

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

1) Heading of the Part: Primary Drinking Water Standards

2) Code citation: 35 Ill. Adm. Code 611

3) Section Numbers: Proposed Action:

611.102	Amendment
611.381	Amendment
611.526	Amendment
611.531	Amendment
611.600	Amendment
611.611	Amendment
611.612	Amendment
611.645	Amendment
611.742	Amendment
611.802	Amendment
611.883	Amendment
611.884	Amendment
611.901	Amendment
611.907	Amendment
611.953	Amendment
611.955	Amendment
611.956	Amendment
611.1004	Amendment
611.1052	Amendment
611.1055	Amendment
611.1061	Amendment
611.APPENDIX G	Amendment

4) Statutory Authority: 415 ILCS 5/7.2, 17, 17.5, and 27

5) A Complete Description of the Subjects and Issues Involved: The following briefly describes the subjects and issues involved in the docket R15-6 rulemaking of which the amendments to Part 611 are a single segment. Also affected is 35 Ill. Adm. Code 611, which is covered by a separate notice in this issue of the *Illinois Register*. A comprehensive description is contained in the Board's opinion and order of November 20, 2014, proposing amendments in docket R15-6, which opinion and order is available from the address below.

This proceeding updates the Illinois Safe Drinking Water Act (SDWA) rules to correspond with amendments adopted by the United States Environmental Protection



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Agency (USEPA) that appeared in the Federal Register during a single update period. The docket and time period that is involved in this proceeding is the following:

R15-6 Federal SDWA amendments that occurred during the period January 1, 2014 through June 30, 2014.

The R15-6 docket amends rules in Parts 611. The following table briefly summarizes the federal actions in the update period:

February 26, 2014 (79 Fed. Reg. 10665)	USEPA adopted minor corrections to the Revised the Total Coliform Rule.
June 19, 2014 (79 Fed. Reg. 35801)	USEPA approved 21 alternative equivalent analytical methods for analyzing a variety of physical parameters and chemical and microbiological contaminants to demonstrate compliance with the drinking water standards.
June 27, 2014 (79 Fed. Reg. 36428)	USEPA corrected errors in the June 19, 2014 summary approval of alternative equivalent methods.

A comprehensive description of the proposed amendments is contained in the Board's opinion and order of November 20, 2014, proposing amendments in docket R15-6, which opinion and order is available from the address below. The Board has included a limited number of corrections and clarifying amendments that are not directly derived from the instant federal amendments.

Tables appear in the Board's opinion and order of November 20, 2014 in docket R15-6 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those corrections and amendments should refer to the November 20, 2014 opinion and order in docket R15-6.

Section 17.5 of the Environmental Protection Act [415 ILCS 5/17.5] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

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- 6) Published studies or reports, and sources of underlying data, used to compose this rulemaking: None
- 7) Will this rulemaking replace an emergency rule currently in effect? No
- 8) Does this rulemaking contain an automatic repeal date? No
- 9) Does this rulemaking contain incorporations by reference? Yes
- 10) Statement of Statewide Policy Objectives: These proposed amendments do not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act. [30 ILCS 805/3(b) (2012)]
- 11) Are there any other rulemakings pending on this Part? No
- 12) Time, Place and Manner in which interested persons may comment on this proposed rulemaking: The Board will accept written public comment on this proposal for a period of 45 days after the date of this publication. Comments should reference docket R15-6 and be addressed to:

John T. Therriault, Clerk
Illinois Pollution Control Board
State of Illinois Center, Suite 11-500
100 W. Randolph St.
Chicago IL 60601

Please direct inquiries to the following person and reference docket R15-6:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago IL 60601

312/814-6924
e-mail: michael.mccambridge@illinois.gov

Request copies of the Board's opinion and order at 312/814-3620, or download a copy from the Board's Website at <http://www.ipcb.state.il.us>.

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- 13) Initial Regulatory Flexibility Analysis:
- A) Types of small businesses, small municipalities, and not-for-profit corporations affected: This rulemaking may affect those small businesses, small municipalities, and not-for-profit corporations that own or operate a public water supply. These proposed amendments do not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act. [30 ILCS 805/3(b) (2012)]
 - B) Reporting, bookkeeping or other procedures required for compliance: The existing rules and proposed amendments require extensive reporting, bookkeeping and other procedures, including the preparation of reports, water analyses, and maintenance of operating records. These proposed amendments do not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act. [30 ILCS 805/3(b) (2012)]
 - C) Types of professional skills necessary for compliance: Compliance with the existing rules and proposed amendments may require the services of an attorney, certified public accountant, chemist, and registered professional engineer. These proposed amendments do not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act. [30 ILCS 805/3(b) (2012)]
- 14) Regulatory Agenda on which this rulemaking was summarized: 38 Ill. Reg. 13977; 14000-02 (July 7, 2014)

The full text of the Proposed Amendments begins on the next page:

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

PART 611
PRIMARY DRINKING WATER STANDARDS

SUBPART A: GENERAL

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

SUBPART B: FILTRATION AND DISINFECTION

Section	
611.201	Requiring a Demonstration

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- 611.202 Procedures for Agency Determinations
- 611.211 Filtration Required
- 611.212 Groundwater under Direct Influence of Surface Water
- 611.213 No Method of HPC Analysis
- 611.220 General Requirements
- 611.230 Filtration Effective Dates
- 611.231 Source Water Quality Conditions
- 611.232 Site-Specific Conditions
- 611.233 Treatment Technique Violations
- 611.240 Disinfection
- 611.241 Unfiltered PWSs
- 611.242 Filtered PWSs
- 611.250 Filtration
- 611.261 Unfiltered PWSs: Reporting and Recordkeeping
- 611.262 Filtered PWSs: Reporting and Recordkeeping
- 611.271 Protection during Repair Work
- 611.272 Disinfection Following Repair
- 611.276 Recycle Provisions

SUBPART C: USE OF NON-CENTRALIZED TREATMENT DEVICES

- Section
- 611.280 Point-of-Entry Devices
 - 611.290 Use of Point-of-Use Devices or Bottled Water

SUBPART D: TREATMENT TECHNIQUES

- Section
- 611.295 General Requirements
 - 611.296 Acrylamide and Epichlorohydrin
 - 611.297 Corrosion Control

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

- Section
- 611.300 Old MCLs for Inorganic Chemical Contaminants
 - 611.301 Revised MCLs for Inorganic Chemical Contaminants

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- 611.310 State-Only Maximum Contaminant Levels (MCLs) for Organic Chemical Contaminants
- 611.311 Revised MCLs for Organic Chemical Contaminants
- 611.312 Maximum Contaminant Levels (MCLs) for Disinfection Byproducts (DBPs)
- 611.313 Maximum Residual Disinfectant Levels (MRDLs)
- 611.320 Turbidity (Repealed)
- 611.325 Microbiological Contaminants
- 611.330 Maximum Contaminant Levels for Radionuclides
- 611.331 Beta Particle and Photon Radioactivity (Repealed)

SUBPART G: LEAD AND COPPER

Section

- 611.350 General Requirements
- 611.351 Applicability of Corrosion Control
- 611.352 Corrosion Control Treatment
- 611.353 Source Water Treatment
- 611.354 Lead Service Line Replacement
- 611.355 Public Education and Supplemental Monitoring
- 611.356 Tap Water Monitoring for Lead and Copper
- 611.357 Monitoring for Water Quality Parameters
- 611.358 Monitoring for Lead and Copper in Source Water
- 611.359 Analytical Methods
- 611.360 Reporting
- 611.361 Recordkeeping

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

Section

- 611.380 General Requirements
- 611.381 Analytical Requirements
- 611.382 Monitoring Requirements
- 611.383 Compliance Requirements
- 611.384 Reporting and Recordkeeping Requirements
- 611.385 Treatment Technique for Control of Disinfection Byproduct (DBP) Precursors

SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

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Section	
611.480	Alternative Analytical Techniques
611.490	Certified Laboratories
611.491	Laboratory Testing Equipment
611.500	Consecutive PWSs
611.510	Special Monitoring for Unregulated Contaminants (Repealed)

SUBPART L: MICROBIOLOGICAL MONITORING
AND ANALYTICAL REQUIREMENTS

Section	
611.521	Routine Coliform Monitoring
611.522	Repeat Coliform Monitoring
611.523	Invalidation of Total Coliform Samples
611.524	Sanitary Surveys
611.525	Fecal Coliform and E. Coli Testing
611.526	Analytical Methodology
<u>611.527</u>	<u>Response to Violation</u>
611.528	Transition from Subpart L to Subpart AA Requirements
611.527	Response to Violation
611.531	Analytical Requirements
611.532	Unfiltered PWSs
611.533	Filtered PWSs

SUBPART M: TURBIDITY MONITORING AND ANALYTICAL REQUIREMENTS

Section	
611.560	Turbidity

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section	
611.591	Violation of a State MCL
611.592	Frequency of State Monitoring
611.600	Applicability
611.601	Monitoring Frequency
611.602	Asbestos Monitoring Frequency

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611.603	Inorganic Monitoring Frequency
611.604	Nitrate Monitoring
611.605	Nitrite Monitoring
611.606	Confirmation Samples
611.607	More Frequent Monitoring and Confirmation Sampling
611.608	Additional Optional Monitoring
611.609	Determining Compliance
611.610	Inorganic Monitoring Times
611.611	Inorganic Analysis
611.612	Monitoring Requirements for Old Inorganic MCLs
611.630	Special Monitoring for Sodium
611.631	Special Monitoring for Inorganic Chemicals (Repealed)

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section	
611.640	Definitions
611.641	Old MCLs
611.645	Analytical Methods for Organic Chemical Contaminants
611.646	Phase I, Phase II, and Phase V Volatile Organic Contaminants
611.647	Sampling for Phase I Volatile Organic Contaminants (Repealed)
611.648	Phase II, Phase IIB, and Phase V Synthetic Organic Contaminants
611.650	Monitoring for 36 Contaminants (Repealed)
611.657	Analytical Methods for 36 Contaminants (Repealed)
611.658	Special Monitoring for Organic Chemicals (Repealed)

SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

Section	
611.680	Sampling, Analytical, and other Requirements (Repealed)
611.683	Reduced Monitoring Frequency (Repealed)
611.684	Averaging (Repealed)
611.685	Analytical Methods (Repealed)
611.686	Modification to System (Repealed)
611.687	Sampling for THM Potential (Repealed)
611.688	Applicability Dates (Repealed)

SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

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

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

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

SUBPART S: GROUNDWATER RULE

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

SUBPART T: REPORTING AND RECORDKEEPING

Section	
611.830	Applicability
611.831	Monthly Operating Report
611.832	Notice by Agency (Repealed)
611.833	Cross Connection Reporting
611.840	Reporting
611.851	Reporting MCL, MRDL, and other Violations (Repealed)
611.852	Reporting other Violations (Repealed)
611.853	Notice to New Billing Units (Repealed)

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- 611.854 General Content of Public Notice (Repealed)
- 611.855 Mandatory Health Effects Language (Repealed)
- 611.856 Fluoride Notice (Repealed)
- 611.858 Fluoride Secondary Standard (Repealed)
- 611.860 Record Maintenance
- 611.870 List of 36 Contaminants (Repealed)

SUBPART U: CONSUMER CONFIDENCE REPORTS

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

SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

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

SUBPART W: INITIAL DISTRIBUTION SYSTEM EVALUATIONS

- Section
- 611.920 General Requirements
- 611.921 Standard Monitoring

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- 611.922 System-Specific Studies
- 611.923 40/30 Certification
- 611.924 Very Small System Waivers
- 611.925 Subpart Y Compliance Monitoring Location Recommendations

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

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

SUBPART Y: STAGE 2 DISINFECTION BYPRODUCTS REQUIREMENTS

- Section
- 611.970 General Requirements
- 611.971 Routine Monitoring
- 611.972 Subpart Y Monitoring Plan
- 611.973 Reduced Monitoring
- 611.974 Additional Requirements for Consecutive Systems
- 611.975 Conditions Requiring Increased Monitoring
- 611.976 Operational Evaluation Levels
- 611.977 Requirements for Remaining on Reduced TTHM and HAA5 Monitoring Based on Subpart I Results
- 611.978 Requirements for Remaining on Increased TTHM and HAA5 Monitoring Based on Subpart I Results
- 611.979 Reporting and Recordkeeping Requirements

SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM

- Section
- 611.1000 General Requirements
- 611.1001 Source Water Monitoring Requirements: Source Water Monitoring

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- 611.1002 Source Water Monitoring Requirements: Sampling Schedules
- 611.1003 Source Water Monitoring Requirements: Sampling Locations
- 611.1004 Source Water Monitoring Requirements: Analytical Methods
- 611.1005 Source Water Monitoring Requirements: Approved Laboratories
- 611.1006 Source Water Monitoring Requirements: Reporting Source Water Monitoring Results
- 611.1007 Source Water Monitoring Requirements: Grandfathering Previously Collected Data
- 611.1008 Disinfection Profiling and Benchmarking Requirements: Requirements When Making a Significant Change in Disinfection Practice
- 611.1009 Disinfection Profiling and Benchmarking Requirements: Developing the Disinfection Profile and Benchmark
- 611.1010 Treatment Technique Requirements: Bin Classification for Filtered Systems
- 611.1011 Treatment Technique Requirements: Filtered System Additional Cryptosporidium Treatment Requirements
- 611.1012 Treatment Technique Requirements: Unfiltered System Cryptosporidium Treatment Requirements
- 611.1013 Treatment Technique Requirements: Schedule for Compliance with Cryptosporidium Treatment Requirements
- 611.1014 Treatment Technique Requirements: Requirements for Uncovered Finished Water Storage Facilities
- 611.1015 Requirements for Microbial Toolbox Components: Microbial Toolbox Options for Meeting Cryptosporidium Treatment Requirements
- 611.1016 Requirements for Microbial Toolbox Components: Source Toolbox Components
- 611.1017 Requirements for Microbial Toolbox Components: Pre-Filtration Treatment Toolbox Components
- 611.1018 Requirements for Microbial Toolbox Components: Treatment Performance Toolbox Components
- 611.1019 Requirements for Microbial Toolbox Components: Additional Filtration Toolbox Components
- 611.1020 Requirements for Microbial Toolbox Components: Inactivation Toolbox Components
- 611.1021 Reporting and Recordkeeping Requirements: Reporting Requirements
- 611.1022 Reporting and Recordkeeping Requirements: Recordkeeping Requirements
- 611.1023 Requirements to Respond to Significant Deficiencies Identified in Sanitary Surveys Performed by USEPA or the Agency

