distribution system are above the MRDL	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. Add for public notification only: The chlorine dioxide violations reported today are the result of ~~exceedances~~ exceedences at the treatment facility only, not within the distribution system ~~which~~ that delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.

~~85b.~~ 86a. Chlorine dioxide, where one or more distribution system samples are above the MRDL	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. Add for public notification only: The chlorine dioxide violations reported today include ~~exceedances~~ exceedences of the USEPA standard within the distribution system ~~which~~ that delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on ~~short- term~~ short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.
~~86.~~ 87. Control of DBP precursors (TOC)	None	TT	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
I. Other Treatment Techniques:			

~~87.~~ 88. Acrylamide	Zero	TT	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
~~88.~~ 89. Epichlorohydrin	Zero	TT	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

Appendix H--Endnotes

1. "MCLG" means maximum contaminant level goal.

2. "MCL" means maximum contaminant level.

3. For a water supplier analyzing at least 40 samples per month, no more than 5.0 percent of the monthly samples may be positive for total coliforms. For a supplier analyzing fewer than 40 samples per month, no more than one sample per month may be positive for total coliforms.

4. There are various regulations that set turbidity standards for different types of systems, including Section 611.320, the 1989 Surface Water Treatment Rule, and the 1998 Interim Enhanced Surface Water Treatment Rule. The MCL for the monthly turbidity average is 1 NTU; the MCL for the 2-day average is 5 NTU for a supplier that is required to filter but has not yet installed filtration (Section 611.320).

5. "NTU" means nephelometric turbidity unit.

6. There are various regulations that set turbidity standards for different types of systems, including Section 611.320, the 1989 Surface Water Treatment Rule (SWTR), and the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR). A supplier subject to the Surface Water Treatment Rule (both filtered and unfiltered) may not exceed 5 NTU. In addition, in filtered systems, 95 percent of samples each month must not exceed 0.5 NTU in systems using conventional or direct filtration and must not exceed 1 NTU in systems using slow sand or diatomaceous earth filtration or other filtration technologies approved by the Agency.

7. "TT" means treatment technique.

8. There are various regulations that set turbidity standards for different types of systems, including Section 611.320, the 1989 Surface Water Treatment Rule (SWTR), and the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR). For a supplier subject to the IESWTR (systems serving at least 10,000 people, using surface water or groundwater under the

direct influence of surface water), that use conventional filtration or direct filtration, after January 1, 2002, the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. A supplier subject to the IESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the Agency.

9. The bacteria detected by heterotrophic plate count (HPC) are not necessarily harmful. HPC is simply an alternative method of determining disinfectant residual levels. The number of such bacteria is an indicator of whether there is enough disinfectant in the distribution system.

10. SWTR and IESWTR treatment technique violations that involve turbidity ~~exceedances~~ exceedences may use the health effects language for turbidity instead.

11. Millions of fibers per liter.

12. Action Level = 0.015 mg/L.

13. Action Level = 1.3 mg/L.

14. Millirems per year.

15. Picocuries per liter.

16. The uranium MCL is effective December 8, 2003 for all community water systems.

~~16.~~ 17. A surface water system supplier or a groundwater system supplier under the direct influence of surface water ~~are~~ is regulated under Subpart B of this Part. A Supbart B community water system supplier or a non-transient non-community system supplier that serves 10,000 or more persons must comply with DBP MCLs and disinfectant maximum residual disinfectant levels (MRDLs) beginning January 1, 2002. All other community and non-transient non-community system suppliers must meet the MCLs and MRDLs beginning January 1, 2004. Subpart B transient non-community system suppliers serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. Subpart B transient non-community system suppliers serving fewer than 10,000 persons and systems using only groundwater not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

~~17.~~ 18. The MCL of 0.10 mg/L for TTHMs is in effect until January 1, 2002 for a Subpart B community water system supplier serving 10,000 or more persons. This MCL is in effect until January 1, 2004 for community water systems with a population of 10,000 or more using only ~~ground water~~ groundwater not under the direct influence of surface water. After these deadlines, the MCL will be 0.080 mg/L. On January 1, 2004, a supplier serving ~~less~~ fewer than 10,000 will have to comply with the new MCL as well.

~~18.~~ 19. The MCL for total trihalomethanes is the sum of the concentrations of the individual trihalomethanes.

~~19.~~ 20. The MCL for haloacetic acids is the sum of the concentrations of the individual haloacetic acids.

~~20.~~ 21. “MRDLG” means maximum residual disinfectant level goal.

~~21.~~ 22. “MRDL” means maximum residual disinfectant level.

BOARD NOTE: Derived from Appendix B to Subpart Q to 40 CFR 141 (2000), as added at 65 Fed. Reg. ~~26043 (May 4, 1999)~~ 76751 (December 7, 2000), effective December 8, 2003.

(Source: Amended at 25 Ill. Reg. ________ effective ______________________)