SUBPART AA: REVISED TOTAL COLIFORM RULE

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Section

611.1051	General
611.1052	Analytical Methods and Laboratory Certification
611.1053	General Monitoring Requirements for all PWSs
611.1054	Routine Monitoring Requirements for Non-CWSs That Serve 1,000 or Fewer People Using Only Groundwater
611.1055	Routine Monitoring Requirements for CWSs That Serve 1,000 or Fewer People Using Only Groundwater
611.1056	Routine Monitoring Requirements for Subpart B Systems That Serve 1,000 or Fewer People
611.1057	Routine Monitoring Requirements for PWSs That Serve More Than 1,000 People
611.1058	Repeat Monitoring and E. coli Requirements
611.1059	Coliform Treatment Technique Triggers and Assessment Requirements for Protection Against Potential Fecal Contamination
611.1060	Violations
611.1061	Reporting and Recordkeeping
611.APPENDIX A	Regulated Contaminants
611.APPENDIX B	Percent Inactivation of G. Lamblia Cysts
611.APPENDIX C	Common Names of Organic Chemicals
611.APPENDIX D	Defined Substrate Method for the Simultaneous Detection of Total Coliforms and Eschericia Coli from Drinking Water
611.APPENDIX E	Mandatory Lead Public Education Information for Community Water Systems
611.APPENDIX F	Mandatory Lead Public Education Information for Non-Transient Non-Community Water Systems
611.APPENDIX G	NPDWR Violations and Situations Requiring Public Notice
611.APPENDIX H	Standard Health Effects Language for Public Notification
611.APPENDIX I	Acronyms Used in Public Notification Regulation
611.TABLE A	Total Coliform Monitoring Frequency
611.TABLE B	Fecal or Total Coliform Density Measurements
611.TABLE C	Frequency of RDC Measurement
611.TABLE D	Number of Lead and Copper Monitoring Sites
611.TABLE E	Lead and Copper Monitoring Start Dates
611.TABLE F	Number of Water Quality Parameter Sampling Sites
611.TABLE G	Summary of Section 611.357 Monitoring Requirements for Water Quality Parameters

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611.TABLE H	CT Values (mg·min/ℓ) for Cryptosporidium Inactivation by Chlorine Dioxide
611.TABLE I	CT Values (mg·min/ℓ) for Cryptosporidium Inactivation by Ozone
611.TABLE J	UV Dose Table for Cryptosporidium, Giardia lamblia, and Virus Inactivation Credit
611.TABLE Z	Federal Effective Dates

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

SOURCE: Adopted in R88-26 at 14 Ill. Reg. 16517, effective September 20, 1990; amended in R90-21 at 14 Ill. Reg. 20448, effective December 11, 1990; amended in R90-13 at 15 Ill. Reg. 1562, effective January 22, 1991; amended in R91-3 at 16 Ill. Reg. 19010, effective December 1, 1992; amended in R92-3 at 17 Ill. Reg. 7796, effective May 18, 1993; amended in R93-1 at 17 Ill. Reg. 12650, effective July 23, 1993; amended in R94-4 at 18 Ill. Reg. 12291, effective July 28, 1994; amended in R94-23 at 19 Ill. Reg. 8613, effective June 20, 1995; amended in R95-17 at 20 Ill. Reg. 14493, effective October 22, 1996; amended in R98-2 at 22 Ill. Reg. 5020, effective March 5, 1998; amended in R99-6 at 23 Ill. Reg. 2756, effective February 17, 1999; amended in R99-12 at 23 Ill. Reg. 10348, effective August 11, 1999; amended in R00-8 at 23 Ill. Reg. 14715, effective December 8, 1999; amended in R00-10 at 24 Ill. Reg. 14226, effective September 11, 2000; amended in R01-7 at 25 Ill. Reg. 1329, effective January 11, 2001; amended in R01-20 at 25 Ill. Reg. 13611, effective October 9, 2001; amended in R02-5 at 26 Ill. Reg. 3522, effective February 22, 2002; amended in R03-4 at 27 Ill. Reg. 1183, effective January 10, 2003; amended in R03-15 at 27 Ill. Reg. 16447, effective October 10, 2003; amended in R04-3 at 28 Ill. Reg. 5269, effective March 10, 2004; amended in R04-13 at 28 Ill. Reg. 12666, effective August 26, 2004; amended in R05-6 at 29 Ill. Reg. 2287, effective January 28, 2005; amended in R06-15 at 30 Ill. Reg. 17004, effective October 13, 2006; amended in R07-2/R07-11 at 31 Ill. Reg. 11757, effective July 27, 2007; amended in R08-7/R08-13 at 33 Ill. Reg. 633, effective December 30, 2008; amended in R10-1/R10-17/R11-6 at 34 Ill. Reg. 19848, effective December 7, 2010; amended in R12-4 at 36 Ill. Reg. 7110, effective April 25, 2012; amended in R13-2 at 37 Ill. Reg. 1978, effective February 4, 2013; amended in R14-8 at 38 Ill. Reg. 3608, effective January 27, 2014; amended in R14-9 at 38 Ill. Reg. 9792, effective April 21, 2014; amended in R15-6 at 39 Ill. Reg. _____, effective _____.

SUBPART A: GENERAL

Section 611.102 Incorporations by Reference

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- 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:

“AMI Turbiwell Method” means “Continuous Measurement of Turbidity Using a SWAN AMI Turbiwell Turbidimeter,” available from NEMI or from SWAN Analytische Instrumente AG.

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

“ChlordioX Plus Test” means “Chlorine Dioxide and Chlorite in Drinking Water by Amperometry using Disposable Sensors,” available from Palintest Ltd.

“Charm Fast Phage” means “Fast Phage Test Procedure. Presence/Absence for Coliphage in Ground Water with Same Day Positive Prediction,” version 009 (Nov. 2012), available from Charm Sciences, Inc.

“Colilert® Test” means Standard Methods, 21st ed., Method 9223 B, Chromogenic Substrate Coliform Test (using IDEXX Laboratories, Inc. Colilert® medium).

“Colilert-18® Test” means Standard Methods, 21st ed., Method 9223 B, Chromogenic Substrate Coliform Test (using IDEXX Laboratories, Inc. Colilert-18® medium).

“Colisure™/Colisure™ Test” means “Colisure Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia Coli in Drinking Water,” available from IDEXX Laboratories, Inc.

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

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“Chromocult® Method” means “Chromocult® Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters,” available from EMD Millipore.

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

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

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

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

“EML Procedures Manual” means “EML Procedures Manual, HASL 300,” available from USDOE, EML.

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

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

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

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“Guidance Manual for Filtration and Disinfection” means “Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems using Surface Water Sources,” March 1991, available from USEPA, NSCEP.

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

“Hach Method 10260” means “Hach Method 10260—Determination of Chlorinated Oxidants (Free and Total) in Water Using Disposable Planar Reagent-filled Cuvettes and Mesofluic Channel Colorimetry,” available from the Hach Company.

“Hach SPDANS 2 Method 10225” means “Hach Company SPADNS 2 (Arsenic-free) Fluoride Method 10225—Spectrophotometric Measurement of Fluoride in Water and Wastewater,” available from the Hach Co.

“Hach TNTplus 835/836 Method 10206” means “Hach Company TNTplus 835/836 Nitrate Method 10206—Spectrophotometric Measurement of Nitrate in Water and Wastewater,” available from the Hach Co.

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

“Kelada 01” means “Kelada Automated Test Methods for Total Cyanide, Acid Dissociable Cyanide, And Thiocyanate,” Revision 1.2, available from NTIS.

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

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“Method ME355.01” means “Determination of Cyanide in Drinking Water by GC/MS Headspace Analysis,” available from NEMI or from H&E Testing Laboratory.

“Mitchell Method M5271” means “Determination of Turbidity by Laser Nephelometry,” available from NEMI and Leck Mitchell, PhD.

“Mitchell Method M5331” means “Determination of Turbidity by LED Nephelometry,” available from NEMI and Leck Mitchell, PhD.

“Modified Colitag™ Method Test” means “Modified Colitag™ Test Method for Simultaneous Detection of E. coli and other Total Coliforms in Water,” available from NEMI and CPI International.

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

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

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

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

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

“ONPG-MUG Test” (meaning “minimal medium ortho-nitrophenyl-beta-d-galactopyranoside-4-methyl-umbelliferyl-beta-d-glucuronide test”), also called the “Autoanalysis- Colilert® Test-

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System,²² is Method 9223, available in Standard Methods for the Examination of Water and Wastewater,²² 18th, 19th, 20th, or 21st ed., from American Public Health Association and the American Water Works Association.

Orion Method AQ4500²² means Determination of Turbidity by LED Nephelometry,²² available from Thermo Scientific.

Palintest ChloroSense²² means Measurement of Free and Total Chlorine in Drinking Water by Palintest ChloroSense,²² available from NEMI or Palintest Ltd.

Palintest Method 1001²² means Lead in Drinking Water by Differential Pulse Anodic Stripping Voltammetry,² Method Number 1001,²² available from Palintest, Ltd. or the Hach Company.

QuikChem Method 10-204-00-1-X²² means Digestion and distillation of total cyanide in drinking and wastewaters using MICRO DIST and determination of cyanide by flow injection analysis,²² available from Lachat Instruments.

Readycult® 2000²² means Readycult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters,²² v. 1.0, available from EMD Millipore.

Readycult® 2007²² means Readycult® Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters,²² v. 1.1, available from EMD Millipore.

SimPlate Method²² means IDEXX SimPlate TM HPC Test Method for Heterotrophs in Water,²² available from IDEXX Laboratories, Inc.

Standard Methods²² means Standard Methods for the Examination of Water and Wastewater,²² available from the American Public Health Association or the American Waterworks Association.

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

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

“Systea Easy (1-Reagent)” means “Systea Easy (1-Reagent) Nitrate Method,” available from NEMI or Systea Scientific LLC.

“Technical Bulletin 601” means “Technical Bulletin 601, Standard Method of Testing for Nitrate in Drinking Water,” July 1994, available from Thermo Scientific.

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

“Tecta EC/TC P-A Test” means “Tecta EC/TC P-A Test “Presence/Absence Method for Simultaneous Detection of Total Coliforms and Escherichia coli (E. coli) in Drinking Water,” available from Veolia Water Solutions and Technologies.

“USEPA Asbestos Method 100.1” means Method 100.1, “Analytical Method for Determination of Asbestos Fibers in Water,” September 1983, available from NTIS.

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

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

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

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

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

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

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

“USEPA Method 1602” means “Method 1602: Male-specific (F⁺) and Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure,” available from USEPA, Water Resource Center.

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

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

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

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“USEPA NERL Method 415.3 (rev. 1.2)” means Method 415.3, Revision 1.2, “Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water,” USEPA, September 2009, EPA 600/R-09/122. Available from USEPA, Office of Research and Development.

“USEPA NERL Method 525.3 (ver. 1.0)” means Method 525.3, Version 1.0, “Determination of Total Semivolatile Organic Chemicals in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS),” USEPA, February 2012, EPA 600/R-12/010. Available from USEPA, Office of Research and Development.

“USEPA NERL Method 549.2” means Method 549.2, Revision 1.0, “Determination of Diquat and Paraquat in Drinking Water by Liquid-Solid Extraction and High Performance Liquid Chromatography with Ultraviolet Detection,” June 1997. Available from USEPA, Office of Research and Development.

“USEPA OGWDW Methods” means the methods listed as available from the USEPA, Office of Ground Water and Drinking Water (Methods 302.0, 317.0 (rev. 2.0), 326.0 (rev. 1.0), 327.0 (rev. 1.1), 334.0, 515.4 (rev. 1.0), ~~523 (rev. 1.0)~~, 524.3 (rev. 1.0), 524.4, 531.2 (rev. 1.0), 536 (rev. 1.0); 552.3 (rev. 1.0), 557, 1622 (99), 1622 (01), 1622 (05), 1623 (99), 1623 (01), 1623 (05), and 1623.1). Available from NTIS; USEPA, NSCEP; or USEPA, OGWDW.

“USEPA Organic Methods” means “Methods for the Determination of Organic Compounds in Drinking Water,” December 1988 (revised July 1991) (Methods 508A (rev. 1.0) and 515.1 (rev. 4.0)); “Methods for the Determination of Organic Compounds in Drinking Water— Supplement I,” July 1990 (Methods 547, 550, and 550.1); “Methods for the Determination of Organic Compounds in Drinking Water— Supplement II,” August 1992 (Methods 548.1 (rev. 1.0), 552.1 (rev. 1.0), and 555 (rev. 1.0)); and “Methods for the Determination of Organic Compounds in Drinking Water— Supplement III,” August 1995 (Methods 502.2 (rev. 2.1), 504.1 (rev. 1.1), 505 (rev. 2.1), 506 (rev. 1.1), 507 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 515.2 (rev. 1.1), 524.2 (rev. 4.1), 525.2

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(rev. 2.0), 531.1 (rev. 3.1), 551.1 (rev. 1.0), and 552.2 (rev. 1.0)).
Available from NTIS; USEPA, NSCEP; or USEPA, EMSL.

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

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

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

“USEPA Radiochemistry Procedures” 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 and USEPA, NSCEP.

“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.

~~BOARD NOTE: The USGS Methods are available in three volumes published in 1977, 1989, and 1993, as outlined in subsection (b) of this Section.~~

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

- b) The Board incorporates the following publications by reference:

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

“Method OIA-1677 DW, Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry,” EPA 821/R-04/001, January 2004 (referred to as “OI Analytical Method OIA-1677”), referenced in Section 611.611.

BOARD NOTE: Also available online for download from www.epa.gov/waterscience/methods/method/cyanide/1677-2004.pdf.

APHA. American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005 202-777-2742.

“Standard Methods for the Examination of Water and Wastewater,” 16th Edition, 1985 (referred to as “Standard Methods, 16th ed.”). See the methods listed separately for the same references under American Waterworks Association.

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

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

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

“Standard Methods for the Examination of Water and Wastewater,” 20th

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

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

"Standard Methods for the Examination of Water and Wastewater," 22nd Edition, 2012 (referred to as "Standard Methods, 22nd ed."). See the methods listed separately for the same references under American Waterworks Association.

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

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

BOARD NOTE: At the table to 40 CFR 141.402(c)(2), USEPA approved the method as described in the above literature review. The method itself is embodied in the printed instructions to the proprietary kit available from IDEXX Laboratories, Inc. (accessible on-line and available by download from www.asm.org, as "EnterolertTM Procedure"). ASTM approved the method as "Standard Test Method for Enterococci in Water Using EnterolertTM," which is available in two versions from ASTM: ASTM Method D6503-99 (superceded) and ASTM Method D6503-99. While it is more conventional to incorporate the method as presented in the kit instructions or as approved by ASTM by reference, the Board is constrained to incorporate the version that appears in the technical literature by reference, which is the version that USEPA has explicitly approved.

AWWA. American Water Works Association et al., 6666 West Quincy

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Ave., Denver, CO 80235 (303-794-7711).

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

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

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

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

Method 304, Radium in Water by Precipitation, referenced in Section 611.720.

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

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

“Standard Methods for the Examination of Water and Wastewater,” 16th Edition, 1985 (referred to as “Standard Methods, 16th ed.”).

Method 907A, Heterotrophic Plate Count, Pour Plate Method, referenced in Section 611.213.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Method 4500-ClO₂ C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.

Method 4500-ClO₂ D, Chlorine Dioxide, DPD Method, referenced in Section 611.531.

Method 4500-ClO₂ E, Chlorine Dioxide, Amperometric Method II (Proposed), referenced in Section 611.531.

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

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

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

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

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

Method 4500-NO₂⁻ B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.

Method 4500-NO₃⁻ D, Nitrogen (Nitrate), Nitrate Electrode Method, referenced in Section 611.611.

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Method 4500-NO₃⁻ E, Nitrogen (Nitrate), Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-NO₃⁻ F, Nitrogen (Nitrate), Automated Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-O₃ B, Ozone (Residual) (Proposed), Indigo Colorimetric Method, referenced in Section 611.531.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Method 9221 A, Multiple-Tube Fermentation Technique

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for Members of the Coliform Group, Introduction, referenced in Sections 611.526 and 611.531.

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

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

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

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

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

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

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

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

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

Method 9223 B, Chromogenic Substrate Coliform Test (Proposed), referenced in Section 611.1004.

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

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

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

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

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

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

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

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

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

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

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

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

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

Method 3125, Metals by Inductively Coupled Plasma/Mass Spectrometry, referenced in Section 611.720.

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

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

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

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

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

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611.531.

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

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

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

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

Method 4500-ClO₂ C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.

Method 4500-ClO₂ D, Chlorine Dioxide, DPD Method, referenced in Sections 611.381 and 611.531.

Method 4500-ClO₂ E, Chlorine Dioxide, Amperometric Method II, referenced in Sections 611.381 and 611.531.

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

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

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

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

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

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

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

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

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

Method 4500-NO₂⁻ B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.

Method 4500-NO₃⁻ D, Nitrogen (Nitrate), Nitrate Electrode Method, referenced in Section 611.611.

Method 4500-NO₃⁻ E, Nitrogen (Nitrate), Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-NO₃⁻ F, Nitrogen (Nitrate), Automated Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-O₃ B, Ozone (Residual) (Proposed), Indigo Colorimetric Method, referenced in Section 611.531.

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

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

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

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

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

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

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

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

Method 6651 B, Glyphosate Herbicide, referenced in Section 611.645.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Coliform Fermentation Technique, referenced in Sections 611.526 and 611.531.

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

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

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

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

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

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

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

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

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

Method 9223 B, Chromogenic Substrate Coliform Test (Proposed), referenced in Section 611.1004.

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

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

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

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

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

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

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

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

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

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

Method 3125, Metals by Inductively Coupled Plasma/Mass Spectrometry, referenced in Section 611.720.

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

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

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

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

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

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

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

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

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

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

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

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

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

Method 4500-ClO₂ C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.

Method 4500-ClO₂ D, Chlorine Dioxide, DPD Method, referenced in Section 611.531.

Method 4500-ClO₂ E, Chlorine Dioxide, Amperometric Method II (Proposed), referenced in Section 611.531.

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

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

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

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

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

Method 4500-NO₂⁻ B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.

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Method 4500-NO₃⁻ D, Nitrogen (Nitrate), Nitrate Electrode Method, referenced in Section 611.611.

Method 4500-NO₃⁻ E, Nitrogen (Nitrate), Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-NO₃⁻ F, Nitrogen (Nitrate), Automated Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-O₃ B, Ozone (Residual) (Proposed), Indigo Colorimetric Method, referenced in Section 611.531.

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

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

Method 4500-SiO₂ C, Silica, Molybdosilicate Method, referenced in Section 611.611.

Method 4500-SiO₂ D, Silica, Heteropoly Blue Method, referenced in Section 611.611.

Method 4500-SiO₂ E, Silica, Automated Method for Molybdate-Reactive Silica, referenced in Section 611.611.

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

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

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

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

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

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

Method 6651 B, Glyphosate Herbicide, Liquid Chromatographic Post-Column Fluorescence Method, referenced in Section 611.645.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Method 9060 A, Samples, Collection, referenced in Section 611.1052.

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

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

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

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Coliform Fermentation Technique, referenced in Sections 611.526, 611.531, and 611.1052.

Method 9221 C, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Estimation of Bacterial Density, referenced in Sections 611.526, 611.531, and 611.1052.

Method 9221 D, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Presence-Absence (P-A) Coliform Test, referenced in Sections 611.526 and 611.1052.

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

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

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

Method 9222 B, Membrane Filter Technique for Members of the Coliform Group, Standard Total Coliform Membrane Filter Procedure, referenced in Sections 611.526, 611.531, and 611.1052.

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

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

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

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

Method 9223 B, Chromogenic Substrate Coliform Test (also referred to as the variations "~~Autoanalysis~~-Colilert® Test System" and "~~Colisure™~~Colisure™ Test"), referenced in Sections 611.526, 611.802, 611.1004, and 611.1052.

Method 9230 B, Fecal Streptococcus and Enterococcus Groups, Multiple Tube Techniques, referenced in Section 611.802.

Method 9230 C, Fecal Streptococcus and Enterococcus Groups, Membrane Filter Techniques, referenced in Section 611.802.

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

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

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

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

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

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

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

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

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

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

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

Method 3125, Metals by Inductively Coupled Plasma/Mass Spectrometry, referenced in Section 611.720.

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

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

Method 4110 B, Determination of Anions by Ion Chromatography, Ion Chromatography with Chemical

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Suppression of Eluent Conductivity, referenced in Section 611.611.

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

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

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

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

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

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

Method 4500-ClO₂ C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.

Method 4500-ClO₂ E, Chlorine Dioxide, Amperometric Method II (Proposed), referenced in Section 611.381.

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

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

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

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

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

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

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

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

Method 4500-NO₂⁻ B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.

Method 4500-NO₃⁻ D, Nitrogen (Nitrate), Nitrate Electrode Method, referenced in Section 611.611.

Method 4500-NO₃⁻ E, Nitrogen (Nitrate), Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-NO₃⁻ F, Nitrogen (Nitrate), Automated Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-O₃ B, Ozone (Residual) (Proposed), Indigo Colorimetric Method, referenced in Section 611.531.

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

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

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Method 4500-SiO₂ C, Silica, Molybdosilicate Method, referenced in Section 611.611.

Method 4500-SiO₂ D, Silica, Heteropoly Blue Method, referenced in Section 611.611.

Method 4500-SiO₂ E, Silica, Automated Method for Molybdate-Reactive Silica, referenced in Section 611.611.

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

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

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

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

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

Method 6610 B, Carbamate Pesticide Method, High-Performance Liquid Chromatographic Method, referenced in Section 611.645.

Method 6640 B, Acidic Herbicide Compounds, Micro Liquid-Liquid Extraction Gas Chromatographic Method, referenced in Section 611.645.

Method 6651 B, Glyphosate Herbicide, Liquid Chromatographic Post-Column Fluorescence Method, referenced in Section 611.645.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Method 9060 A, Samples, Collection, referenced in Section 611.1052.

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

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

Method 9221 B, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Standard Total Coliform Fermentation Technique, referenced in Sections 611.526, 611.531, and 611.1052.

Method 9221 C, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Estimation of Bacterial Density, referenced in Sections 611.526, 611.531, and 611.1052.

Method 9221 D, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Presence-Absence (P-A) Coliform Test, referenced in Section 611.526 and 611.1052.

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

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

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

Method 9222 B, Membrane Filter Technique for Members of the Coliform Group, Standard Total Coliform Membrane Filter Procedure, referenced in Sections 611.526, 611.531, and 611.1052.

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

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

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

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

Method 9223 B, Chromogenic Substrate Coliform Test (also referred to as the variations "Autoanalysis-Colilert® Test-System" and "Colisure™" "Colisure™ Test," and "Colilert-18® Test"), based on the particular medium used, available from IDEXX Laboratories, Inc.), referenced in Sections 611.526, 611.802, 611.1004, and 611.1052.

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BOARD NOTE: See the Board note appended to Standard Methods Online in this Section about methods that appear in Standard Methods, 21st ed. which USEPA has cited as available from Standard Methods Online.

~~“Standard Methods for the Examination of Water and Wastewater, 22nd Edition, 2012 (referred to as “Standard Methods, 22nd ed.”). See the methods listed separately for the same references under American Waterworks Association.~~

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Method 4500-ClO₂ C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.

Method 4500-ClO₂ E, Chlorine Dioxide, Amperometric Method II (Proposed), referenced in Section 611.381.

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

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

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

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

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

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

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

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

Method 4500-NO₂⁻ B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.

Method 4500-NO₃⁻ D, Nitrogen (Nitrate), Nitrate Electrode Method, referenced in Section 611.611.

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Method 4500-NO₃⁻ E, Nitrogen (Nitrate), Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-NO₃⁻ F, Nitrogen (Nitrate), Automated Cadmium Reduction Method, referenced in Section 611.611.

Method 4500-O₃ B, Ozone (Residual) (Proposed), Indigo Colorimetric Method, referenced in Section 611.531.

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

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

Method 4500-SiO₂ C, Silica, Molybdosilicate Method, referenced in Section 611.611.

Method 4500-SiO₂ D, Silica, Heteropoly Blue Method, referenced in Section 611.611.

Method 4500-SiO₂ E, Silica, Automated Method for Molybdate-Reactive Silica, referenced in Section 611.611.

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

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

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

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

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

Method 6610 B, Carbamate Pesticide Method, High-Performance Liquid Chromatographic Method, referenced in Section 611.645.

Method 6640 B, Acidic Herbicide Compounds, Micro Liquid-Liquid Extraction Gas Chromatographic Method, referenced in Section 611.645.

Method 6651 B, Glyphosate Herbicide, Liquid Chromatographic Post-Column Fluorescence Method, referenced in Section 611.645.

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

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

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

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

Method 7500-³H₂ B, Tritium, Liquid Scintillation Spectrometric Method, referenced in Section 611.720.

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

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

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

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

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

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

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

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

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

Method 9060 A, Samples, Collection, referenced in Section 611.1052.

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

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

Method 9221 B, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Standard Total Coliform Fermentation Technique, referenced in Sections 611.526, 611.531, and 611.1052.

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

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

Method 9221 F, Multiple-Tube Fermentation Technique for Members of the Coliform Group, Escherichia Coli Procedure (Proposed), referenced in Section 611.802 and 611.1052.

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

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

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

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

Method 9223 B, Chromogenic Substrate Coliform Test (also referred to as the variations "~~Autoanalysis~~" Colilert® Test ~~System~~" and "~~Colisure~~TM" "~~Colisure~~TM Test," and "~~Colilert-18~~® Test," based on the particular medium used, available from IDEXX Laboratories, Inc.), referenced in Sections 611.526, 611.802, 611.1004, and 611.1052.

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BOARD NOTE: See the Board note appended to Standard Methods Online in this Section about methods that appear in Standard Methods, 22nd ed., which USEPA has cited as available from Standard Methods Online.

BOARD NOTE: Individual Methods from Standard Methods are available online from Standard Methods Online.

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

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

ASTM Method D511-03 A and B, ~~“Standard Test Methods for Calcium and Magnesium in Water, “Test Method A—Complexometric Titration” & “Test Method B—Atomic Absorption Spectrophotometric,” approved 2003, referenced in Section 611.611.~~

ASTM Method D511-09 A and B, ~~“Standard Test Methods for Calcium and Magnesium in Water, “Test Method A—Complexometric Titration” & “Test Method B—Atomic Absorption Spectrophotometric,” approved 2009, referenced in Section 611.611.~~

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

ASTM Method D859-94, ~~“Standard Test Method for Silica in Water,” approved 1994, referenced in Section 611.611.~~

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ASTM Method D859-00, "Standard Test Method for Silica in Water," approved 2000, referenced in Section 611.611.

ASTM Method D859-05, "Standard Test Method for Silica in Water," approved 2005, referenced in Section 611.611.

ASTM Method D859-10, "Standard Test Method for Silica in Water," approved 2010, referenced in Section 611.611.

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

ASTM Method D1067-02 B, "Standard Test Methods for Acidity or Alkalinity in Water," "Test Method B— Electrometric or Color-Change Titration," approved in 2002, referenced in Section 611.611.

ASTM Method D1067-06 B, "Standard Test Methods for Acidity or Alkalinity in Water," "Test Method B— Electrometric or Color-Change Titration," approved in 2006, referenced in Section 611.611.

ASTM Method D1067-11 B, "Standard Test Methods for Acidity or Alkalinity in Water," "Test Method B— Electrometric or Color-Change Titration," approved in 2011, referenced in Section 611.611.

ASTM Method D1125-95 (1999) 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 1995, reapproved 1999, referenced in Section 611.611.

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

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ASTM Method D1179-99 B, "Standard Test Methods for Fluoride in Water," "Test Method B— Ion Selective Electrode," approved 1999, referenced in Section 611.611.

ASTM Method D1179-04 B, "Standard Test Methods for Fluoride in Water," "Test Method B— Ion Selective Electrode," approved 2004, referenced in Section 611.611.

ASTM Method D1179-10 B, "Standard Test Methods for Fluoride in Water," "Test Method B— Ion Selective Electrode," approved 2010, referenced in Section 611.611.

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

ASTM Method D1253-96, "Standard Test Method for Residual Chlorine in Water," approved 1996, referenced in Section 611.381.

ASTM Method D1253-03, "Standard Test Method for Residual Chlorine in Water," approved 2003, referenced in Sections 611.381 and 611.531.

ASTM Method D1253-08, "Standard Test Method for Residual Chlorine in Water," approved 2008, referenced in Sections 611.381 and 611.531.

ASTM Method D1293-95 A or B, "Standard Test Methods for pH of Water," "Test Method A— Precise Laboratory Measurement" & "Test Method B— Routine or Continuous Measurement," approved 1995, referenced in Section 611.611.

ASTM Method D1293-99 A or B, "Standard Test Methods for pH of Water," "Test Method A— Precise Laboratory Measurement" & "Test Method B— Routine or Continuous Measurement," approved 1999, referenced in Section 611.611.

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ASTM Method D1293-12, "Standard Test Methods for pH of Water," approved 2012, referenced in Section 611.611.

ASTM Method D1688-95 A or C, "Standard Test Methods for Copper in Water," "Test Method A—Atomic Absorption, Direct" & "Test Method C—Atomic Absorption, Graphite Furnace," approved 1995, referenced in Section 611.611.

ASTM Method D1688-02 A or C, "Standard Test Methods for Copper in Water," "Test Method A—Atomic Absorption, Direct" & "Test Method C—Atomic Absorption, Graphite Furnace," approved 2002, referenced in Section 611.611.

ASTM Method D1688-07 A or C, "Standard Test Methods for Copper in Water," "Test Method A—Atomic Absorption, Direct" & "Test Method C—Atomic Absorption, Graphite Furnace," approved 2007, referenced in Section 611.611.

ASTM Method D2036-98 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 1998, referenced in Section 611.611.

ASTM Method D2036-06 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 2006, referenced in Section 611.611.

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

ASTM Method D2460-97, "Standard Test Method for Radionuclides of Radium in Water," approved 1997, referenced in Section 611.720.

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ASTM Method D2460-07, "Standard Test Method for Radionuclides of Radium in Water," approved 2007, referenced in Section 611.720.

ASTM Method D2907-97, "Standard Test Methods for Microquantities of Uranium in Water by Fluorometry," approved ~~1997~~,1997, referenced in Section 611.720.

ASTM Method D2972-97 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 1997, referenced in Section 611.611.

ASTM Method D2972-03 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 2003, referenced in Section 611.611.

ASTM Method D2972-08 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 2008, referenced in Section 611.611.

ASTM Method D3223-97, "Standard Test Method for Total Mercury in Water," approved 1997, referenced in Section 611.611.

ASTM Method D3223-02, "Standard Test Method for Total Mercury in Water," approved 2002, referenced in Section 611.611.

ASTM Method D3223-12, "Standard Test Method for Total Mercury in Water," approved 2012, referenced in Section 611.611.

ASTM Method D3454-97, "Standard Test Method for Radium-226 in Water," approved 1997, referenced in Section

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ASTM Method D3454-05, "Standard Test Method for Radium-226 in Water," approved 2005, referenced in Section 611.720.

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

ASTM Method D3559-03 D, "Standard Test Methods for Lead in Water," Test Method D— Atomic Absorption, Graphite Furnace, approved 2003, referenced in Section 611.611.

ASTM Method D3559-08 D, "Standard Test Methods for Lead in Water," Test Method D— Atomic Absorption, Graphite Furnace, approved 2008, referenced in Section 611.611.

ASTM Method D3645-97 B, "Standard Test Methods for Beryllium in Water," Method B— Atomic Absorption, Graphite Furnace, approved 1997, referenced in Section 611.611.

ASTM Method D3645-03 B, "Standard Test Methods for Beryllium in Water," Method B— Atomic Absorption, Graphite Furnace, approved 2003, referenced in Section 611.611.

ASTM Method D3645-08 B, "Standard Test Methods for Beryllium in Water," Method B— Atomic Absorption, Graphite Furnace, approved 2008, referenced in Section 611.611.

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

ASTM Method D3649-98a, "Standard Test Method for High-Resolution Gamma-Ray Spectrometry of Water," approved 1998, referenced in Section 611.720.

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ASTM Method D3649-06, "Standard Test Method for High-Resolution Gamma-Ray Spectrometry of Water," approved 2006, referenced in Section 611.720.

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

ASTM Method D3697-02, "Standard Test Method for Antimony in Water," approved 2002, referenced in Section 611.611.

ASTM Method D3697-07, "Standard Test Method for Antimony in Water," approved 2007, referenced in Section 611.611.

ASTM Method D3859-98 A and B, "Standard Test Methods for Selenium in Water," "Method A—Atomic Absorption, Hydride Method" & "Method B—Atomic Absorption, Graphite Furnace," approved 1998, referenced in Section 611.611.

ASTM Method D3859-03 A and B, "Standard Test Methods for Selenium in Water," "Method A—Atomic Absorption, Hydride Method" & "Method B—Atomic Absorption, Graphite Furnace," approved 2003, referenced in Section 611.611.

ASTM Method D3859-08 A and B, "Standard Test Methods for Selenium in Water," "Method A—Atomic Absorption, Hydride Method" & "Method B—Atomic Absorption, Graphite Furnace," approved 2008, referenced in Section 611.611.

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

ASTM Method D3972-97, "Standard Test Method for Isotopic Uranium in Water by Radiochemistry," approved 1997, referenced in Section 611.720.

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ASTM Method D3972-02, “Standard Test Method for Isotopic Uranium in Water by Radiochemistry,²²” approved 2002, referenced in Section 611.720.

ASTM Method D3972-09, “Standard Test Method for Isotopic Uranium in Water by Radiochemistry,²²” approved 2009, referenced in Section 611.720.

ASTM Method D4107-91, “Standard Test Method for Tritium in Drinking Water,²²” approved 1991, referenced in Section 611.720.

ASTM Method D4107-98, “Standard Test Method for Tritium in Drinking Water,²²” approved 1998, referenced in Section 611.720.

ASTM Method D4107-08, “Standard Test Method for Tritium in Drinking Water,²²” approved 2008, referenced in Section 611.720.

ASTM Method D4327-97, “Standard Test Method for Anions in Water by Ion Chromatography,²²” approved 1997, referenced in Section 611.611.

ASTM Method D4327-03, “Standard Test Method for Anions in Water by Ion Chromatography,²²” approved 2003, referenced in Section 611.611.

ASTM Method D4327-11, “Standard Test Method for Anions in Water by Ion Chromatography,²²” approved 2011, referenced in Section 611.611.

ASTM Method D4785-93, “Standard Test Method for Low-Level Iodine-131 in Water,²²” approved 1993, referenced in Section 611.720.

ASTM Method D4785-98, “Standard Test Method for Low-Level Iodine-131 in Water,²²” approved 1998, referenced in Section 611.720.

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ASTM Method D4785-08, "Standard Test Method for Low-Level Iodine-131 in Water," approved 2008, referenced in Section 611.720.

ASTM Method D5174-97, "Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry," approved 1997, referenced in Section 611.720.

ASTM Method D5174-02, "Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry," approved 2002, referenced in Section 611.720.

ASTM Method D5174-07, "Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry," approved 2007, referenced in Section 611.720.

ASTM Method D5317-93, "Standard Test Method for Determination of Chlorinated Organic Acid Compounds in Water by Gas Chromatography with an Electron Capture Detector," approved 1993, referenced in Section 611.645.

ASTM Method D5317-98 (2003), "Standard Test Method for Determination of Chlorinated Organic Acid Compounds in Water by Gas Chromatography with an Electron Capture Detector," approved 1998 (reapproved 2003), referenced in Section 611.645.

ASTM Method D5673-03, "Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry," approved 2003, referenced in Section 611.720.

ASTM Method D5673-05, "Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry," approved 2005, referenced in Section 611.720.

ASTM Method D5673-10, "Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry," approved 2010, referenced in Section 611.720.

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ASTM Method D6239-09, "Standard Test Method for Uranium in Drinking Water by High-Resolution Alpha-Liquid-Scintillation Spectrometry," approved 2009, referenced in Section 611.720.

ASTM Method D6508-00(2005), "Standard Test Method for Determination of Dissolved Inorganic Anions in Aqueous Matrices Using Capillary Ion Electrophoresis and Chromate Electrolyte," approved 2000 (revised 2005), referenced in Section 611.611.

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

ASTM Method D6581-08 A and B, "Standard Test Method for Bromate, Bromide, Chlorate, and Chlorite in Drinking Water by Suppressed Ion Chromatography," "Test Method A— Chemically Suppressed Ion Chromatography" & "Test Method B— Electrolytically Suppressed Ion Chromatography," approved 2008, referenced in Section 611.381.

ASTM Method D6919-03, "Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography," approved 2003, referenced in Section 611.611.

ASTM Method D6919-09, "Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography," approved 2009, referenced in Section 611.611.

ASTM Method D6888-04, "Standard Test Method for Available Cyanide with Ligand Displacement and Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection," approved 2004, referenced in Section 611.611.

BOARD NOTE: The most recent version of ASTM methods are available for paid download from the ASTM at www.astm.org. Note that the most

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recent version of an ASTM method may not be the version approved for use by USEPA and incorporated by reference in subsection (b) of this Section.

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

“Fluoride in Water and Wastewater,” Industrial Method #129-71W, December 1972 (referred to as “Technicon Methods, Method #129-71W”). See 40 CFR 141.23(k)(1), footnote 11 (2012)(2014), referenced in Section 611.611.

“Fluoride in Water and Wastewater,” #380-75WE, February 1976 (referred to as “Technicon Methods, Method #380-75WE”). See 40 CFR 141.23(k)(1), footnote 11 (2012)(2014), referenced in Section 611.611.

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

“Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Drinking Water,” January 9, 1998 (referred to as “E*Colite Test”), referenced in Section 611.802 and 611.1052 (also available from USEPA, Water Resource Center).

“Fast Phage Test Procedure. Presence/Absence for Coliphage in Ground Water with Same Day Positive Prediction,” version 009 (Nov. 2012) (referred to as “Charm Fast Phage Test”), referenced in Section 611.802.

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

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

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"Modified Colitag™ Test Method for Simultaneous Detection of E. coli and other Total Coliforms in Water (ATP D05-0035)," August 2009 (referred to as "Modified Colitag™ Method Test"), referenced in Sections 611.526 and 611.802. See also NEMI.

EMD Millipore (division of Merck KGaA, Darmstadt, Germany), 290 Concord Road, Billerica, MA 01821 (800-645-5476 or 781-533-6000).

"Chromocult® Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters," November 2000 (referred to as "Chromocult® Method, Version 1.0"), referenced in Sections 611.526, 611.802, and 611.1052.

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

"Readycult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Finished Waters," Version 1.1, January 2007 (referred to as "Readycult® 2007"), referenced in Section 611.802 and 611.1052.

Georgia Tech Research Institute, Robert Rosson, 925 Dalney Road, Atlanta, GA 30332 (404-407-6339).

"The Determination of Radium-226 and Radium-228 in Drinking Water by Gamma-ray Spectrometry Using HPGE or Ge(Li) Detectors," Revision 1.2, December 2004 (called "Georgia Radium Method"), referenced in Section 611.720.

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

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

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H&E Testing Laboratory, 221 State Street, Augusta, ME 04333
(207-287-2727).

Method ME355.01, Revision 1, "Determination of Cyanide in Drinking Water by GC/MS Headspace Analysis," May 2009, referenced in Section 611.611. See also NEMI.

The Hach Company, P.O. Box 389, Loveland, CO 80539-0389
(800-227-4224/Internet address: www.hach.com).

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

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

"Total Coliforms and E. coli Membrane Filtration Method with m-ColiBlue24® Broth," Method No. 10029, Revision 2, August 17, 1999 (referred to as "m-ColiBlue24 Test"), referenced in Sections 611.802 and 611.1052 (also available from USEPA, Water Resource Center).

"Fluoride, USEPA SPADNS 2 Method 10225," revision 2.0, January 2011 (referred to as "Hach SPADNS 2 Method 10225"), referenced in Section 611.611.

"Hach Company TNTplus 835/836 Nitrate Method 10206— — Spectrophotometric Measurement of Nitrate in Water and Wastewater," revision 2.0, January 2011 (referred to as "Hach TNTplus 835/836 Method 10206"), referenced in Section 611.611.

"Hach Method 10260— — Determination of Chlorinated Oxidants (Free and Total) in Water Using Disposable Planar Reagent-filled Cuvettes and Mesofluic Channel Colorimetry," April 2013

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(referred to as "Hach Method 10260"), referenced in Sections 611.381 and 611.531.

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

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

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

Industrial Test Systems, Inc., 1875 Langston St., Rock Hill, SC 29730.

Method D99-003, Revision 3.0, Free Chlorine Species (HOCl⁻ and OCl⁻) by Test Strip, November 21, 2003 (referred to as "ITS Method D99-003"), referenced in Section 611.381.

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

Digestion and distillation of total cyanide in drinking and wastewaters using MICRO DIST and determination of cyanide by flow injection analysis, Revision 2.1, November 30, 2000 (referred to as "QuikChem Method 10-204-00-1-X"), referenced in Section 611.611.

Leck Mitchell, PhD, PE, 656 Independence Valley Dr., Grand Junction, CO 81507. See also NEMI.

Mitchell Method M5271, Determination of Turbidity by Laser Nephelometry, March 2009, referenced in Section 611.531.

Mitchell Method M5331, Determination of Turbidity by LED Nephelometry, March 2009, referenced in Section 611.531.

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

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

NEMI. National Environmental Method Index (on-line at www.nemi.gov).

AMI Turbiwell Method, "Continuous Measurement of Turbidity Using a SWAN AMI Turbiwell Turbidimeter," August 2009. See also SWAN Analytische Instrumente AG.

Method ME355.01, Revision 1, "Determination of Cyanide in Drinking Water by GC/MS Headspace Analysis," May 2009, referenced in Section 611.611. See also H&E Testing Laboratory.

Mitchell Method M5271, "Determination of Turbidity by Laser Nephelometry," March 2009, referenced in Section 611.531. See also Leck Mitchell, PhD, PE.

Mitchell Method M5331, "Determination of Turbidity by LED Nephelometry," March 2009, referenced in Section 611.531. See also Leck Mitchell, PhD, PE

Modified Colitag™ Method, "Modified Colitag™ Test Method for Simultaneous Detection of E. coli and other Total Coliforms in Water (ATP D05-0035)," August 2009, referenced in Sections 611.526 and 611.802. See also CPI International, Inc.

Orion Method AQ4500, "Determination of Turbidity by LED Nephelometry," May 2009, referenced in Section 611.531. See also Thermo Scientific.

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Palintest ChloroSense, "Measurement of Free and Total Chlorine in Drinking Water by Palintest ChloroSense," September 2009 (referred to as "Palintest ChloroSense"), referenced in Sections 611.381 and 611.531. See also Palintest.

"Systea Easy (1-Reagent) Nitrate Method," February 2009, referenced in Section 611.611. See also Systea Scientific, LLC.

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

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

NTIS. National Technical Information Service, U.S. Department of Commerce, 5301 Shawnee Road, Alexandria, VA 22312 (703-605-6000 or 800-553-6847, www.ntis.gov).

Dioxin and Furan Method 1613, Revision B, "Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS," October 1994, Revision B, EPA 821/B-94/005, Doc. No. 94-104774, referenced in Section 611.645. See also USEPA, NSCEP.

Kelada 01, "Kelada Automated Test Methods for Total Cyanide, Acid Dissociable Cyanide, and Thiocyanate," Revision 1.2, August 2001, EPA 821/B-01-009, referenced in Section 611.611.

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

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

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USEPA Asbestos Method 100.1, "Analytical Method for Determination of Asbestos Fibers in Water," EPA 600/4-83-043, September 1983, Doc. No. PB83-260471, referenced in Section 611.611. See also USEPA, NSCEP.

USEPA Asbestos Method 100.2, "Determination of Asbestos Structures over 10-mm in Length in Drinking Water," EPA 600/R-94-134, June 1994, Doc. No. PB94-201902, referenced in Section 611.611. See also USEPA, NSCEP.

USEPA Environmental Inorganic Methods, "Methods for the Determination of Inorganic Substances in Environmental Samples," August 1993, EPA 600/R-93-100, Doc. No. PB94-121811, referenced in Sections 611.381, 611.531, and 611.611. (Methods 180.1 (rev. 2.0), 300.0 (rev. 2.1), 335.4 (rev. 1.0), 353.2 (rev. 2.0), and 365.1 (rev. 2.0) only.) See also USEPA, NSCEP.

USEPA Environmental Metals Methods, "Methods for the Determination of Metals in Environmental Samples— Supplement I," May 1994, EPA 600/R-94-111, Doc. No. PB95-125472, referenced in Sections 611.611, 611.612, and 611.720. (Methods 200.7 (rev. 4.4), 200.8 (rev. 5.3), 200.9 (rev. 2.2), and 245.1 (rev. 3.0) only.) See also USEPA, NSCEP.

USEPA Inorganic Methods, "Methods for Chemical Analysis of Water and Wastes," March 1983, EPA 600/4-79-020, Doc. No. PB84-128677, referenced in Section 611.611. (Methods 150.1, 150.2, and 245.2 only.) See also USEPA, NSCEP.

USEPA Interim Radiochemical Methods, "Interim Radiochemical Methodology for Drinking Water," EPA 600/4-75-008 (revised), Doc. No. PB253258, March 1976, referenced in Section 611.720.

USEPA OGWDW Methods, Method 326.0, Revision 1.0, "Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography Incorporating the

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Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis, ²² June 2002, EPA 815/R-03/007, Doc. No. PB2003-107402, referenced in Sections 611.381 and 611.382. See also USEPA, NSCEP and USEPA, OGWDW.

USEPA Organic and Inorganic Methods, ⁴⁴Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1, ²² August 2000, EPA 815/R-00/014, Doc. No. PB2000-106981, referenced in Section 611.381. (For methods 300.1 (rev. 1.0), 321.8 (rev. 1.0), and 515.3 (rev. 1.0).) See also USEPA, NSCEP.

USEPA Organic Methods, ⁴⁴Methods for the Determination of Organic Compounds in Drinking Water, ²² December 1988 (revised July 1991), EPA 600/4-88/039, Doc. No. PB91-231480, referenced in Sections 611.645 and 611.648 (Methods 508A (rev. 1.0) and 515.1 (rev. 4.0) only); ⁴⁴Methods for the Determination of Organic Compounds in Drinking Water——Supplement I, ²² July 1990, EPA 600/4-90/020, Doc. No. PB91-146027, referenced in Section 611.645 (Methods 547, 550, and 550.1 only); ⁴⁴Methods for the Determination of Organic Compounds in Drinking Water——Supplement II, ²² August 1992, EPA 600/R-92/129, Doc. No. PB92-207703, referenced in Sections 611.381 and 611.645. (Methods 548.1 (rev. 1.0), 552.1 (rev. 1.0), and 555 (rev. 1.0) only); and ⁴⁴Methods for the Determination of Organic Compounds in Drinking Water——Supplement III, ²² August 1995, EPA 600/R-95/131, Doc. No. PB95-261616, referenced in Sections 611.381, 611.645, and 611.648 (Methods 502.2 (rev. 2.1), 504.1 (rev. 1.1), 505 (rev. 2.1), 506 (rev. 1.1), 507 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 515.2 (rev. 1.1), 524.2 (rev. 4.1), 525.2 (rev. 2.0), 531.1 (rev. 3.1), 551.1 (rev. 1.0), and 552.2 (rev. 1.0) only.) See also USEPA, EMSL and USEPA, NSCEP.

USEPA Radioactivity Methods, ⁴⁴Prescribed Procedures for Measurement of Radioactivity in Drinking Water, ²² EPA 600/4-80/032, August 1980, Doc. No. PB80-224744, referenced in Section 611.720 (Methods 900.0, 901.0, 901.1, 902.0, 903.0,

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903.1, 904.0, 905.0, 906.0, 908.0, 908.1). See also USEPA, NSCEP.

USEPA Radiochemical Analyses, "Radiochemical Analytical Procedures for Analysis of Environmental Samples," March 1979, Doc. No. EMSL LV 053917, referenced in Section 611.720. (Pages 1-5, 19-32, 33-48, 65-73, 87-91, and 92-95 only.)

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

USEPA Technical Notes, "Technical Notes on Drinking Water Methods," EPA 600/R-94/173, October 1994, Doc. No. PB95-104766, referenced in Sections 611.531, 611.611, and 611.645. See also USEPA, NSCEP.

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) ~~(2012)~~(2014): "This document contains other analytical test procedures and approved analytical methods that remain available for compliance monitoring until July 1, 1996." Also available online at <http://nepis.epa.gov/EPA/html/Pubs/pubtitleORD.htm> under the document designation "600R94173."

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

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

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

"Determination of Ra-226 and Ra-228 (Ra-02)," January 1980,

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Revised June 1982 (referred to as "New York Radium Method"),
referenced in Section 611.720.

Palintest, Ltd., ~~21 Kenton Lands Road, P.O. Box 18395~~, 1455 Jamike
Avenue, Suite 100, Erlanger, KY (800-835-9629).

ChlordioX Plus Test, "Chlorine Dioxide and Chlorite in Drinking
Water by Amperometry using Disposable Sensors," November
2013, referenced in Sections 611.381 and 611.531.

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

Palintest ChloroSense, "Measurement of Free and Total Chlorine
in Drinking Water by Palintest ChloroSense," September 2009
(referred to as "Palintest ChloroSense"), referenced in Sections
611.381 and 611.531. See also NEMI.

Standard Methods Online, available online from the Standard Methods
Organization at www.standardmethods.org.

Method 3113 B-04, Metals by Electrothermal Atomic Absorption
Spectrometry, Electrothermal Atomic Absorption Spectrometric
Method, referenced in Sections 611.611 and 611.612.

Method 9230 B-04, Fecal Streptococcus and Enterococcus Groups,
Multiple Tube Techniques, referenced in Section 611.802.

BOARD NOTE: Where, in appendix A to subpart C of 40 CFR
141-~~(2012)~~ (2014), USEPA has authorized use of an approved
alternative method from Standard Methods Online, and that
version of the method appears also in Standard Methods, 21st or
22nd ed., the Board cites only to Standard Methods, 21st or 22nd ed.
for that method. The methods that USEPA listed as available from
Standard Methods Online, and which are listed above as in
Standard Methods, 21st or 22nd edition, are the following: 2320
B-97 (for alkalinity), 3112 B-09 (for mercury), 3114 B-09 (for

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arsenic and selenium), 4500-P E-99 and 4500-P F-99; (for orthophosphate); 4500-SO₄⁻² C-97, 4500-SO₄⁻² D-97, 4500-SO₄⁻² E-97, and 4500-SO₄⁻² F-97 (for sulfate); 6640 B-01 (for 2,4-D, 2,4,5-TP (silvex), (dalapon, dinoseb, pentachlorophenol, and picloram); 5561 B-00 (for glyphosate); and 9223 B-97 (for E. coli). Since each method is the same version from both sources, the Board views a copy from Standard Methods Online as equivalent to a copy from Standard Methods Online, even though the Board does not also cite to Standard Methods Online. The Board intends that use of the version of the method that is incorporated by reference is acceptable from either source.

SWAN Analytische Instrumente AG, Studbachstrasse 13, CH-8340, Hinwil, Switzerland.

AMI Turbiwell Method, "Continuous Measurement of Turbidity Using a SWAN AMI Turbiwell Turbidimeter," August 2009, referenced in Section 611.531. See also NEMI.

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

"Atrazine in Drinking Water by Immunoassay," February 2001 (referred to as "Syngenta AG-625"), referenced in Section 611.645.

Systea Scientific LLC, 900 Jorie Blvd., Suite 35, Oak Brook, IL 60523.

Systea Easy (1-Reagent), "Systea Easy (1-Reagent) Nitrate Method," February 2009, referenced in Section 611.611. See also NEMI.

Thermo Scientific, 166 Cummings Center, Beverly, MA 01915 (800-225-1480 or www.thermo.com).

Orion Method AQ4500, "Determination of Turbidity by LED Nephelometry," May 2009, referenced in Section 611.531. See also NEMI.

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

USDHS, STD. United States Department of Homeland Security, Science and Technology Directorate (formerly United States Department of Energy, Environmental Measurements Laboratory), currently available on-line in the 28th edition only, at www.nbl.doe.gov/EML_Legacy/Website/procman.htm.

"EML Procedures Manual," HASL 300, 27th Edition, Volume 1, 1990 (referred to as "EML Procedures Manual (27th ed.)"), referenced in Section 611.720.

"EML Procedures Manual," HASL 300, 28th ed., 1997 (referred to as "EML Procedures Manual (28th ed.)"), referenced in Section 611.720.

BOARD NOTE: Although only the 28th edition is currently available, USEPA has approved use of the methods from the 27th edition also. The Board has retained the reference to the 27th edition for the benefit of any laboratory that may be using that edition.

USEPA, EMSL. United States Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, OH 45268 (513-569-7586).

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

USEPA Organic Methods, "Methods for the Determination of Organic Compounds in Drinking Water," December 1988 (revised July 1991), EPA 600/4-88/039, referenced in Sections 611.645 and 611.648 (Methods 508A (rev. 1.0) and 515.1 (rev. 4.0) only); "Methods for the Determination of Organic Compounds in Drinking Water—Supplement I," July 1990, EPA

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600/4-90/020, referenced in Sections 611.645 and 611.648 (Methods 547, 550, and 550.1 only); "Methods for the Determination of Organic Compounds in Drinking Water—II, Supplement II," August 1992, EPA 600/R-92/129, referenced in Sections 611.381 and 611.645 (Methods 548.1 (rev. 1.0), 552.1 (rev. 1.0), and 555 (rev. 1.0) only); "Methods for the Determination of Organic Compounds in Drinking Water—III, Supplement III," August 1995, EPA 600/R-95/131, referenced in Sections 611.381, 611.645, and 611.648 (Methods 502.2 (rev. 2.1), 504.1 (rev. 1.1), 505 (rev. 2.1), 506 (rev. 1.1), 507 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 515.2 (rev. 4.1), 524.2 (rev. 4.1), 525.2 (rev. 2.0), 551.1 (rev. 1.0), and 552.2 (rev. 1.0) only). See also NTIS and USEPA, NSCEP.

"Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions," EPA-R4-73-014, May 1973, referenced in Section 611.720. See also NTIS.

USEPA, NSCEP. United States Environmental Protection Agency, National Service Center for Environmental Publications, P.O. Box 42419, Cincinnati, OH 45242-0419 (accessible on-line and available by download from <http://www.epa.gov/nscep/>).

Dioxin and Furan Method 1613, Revision B, "Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS," October 1994, EPA 821/B-94/005, referenced in Section 611.645. See also NTIS.

Guidance Manual for Filtration and Disinfection, "Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources," March 1991, EPA 570/3-91-001, referenced in Section 611.111.

USEPA Asbestos Method 100.1, "Analytical Method for Determination of Asbestos Fibers in Water," September 1983, EPA 600/4-83-043, referenced in Section 611.611. See also NTIS.

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USEPA Asbestos Method 100.2, "Determination of Asbestos Structures over 10-mm in Length in Drinking Water," June 1994, EPA 600/R-94-134, referenced in Section 611.611. See also NTIS.

USEPA Environmental Inorganic Methods, "Methods for the Determination of Inorganic Substances in Environmental Samples," August 1993, EPA 600/R-93-100, referenced in Sections 611.381, 611.531, and 611.611. (Methods 180.1 (rev. 2.0), 300.0 (rev. 2.1), 335.4 (rev. 1.0), 353.2 (rev. 2.0), and 365.1 (rev. 2.0) only.) See also NTIS.

USEPA Environmental Metals Methods, "Methods for the Determination of Metals in Environmental Samples—Supplement I," May 1994, EPA 600/R-94-111, referenced in Sections 611.611, 611.612, and 611.720. (Methods 200.7 (rev. 4.4), 200.8 (rev. 5.3), 200.9 (rev. 2.2), and 245.1 (rev. 3.0) only.) See also NTIS.

USEPA Inorganic Methods, "Methods for Chemical Analysis of Water and Wastes," March 1983, EPA 600/4-79-020, referenced in Section 611.611. (Methods 150.1, 150.2, and 245.2 only.) See also NTIS.

USEPA OGWDW Methods, Method 302.0, "Determination of Bromate in Drinking Water Using Two-Dimensional Ion Chromatography with Suppressed Conductivity Detection," September 2009, EPA 815/B-09/014, referenced in Sections 611.381 and 611.382. See also USEPA, OGWDW.

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

USEPA OGWDW Methods, Method 326.0, rev. 1.0, "Determination of Inorganic Oxyhalide Disinfection By-Products

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in Drinking Water Using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis," June 2002, EPA 815/R-03/007, referenced in Sections 611.381 and 611.382. See also NTIS and USEPA, OGWDW.

USEPA OGWDW Methods, Method 327.0, rev. 1.1, "Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry," May 2005, EPA 815/R-05/008, referenced in Sections 611.381 and 611.531. See also USEPA, OGWDW.

USEPA OGWDW Methods, Method 334.0, "Determination of Residual in Drinking Water Using an On-line Chlorine Analyzer," August 2009, EPA 815/B-09/013, referenced in Section 611.531. See also USEPA, OGWDW.

USEPA OGWDW Methods, Method 523, ver. 1.0, "Determination of Triazine Pesticides and Other Degradates in Drinking Water by Gas Chromatography/Mass Spectrometry (GC/MS)," February 2011, EPA 815/R-11/002, referenced in Section 611.645. See also USEPA, OGWDW.

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

USEPA OGWDW Methods, Method 536, ver. 1.0, "Determination of Triazine Pesticides and Other Degradates in Drinking Water by Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry (LC/ESI-MS/MS)," October 2007, EPA 815/R-07/002, referenced in Section 611.645.

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USEPA OGWDW Methods, Method 552.3, rev. 1.0, "Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Microextraction, Derivatization, and Gas Chromatography with Electron Capture Detection," July 2003, EPA 815/B-03/002, referenced in Sections 611.381 and 611.645.

USEPA OGWDW Methods, Method 557, "Determination of Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry," July 2003, EPA 815/B-03/002, referenced in Sections 611.381, 611.382, and 611.645. See also USEPA, OGWDW.

USEPA OGWDW Methods, Method 1622 (01), "Cryptosporidium in Water by Filtration/IMS/FA," April 2001, EPA 821/R-01/026, referenced in Section 611.1007. See also USEPA, OGWDW.

USEPA Organic and Inorganic Methods, "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1," August 2000, EPA 815/R-00/014, referenced in Section 611.381. (Methods 300.1 (rev. 1.0), 321.8 (rev. 1.0), and 515.3 (rev. 1.0) only.) See also NTIS.

USEPA Organic Methods, "Methods for the Determination of Organic Compounds in Drinking Water," December 1988, revised July 1991, EPA 600/4-88/039, referenced in Sections 611.645 and 611.648 (Methods 508A (rev. 1.0) and 515.1 (rev. 4.0) only); "Methods for the Determination of Organic Compounds in Drinking Water—" Supplement I," July 1990, EPA 600/4-90/020, referenced in Section 611.645 and 611.648 (Methods 547, 550, and 550.1 only); "Methods for the Determination of Organic Compounds in Drinking Water—" Supplement II," August 1992, EPA 600/R-92/129, referenced in Sections 611.381 and 611.645 (Methods 548.1 (rev. 1.0), 552.1 (rev. 1.0), and 555 (rev. 1.0) only); "Methods for the Determination of Organic Compounds in Drinking Water—" Supplement III," August 1995, EPA 600/R-95/131, referenced in

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Sections 611.381, 611.645, and 611.648 (Methods 502.2 (rev. 2.1), 504.1 (rev. 1.1), 505 (rev. 2.1), 506 (rev. 1.1), 507 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 515.2 (rev. 4.1), 524.2 (rev. 4.1), 525.2 (rev. 2.0), 531.1 (rev. 3.1), 551.1 (rev. 1.0), and 552.2 (rev. 1.0) only). See also NTIS and USEPA, EMSL.

USEPA Radioactivity Methods, "Prescribed Procedures for Measurement of Radioactivity in Drinking Water," August 1980, EPA 600/4-80/032, referenced in Section 611.720. (For methods 900.0, 901, 901.1, 902, 903, 903.1, 904, 905, 906, 908, 908.1 only.) See also NTIS.

USEPA Technical Notes, "Technical Notes on Drinking Water Methods," October 1994, EPA 600/R-94/173, referenced in Sections 611.531, 611.611, and 611.645. See also NTIS.

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) ~~(2012)~~(2014): "This document contains other analytical test procedures and approved analytical methods that remain available for compliance monitoring until July 1, 1996." Also available online at <http://nepis.epa.gov/EPA/html/Pubs/pubtitleORD.htm> under the document designation "600R94173."

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

USEPA OGWDW Methods, Method 302.0, "Determination of Bromate in Drinking Water Using Two-Dimensional Ion Chromatography with Suppressed Conductivity Detection," September 2009, EPA 815/B-09/014, referenced in Section 611.381. See also USEPA, NSCEP.

USEPA OGWDW Methods, Method 317.0, rev. 2.0, "Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis," USEPA, July

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2001, EPA 815/B-01/001, referenced in Section 611.381. See also USEPA, NSCEP.

USEPA OGWDW Methods, Method 326.0, rev. 1.0, "Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis," USEPA, June 2002, EPA 815/R-03/007, referenced in Section 611.381. See also NTIS and USEPA, NSCEP.

USEPA OGWDW Methods, Method 327.0, rev. 1.1, "Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry," USEPA, May 2005, EPA 815/R-05/008, referenced in Sections 611.381 and 611.531. See also USEPA, NSCEP.

USEPA OGWDW Methods, Method 334.0, "Determination of Residual in Drinking Water Using an On-line Chlorine Analyzer," USEPA, August 2009, EPA 815/B-09/013, referenced in Section 611.531. See also USEPA, NSCEP.

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

USEPA OGWDW Methods, Method 523, ver. 1.0, "Determination of Triazine Pesticides and Other Degradates in Drinking Water by Gas Chromatography/Mass Spectrometry (GC/MS)," February 2011, EPA 815/R-11/002, referenced in Section 611.645. See also USEPA, NSCEP.

USEPA OGWDW Methods, Method 524.3, rev. 1.0, "Measurement of Purgeable Organic Compounds in Water by

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Capillary Column Gas Chromatography/Mass Spectrometry,^{22"}
June 2009, EPA 815/B-09/009, referenced in Sections 611.381 and
611.645.

USEPA OGWDW Methods, Method 524.4, ^{44"}Measurement of
Purgeable Organic Compounds in Water by Gas
Chromatography/Mass Spectrometry Using Nitrogen Purge Gas,^{22"}
May 2013, EPA 815/R-13/002, referenced in Sections 611.381 and
611.645.

USEPA OGWDW Methods, Method 531.2, rev. 1.0,
^{44"}Measurement of N-methylcarbamoyloximes and
N-methylcarbamates in Water by Direct Aqueous Injection HPLC
with Postcolumn Derivatization,^{22"} September 2001, EPA
815/B-01/002 (document file name ^{44"}met531_2.pdf^{22"}), referenced
in Section 611.645. See also USEPA, NSCEP.

USEPA OGWDW Methods, Method 536, ver. 1.0,
^{44"}Determination of Triazine Pesticides and Other Degradates in
Drinking Water by Liquid Chromatography Electrospray Ionization
Tandem Mass Spectrometry (LC/ESI-MS/MS),^{22"} October 2007,
EPA 815/R-07/002, referenced in Section 611.645.

USEPA OGWDW Methods, Method 552.3, rev. 1.0,
^{44"}Determination of Haloacetic Acids and Dalapon in Drinking
Water by Liquid-liquid Microextraction, Derivatization, and Gas
Chromatography with Electron Capture Detection,^{22"} USEPA, July
2003, EPA 815/B-03/002, referenced in Sections 611.381 and
611.645.

USEPA OGWDW Methods, Method 557, ^{44"}Determination of
Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion
Chromatography Electrospray Ionization Tandem Mass
Spectrometry,^{22"} July 2003, EPA 815/B-03/002, referenced in
Sections 611.381 and 611.645. See also USEPA, NSCEP.

USEPA OGWDW Methods, Method 1622 (05), ^{44"}Method 1622:
Cryptosporidium in Water by Filtration/IMS/FA,^{22"} December

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2005, EPA 815/R-05/001, referenced in Sections 611.1004 and 611.1007.

USEPA OGWDW Methods, Method 1622 (01), ~~““”~~Method 1622: Cryptosporidium in Water by Filtration/IMS/FA,~~””~~ April 2001, EPA 821/R-01/026, referenced in Section 611.1007. See also USEPA, NSCEP.

USEPA OGWDW Methods, Method 1622 (99), ~~““”~~Method 1622: Cryptosporidium in Water by Filtration/IMS/FA,~~””~~ April 1999, EPA 821/R-99/001, referenced in Section 611.1007.

USEPA OGWDW Methods, Method 1623 (05), ~~““”~~Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,~~””~~ December 2005, EPA 815/R-05/002, referenced in Sections 611.1004 and 611.1007.

USEPA OGWDW Methods, Method 1623 (01), ~~““”~~Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,~~””~~ April 2001, EPA 821/R-01/025, referenced in Section 611.1007.

USEPA OGWDW Methods, Method 1623 (99), ~~““”~~Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,~~””~~ January 1999, EPA 821/R-99/006, referenced in Section 611.1007.

USEPA OGWDW Methods, Method 1623.1, ~~““”~~Method 1623.1: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,~~””~~ January 2012, EPA 816/R-12/001, referenced in Section 611.1004.

BOARD NOTE: Many of the above-listed documents available from the USEPA, Office of Ground Water and Drinking Water are also listed as available from NTIS.

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

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USEPA NERL Method 200.5, rev. 4.2, "Determination of Trace Elements in Drinking Water by Axially Viewed Inductively Coupled Plasma- Atomic Emission Spectrometry," October 2003, EPA 600/R-06/115, referenced in Sections 611.611 and 611.612.

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

USEPA NERL Method 415.3, rev. 1.2, "Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water," September 2009, EPA 600/R-09/122, referenced in Section 611.381.

USEPA NERL Method 525.3, ver. 1.0, "Method 525.3, Version 1.0, Determination of Total Semivolatile Organic Chemicals in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS)," February 2012, EPA 600/R-12/010, referenced in Section 611.645.

USEPA NERL Method 549.2, rev. 1.0, "Determination of Diquat and Paraquat in Drinking Water by Liquid-Solid Extraction and High Performance Liquid Chromatography with Ultraviolet Detection," June 1997, referenced in Section 611.645.

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

E*Colite Test, "Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and Escherichia coli in Drinking Water," January 9, 1998, referenced in Sections 611.802 and 611.1052. See also Charm Sciences, Inc.

m-ColiBlue24 Test, "Total Coliforms and E. coli Membrane Filtration Method with m-ColiBlue24® Broth," Method No.

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10029, rev. 2, August 17, 1999, referenced in Sections 611.802 and 611.1052. See also The Hach Company.

USEPA Method 1600, "~~EPA~~"Method 1600: Enterococci in Water by Membrane Filtration Using Membrane-Enterococcus Indoxyl-~~b~~-~~D~~-Glucoside Agar (mEI),²²" September 2002, EPA 821/R-~~02~~/022 is an approved variation of Standard Methods, Method 9230 C, "~~Fecal Streptococcus and Enterococcus Groups, Membrane Filter Techniques~~"²²" (which has not itself been approved for use by USEPA) (accessible on-line and available by download from <http://www.epa.gov/nerlcwww/1600sp02.pdf>), referenced in Section 611.802.

USEPA Method 1601, "~~Method 1601: Male-specific (F⁺) and Somatic Coliphage in Water by Two-step Enrichment Procedure,~~"²²" April 2001, EPA 821/R-~~01~~/030 (accessible on-line and available by download from <http://www.epa.gov/nerlcwww/1601ap01.pdf>), referenced in Section 611.802.

USEPA Method 1602, "~~Method 1602: Male-specific (F⁺) and Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure,~~"²²" April 2001, EPA 821/R-~~01~~/029 (accessible on-line and available by download from <http://www.epa.gov/nerlcwww/1602ap01.pdf>), referenced in Section 611.802.

USEPA Method 1604, "~~Method 1604: Total Coliforms and Escherichia coli in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium),~~"²²" September 2002, EPA 821/R-02/024 (accessible on-line and available by download from <http://www.epa.gov/nerlcwww/1604sp02.pdf>), referenced in Sections 611.802 and 611.1052.

USGS. United States Geological Survey, Federal Center, Box 25286, Denver, CO 80225-0425.

Method available upon request by method number from "~~Methods for Analysis by the U.S. Geological Survey National Water Quality~~"

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Laboratory— —Determination of Inorganic and Organic Constituents in Water and Fluvial Sediments,²²¹ Open File Report 93-125, 1993 (referred to as “USGS Methods”).

I-2601-90, referenced in Section 611.611.

Methods available upon request by method number from Book 5, Chapter A-1, “Methods for Determination of Inorganic Substances in Water and Fluvial Sediments,” 3rd ed., USGS Techniques of Water-Resource Investigation: 05-A1, 1989 (referred to as “USGS Methods”).

I-1030-85, referenced in Section 611.611.

I-1601-85, referenced in Section 611.611.

I-1700-85, referenced in Section 611.611.

I-2598-85, referenced in Section 611.611.

I-2700-85, referenced in Section 611.611.

I-3300-85, referenced in Section 611.611.

Methods available upon request by method number from “Methods for Determination of Radioactive Substances in Water and Fluvial Sediments,” Chapter A5 in Book 5 of “Techniques of Water-Resources Investigations of the United States Geological Survey,” 1977.

R-1110-76, referenced in Section 611.720.

R-1111-76, referenced in Section 611.720.

R-1120-76, referenced in Section 611.720.

R-1140-76, referenced in Section 611.720.

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R-1141-76, referenced in Section 611.720.

R-1142-76, referenced in Section 611.720.

R-1160-76, referenced in Section 611.720.

R-1171-76, referenced in Section 611.720.

R-1180-76, referenced in Section 611.720.

R-1181-76, referenced in Section 611.720.

R-1182-76, referenced in Section 611.720.

BOARD NOTE: USGS methods are freely available for download in an electronic format from the USGS Publications Warehouse, at pubs.er.usgs.gov/. Sections 611.611 and 611.720 do not distinguish the volume in which each USGS method appears. The distinction as to which volume where a particular method appears is made in this incorporation by reference.

Veolia Water Solutions and Technologies, Suite 4697, Biosciences Complex, 116 Barrie Street, Kingston, Ontario, Canada K7L 3N6.

“Tecta EC/TC P-A Test, “Presence/Absence Method for Simultaneous Detection of Total Coliforms and Escherichia coli (E. coli) in Drinking Water,” April 2014, referenced in Section 611.526.

Waters Corporation, Technical Services Division, 34 Maple St., Milford, MA 01757 (800-252-4752 or 508-478-2000, www.waters.com).

“Waters Test Method for Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography,” Method B-1011, August 1987 (referred to as “Waters Method B-1011”), referenced in Section 611.611.

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

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- b) Disinfection byproducts (DBPs).
 - 1) A supplier must measure disinfection byproducts (DBPs) by the appropriate of the following methods:
 - A) TTHM:
 - i) By purge and trap, gas chromatography, electrolytic conductivity detector, and photoionization detector: USEPA Organic Methods, Method 502.2 (rev. 2.1). If TTHMs are the only analytes being measured in the sample, then a photoionization detector is not required.
 - ii) By purge and trap, gas chromatography, mass spectrometer: USEPA Organic Methods, Method 524.2 (rev. 4.1).
 - iii) By liquid-liquid extraction, gas chromatography, electron capture detector: USEPA Organic Methods, Method 551.1 (rev. 1.0).
 - iv) By purge and trap, gas chromatography, mass spectrometry: USEPA OGWDW Methods, Method 524.3 (rev. 1.0) and 524.4.

BOARD NOTE: USEPA added USEPA OGWDW Methods, Method 524.3 (rev. 1.0) as an approved alternative method for TTHM in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA added USEPA OGWDW Methods, Method 524.4 as approved alternative methods for total trihalomethanes in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- B) HAA5:
 - i) By liquid-liquid extraction (diazomethane), gas chromatography, electron capture detector: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 6251 B.

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- ii) By solid phase extractor (acidic methanol), gas chromatography, electron capture detector: USEPA Organic Methods, Method 552.1 (rev. 1.0).
- iii) By liquid-liquid extraction (acidic methanol), gas chromatography, electron capture detector: USEPA Organic Methods, Method 552.2 (rev. 1.0) or USEPA OGWDW Methods, Method 552.3 (rev. 1.0).
- iv) By ion chromatography, electrospray ionization, tandem mass spectrometry: USEPA OGWDW Methods, Method 557.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 6251 B as an approved alternative method for HAA5 in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added USEPA OGWDW Methods, Method 557 as approved alternative methods for HAA5 in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Method 6251 B as an approved alternative methods for HAA5 in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 6251 B-07 as an approved alternative method for HAA5 in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 6251 B is the same version as Standard Methods Online, Method 9221 B-07, the Board has not listed the Standard Methods Online versions separately.

C) Bromate:

- i) By ion chromatography: USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0).
- ii) By ion chromatography and post-column reaction: USEPA OGWDW Methods, Method 317.0 (rev. 2.0) or 326.0 (rev. 1.0).

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- iii) By inductively coupled plasma-mass spectrometer: USEPA Organic and Inorganic Methods, Method 321.8 (rev. 1.0).
- iv) By two-dimensional ion chromatography: USEPA OGWDW Methods, Method 302.0.
- v) By ion chromatography, electrospray ionization, tandem mass spectrometry: USEPA OGWDW Methods, Method 557.
- vi) By chemically suppressed chromatography: ASTM Method D6581-08 A.
- vii) By electrolytically suppressed chromatography: ASTM Method D6581-08 B.

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

BOARD NOTE: USEPA added USEPA OGWDW Methods, Methods 302.0 and 557 and ASTM Methods D6581-08 A and B as approved alternative methods for bromate in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908).

D) Chlorite:

- i) By amperometric titration for daily monitoring pursuant to Section 611.382(b)(2)(A)(i): Standard Methods, 19th-~~or~~, 21st, or 22nd ed., Method 4500-~~-~~ClO₂ E.

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- ii) By amperometric sensor for daily monitoring pursuant to Section 611.382(b)(2)(A)(i): ChlordioX Plus Test.
- ~~iiiii~~iii) By spectrophotometry: USEPA OGWDW Methods, Method 327.0 (rev. 1.1).
- ~~iiiv~~iv) By ion chromatography: USEPA Environmental Inorganic Methods, Method 300.0 (rev. 2.1); USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0); USEPA OGWDW Methods, Method 317.0 (rev. 2.0), or 326.0 (rev. 1.0); or ASTM Method D6581-00.
- ~~iiivv~~v) By chemically suppressed chromatography: ASTM Method D6581-08 A.
- ~~iiivvi~~vi) By electrolytically suppressed chromatography: ASTM Method D6581-08 B.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 4500-ClO₂ E as an approved alternative method for daily chlorite in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Methods D6581-08 A and B as approved alternative methods for chlorite in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Method 4500-ClO₂ E as an approved alternative method for chlorite in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added ChlordioX Plus Test as an approved alternative method for chlorite in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

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

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chlorite in the distribution system, as prescribed in Section 611.382(b)(2)(A)(ii) and (b)(2)(B).

- 2) Analyses under this Section for DBPs must be conducted by a certified laboratory in one of the categories listed in Section 611.490(a) except as specified under subsection (b)(3) of this Section. To receive certification to conduct analyses for the DBP contaminants listed in Sections 611.312 and 611.381 and Subparts W and Y of this Part, the laboratory must fulfill the requirements of subsections (b)(2)(A), (b)(2)(C), and (b)(2)(D) of this Section.
 - A) The laboratory must analyze performance evaluation (PE) samples that are acceptable to USEPA or the Agency at least once during each consecutive 12-month period by each method for which the laboratory desires certification.
 - B) This subsection corresponds with 40 CFR 141.131(b)(2)(ii), which has expired by its own terms. This statement maintains structural consistency with the corresponding federal rule.
 - C) The laboratory must achieve quantitative results on the PE sample analyses that are within the acceptance limits set forth in subsections (b)(2)(C)(i) through (b)(2)(B)(xi) of this Section, subject to the conditions of subsections (b)(2)(C)(xii) and (b)(2)(C)(xiii) of this Section:
 - i) Chloroform (a THM): $\pm 20\%$ of true value;
 - ii) Bromodichloromethane (a THM): $\pm 20\%$ of true value;
 - iii) Dibromochloromethane (a THM): $\pm 20\%$ of true value;
 - iv) Bromoform (a THM): $\pm 20\%$ of true value;
 - v) Monochloroacetic Acid (an HAA5): $\pm 40\%$ of true value;
 - vi) Dichloroacetic Acid (an HAA5): $\pm 40\%$ of true value;

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- vii) Trichloroacetic Acid (an HAA5): $\pm 40\%$ of true value;
 - viii) Monobromoacetic Acid (an HAA5): $\pm 40\%$ of true value;
 - ix) Dibromoacetic Acid (an HAA5): $\pm 40\%$ of true value;
 - x) Chlorite: $\pm 30\%$ of true value; and
 - xi) Bromate: $\pm 30\%$ of true value.
 - xii) The laboratory must meet all four of the individual THM acceptance limits set forth in subsections (b)(2)(B)(i) through (b)(2)(B)(iv) of this Section in order to successfully pass a PE sample for TTHM.
 - xiii) The laboratory must meet the acceptance limits for four out of the five HAA5 compounds set forth in subsections (b)(2)(B)(v) through (b)(2)(B)(ix) of this Section in order to successfully pass a PE sample for HAA5.
- D) The laboratory must report quantitative data for concentrations at least as low as the minimum reporting levels (MRLs) listed in subsections (b)(2)(D)(i) through (b)(2)(D)(xi) of this Section, subject to the limitations of subsections (b)(2)(D)(xii) and (b)(2)(D)(xiii) of this Section, for all DBP samples analyzed for compliance with Sections 611.312 and 611.385 and Subparts W and Y of this Part:
- i) Chloroform (a THM): 0.0010 mg/l;
 - ii) Bromodichloromethane (a THM): 0.0010 mg/l;
 - iii) Dibromochloromethane (a THM): 0.0010 mg/l;
 - iv) Bromoform (a THM): 0.0010 mg/l;
 - v) Monochloroacetic Acid (an HAA5): 0.0020 mg/l;

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- vi) Dichloroacetic Acid (an HAA5): 0.0010 mg/l;
- vii) Trichloroacetic Acid (an HAA5): 0.0010 mg/l;
- viii) Monobromoacetic Acid (an HAA5): 0.0010 mg/l;
- ix) Dibromoacetic Acid (an HAA5): 0.0010 mg/l;
- x) Chlorite: 0.020 mg/l, applicable to monitoring as required by Section 611.382(b)(2)(A)(ii) and (b)(2)(B); and
- xi) Bromate: 0.0050, or 0.0010 mg/l if the laboratory uses USEPA OGWDW Methods, Method 317.0 or 326.0 or USEPA Organic and Inorganic Methods, Method 321.8.
- xii) The calibration curve must encompass the regulatory MRL concentration. Data may be reported for concentrations lower than the regulatory MRL as long as the precision and accuracy criteria are met by analyzing an MRL check standard at the lowest reporting limit chosen by the laboratory. The laboratory must verify the accuracy of the calibration curve at the MRL concentration by analyzing an MRL check standard with a concentration less than or equal to 110% of the MRL with each batch of samples. The measured concentration for the MRL check standard must be $\pm 50\%$ of the expected value, if any field sample in the batch has a concentration less than five times the regulatory MRL. Method requirements to analyze higher concentration check standards and meet tighter acceptance criteria for them must be met in addition to the MRL check standard requirement.
- xiii) When adding the individual trihalomethane or haloacetic acid concentrations, for the compounds listed in subsections (b)(2)(D)(v) through (b)(2)(D)(ix) of this Section, to calculate the TTHM or HAA5 concentrations, respectively, a zero is used for any analytical result that is

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less than the MRL concentration for that DBP, unless otherwise specified by the Agency.

- 3) A party approved by USEPA or the Agency must measure daily chlorite samples at the entrance to the distribution system.
- c) Disinfectant residuals.
- 1) A supplier must measure residual disinfectant concentrations for free chlorine, combined chlorine (chloramines), and chlorine dioxide by the appropriate of the methods listed in subsections (c)(1)(A) through (c)(1)(D) of this Section, subject to the provisions of subsection (c)(1)(E) of this Section:
 - A) Free Chlorine:
 - i) Amperometric titration: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl D, or ASTM Method D1253-86, D1253-96, D1253-03, or D1253-08;
 - ii) DPD ferrous titration: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl F;
 - iii) DPD colorimetric: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl G or Hach Method 10260;
 - iv) Syringaldazine (FACTS): Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl H;
 - v) Test strips: ITS Method D99-003 if approved by the Agency pursuant to subsection (c)(2) of this Section;
 - vi) Amperometric sensor: Palintest ChloroSense; or
 - vii) On-line chlorine analyzer: USEPA OGWDW Methods, Method 334.0.

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BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4500-Cl D, F, G, and H as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D1253-08, USEPA OGWDW Methods, Method 334.0, and Palintest ChloroSense as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 4500-Cl D, F, G, and H as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Hach Method 10260 as an approved alternative method for free chlorine in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- B) Combined Chlorine:
- i) Amperometric titration: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl D, or ASTM Method D1253-86, D1253-96, D1253-03, or D1253-08;
 - ii) DPD ferrous titration: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl F; or
 - iii) DPD colorimetric: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl G or Hach Method 10260.

BOARD NOTE: USEPA added Standard Methods, Methods 4500-Cl D, F, and G as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D1253-08 as an approved alternative method for combined chlorine in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 4500-Cl D, F, and G as approved alternative methods for combined chlorine in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Hach Method 10260 as an approved

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alternative method for combined chlorine in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- C) Total Chlorine:
- i) Amperometric titration: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl D, or ASTM Method D1253-86, D1253-96, D1253-03, or D1253-08;
 - ii) Low-level amperometric titration: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl E;
 - iii) DPD ferrous titration: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl F;
 - iv) DPD colorimetric: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl G or Hach Method 10260;
 - v) Iodometric electrode: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl I;
 - vi) Amperometric sensor: Palintest ChloroSense; or
 - vii) On-line chlorine analyzer: USEPA OGWDW Methods, Method 334.0.

BOARD NOTE: USEPA added Standard Methods, Methods 4500-Cl D, E, F, G, and I as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D1253-08, USEPA OGWDW Methods, Method 334.0, and Palintest ChloroSense as approved alternative methods for total chlorine in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 4500-Cl D, E, F, G, and I as approved alternative methods for total chlorine in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Hach Method 10260 as an approved alternative method for

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total chlorine in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- D) Chlorine Dioxide:
- i) DPD: Standard Methods, 19th, 20th, or 21st ed., Method 4500-ClO₂ D;
 - ii) Amperometric Method II: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-ClO₂ E; ~~or~~
 - iii) Amperometric sensor: ChlordioX Plus Test; or
 - ~~iiii)~~iv) Lissamine Green spectrophotometric: USEPA OGWDW Method 327.0 (rev. 1.1).

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4500-ClO₂ D and E as approved alternative methods for chlorine dioxide in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Method 4500-ClO₂ E as an approved alternative method for chlorine dioxide in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added ChlordioX Plus Test as an approved alternative method for chlorine dioxide in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- E) The methods listed are approved for measuring the specified disinfectant residual. The supplier may measure free chlorine or total chlorine for demonstrating compliance with the chlorine MRDL and combined chlorine, or total chlorine may be measured for demonstrating compliance with the chloramine MRDL.
- 2) Alternative methods available only upon specific approval by the Agency.
- A) Test strips: ITS Method D99-003.

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BOARD NOTE: USEPA added ITS Method D99-003 as an approved alternative method for free chlorine in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616), contingent upon specific state approval. The Board has opted to provide that the Agency can grant such approvals on a case-by-case basis using the SEP mechanism.

- B) If approved by the Agency, by an SEP issued pursuant to Section 611.110, a supplier may also measure residual disinfectant concentrations for chlorine, chloramines, and chlorine dioxide by using DPD colorimetric test kits.
- 3) A party approved by USEPA or the Agency must measure residual disinfectant concentration.
- d) A supplier required to analyze parameters not included in subsections (b) and (c) of this Section must use the methods listed below. A party approved by USEPA or the Agency must measure the following parameters:
 - 1) Alkalinity. All methods allowed in Section 611.611(a)(21) for measuring alkalinity.
 - 2) Bromide:
 - A) USEPA Inorganic Methods, Method 300.0 (rev. 2.1);
 - B) USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0);
 - C) USEPA OGWDW Methods, Method 317.0 (rev. 2.0) or Method 326.0 (rev. 1.0); or
 - D) ASTM Method D6581-00.
 - 3) Total Organic Carbon (TOC), by any of the methods listed in subsection (d)(3)(A)(i), (d)(3)(A)(ii), (d)(3)(A)(iii), or (d)(3)(B) of this Section, subject to the limitations of subsection (d)(3)(C) of this Section:
 - A) High-temperature combustion:

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- i) Standard Methods, 19th (Supplement), 20th, 21st, or 22nd ed., Method 5310 B; or
 - ii) USEPA NERL Method 415.3 (rev. 1.2).
- B) Persulfate-ultraviolet or heated-persulfate oxidation:
- i) Standard Methods, 19th (Supplement), 20th, 21st, or 22nd ed., Method 5310 C; or
 - ii) USEPA NERL Method 415.3 (rev. 1.2).
- C) Wet oxidation method:
- i) Standard Methods, 19th (Supplement), 20th, 21st, or 22nd ed., Method 5310 D; or
 - ii) USEPA NERL Method 415.3 (rev. 1.2).
- D) Specific UV₂₅₄ absorbance: USEPA NERL Method 415.3 (rev. 1.1) or 415.3 (rev. 1.2).
- E) Inorganic carbon must be removed from the samples prior to analysis. TOC samples may not be filtered prior to analysis. TOC samples must be acidified at the time of sample collection to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified TOC samples must be analyzed within 28 days.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 5310 B, C, and D as approved alternative methods for total organic carbon in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added USEPA NERL Method 415.3 (rev. 1.2) as an approved alternative method for total organic carbon in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 5310 B, C, and D as

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approved alternative methods for total organic carbon in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463).

- 4) Specific Ultraviolet Absorbance (SUVA). SUVA is equal to the UV absorption at 254 nm (UV_{254}) (measured in m^{-1}) divided by the dissolved organic carbon (DOC) concentration (measured as mg/ℓ). In order to determine SUVA, it is necessary to separately measure UV_{254} and DOC. When determining SUVA, a supplier must use the methods stipulated in subsection (d)(4)(A) of this Section to measure DOC and the method stipulated in subsection (d)(4)(B) of this Section to measure UV_{254} . SUVA must be determined on water prior to the addition of disinfectants/oxidants by the supplier. DOC and UV_{254} samples used to determine a SUVA value must be taken at the same time and at the same location.
 - A) Dissolved Organic Carbon (DOC). Prior to analysis, DOC samples must be filtered through the 0.45 μm pore-diameter filter as soon as practical after sampling, not to exceed 48 hours. After filtration, DOC samples must be acidified to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified DOC samples must be analyzed within 28 days after sample collection. Inorganic carbon must be removed from the samples prior to analysis. Water passed through the filter prior to filtration of the sample must serve as the filtered blank. This filtered blank must be analyzed using procedures identical to those used for analysis of the samples and must meet the following standards: DOC less than 0.5 mg/ℓ .
 - i) High-Temperature Combustion Method: Standard Methods, 19th (Supplement), 20th, 21st, or 22nd ed., Method 5310 B or USEPA NERL Methods 415.3 (rev. 1.1) or 415.3 (rev. 1.2).
 - ii) Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method, Standard Methods, 19th (Supplement), 20th, 21st, or 22nd ed., Method 5310 C or USEPA NERL Methods 415.3 (rev. 1.1) or 415.3 (rev. 1.2).

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- iii) ~~Wet-Oxidation Method: Standard Methods, 19th (Supplement), 20th, 21st, or 22nd ed., Method 5310 D or USEPA NERL Methods 415.3 (rev. 1.1) or 415.3 (rev. 1.2).~~

BOARD NOTE: USEPA added Standard Methods, Methods 5310 B, C, and D as approved alternative methods for dissolved organic carbon in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added USEPA NERL Method 415.3 (rev. 1.2) as an approved alternative method for dissolved organic carbon in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 5310 B, C, and D as approved alternative methods for dissolved organic carbon in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463).

- B) Ultraviolet Absorption at 254 nm (UV₂₅₄) by spectrometry: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 5910 B or USEPA NERL Method 415.3 (rev. 1.1) or 415.3 (rev. 1.2). UV absorption must be measured at 253.7 nm (may be rounded off to 254 nm). Prior to analysis, UV₂₅₄ samples must be filtered through a 0.45 µm pore-diameter filter. The pH of UV₂₅₄ samples may not be adjusted. Samples must be analyzed as soon as practical after sampling, not to exceed 48 hours; and

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 5910 B as an approved alternative method for ultraviolet absorption at 254 nm in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added USEPA NERL Method 415.3 (rev. 1.2) as an approved alternative method for ultraviolet absorbance in appendix A to subpart C of 40 CFR 141 on November (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Method 5910 B as an approved alternative method for ultraviolet absorption at 254 nm in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods Online, Method 5910 B-11 as an approved alternative method for ultraviolet absorption at 254 nm in appendix A to subpart C of 40 CFR 141 on June 19,

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tests between this medium and lauryl tryptose broth using the water normally tested and this comparison demonstrates that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than 10 percent;

- B) If inverted tubes are used to detect gas production, the media should cover these tubes at least one-half to two-thirds after the sample is added; and
 - C) No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes.
- 2) Total Coliform Membrane Filter Technique, as set forth in Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Methods 9222 A, B, and C.
 - 3) Presence-Absence (P-A) Coliform Test, as set forth in: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9221 D, as follows:
 - A) No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes; and
 - B) Six-times formulation strength may be used if the medium is filter-sterilized rather than autoclaved.
 - 4) ONPG-MUG test: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9223. (The ONPG-MUG test is also known as the ~~Autoanalysis~~ Colilert® Test ~~System~~.)
 - 5) ~~Colisure™~~ ~~Colisure™~~ Test (~~Autoanalysis~~ Colilert® Test ~~System~~). (The ~~Colisure™~~ ~~Colisure™~~ Test may be read after an incubation time of 24 hours.)

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

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include it for the purposes of the total coliform rule, under this Section.

- 6) E*Colite® Test (Charm Sciences, Inc.).
- 7) m-ColiBlue24® Test (Hatch Company).
- 8) ReadyCult® 2000.
- 9) Chromocult® Method.
- 10) Colitag® Test.
- 11) Modified Colitag™ Method.
- 12) Tecta EC/TC P-A Test.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 9221 A, B, and D; 9222 A, B, and C; and 9223 as approved alternative methods in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Modified Colitag™ Method as an approved alternative method in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 9221 A and B and 9223 B as approved alternative methods for total coliforms in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Methods 9221 A- and B-06 and 9223 B-04 as approved alternative methods for total coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Methods 9221 A and B and 9223 B are the same version as Standard Methods Online, Methods 9221 A and B-06 and 9223 B-04, the Board has not listed the Standard Methods Online versions separately. USEPA added Tecta EC/TC P-A Test as an approved alternative method for total coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- d) This subsection corresponds with 40 CFR 141.21(f)(4), which USEPA has marked "reserved." This statement maintains structural consistency with the federal regulations.
- e) Suppliers must conduct fecal coliform analysis in accordance with the following

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procedure:

- 1) When the MTF Technique or P-A Coliform Test is used to test for total coliforms, shake the lactose-positive presumptive tube or P-A vigorously and transfer the growth with a sterile 3-mm loop or sterile applicator stick into brilliant green lactose bile broth and EC medium, defined below, to determine the presence of total and fecal coliforms, respectively.
- 2) For approved methods that use a membrane filter, transfer the total coliform-positive culture by one of the following methods: remove the membrane containing the total coliform colonies from the substrate with sterile forceps and carefully curl and insert the membrane into a tube of EC medium; (the laboratory may first remove a small portion of selected colonies for verification); swab the entire membrane filter surface with a sterile cotton swab and transfer the inoculum to EC medium (do not leave the cotton swab in the EC medium); or inoculate individual total coliform-positive colonies into EC medium. Gently shake the inoculated tubes of EC medium to insure adequate mixing and incubate in a waterbath at $44.5 \pm 0.2^\circ \text{C}$ for 24 ± 2 hours. Gas production of any amount in the inner fermentation tube of the EC medium indicates a positive fecal coliform test.
- 3) EC medium is described in Standard Methods, 18th ed., 19th ed., 20th, or 22nd ed., Method 9221 E.
- 4) Suppliers need only determine the presence or absence of fecal coliforms; a determination of fecal coliform density is not required.

BOARD NOTE: USEPA added Standard Methods, 22nd ed., Method 9221 E as an approved alternative method for fecal coliforms in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 9221 E-06 as an approved alternative method for fecal coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9221 E is the same version as Standard Methods Online, Method 9221 E-06, the Board has not listed the Standard Methods Online version separately.

- f) Suppliers must conduct analysis of E. coli in accordance with one of the following

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analytical methods, incorporated by reference in Section 611.102:

- 1) EC medium supplemented with 50 $\mu\text{g}/\ell$ of MUG (final concentration). EC medium is as described in subsection (e) of this Section. MUG may be added to EC medium before autoclaving. EC medium supplemented with 50 $\mu\text{g}/\ell$ MUG is commercially available. At least 10 ml of EC medium supplemented with MUG must be used. The inner inverted fermentation tube may be omitted. The procedure for transferring a total coliform-positive culture to EC medium supplemented with MUG is as in subsection (e) of this Section for transferring a total coliform-positive culture to EC medium. Observe fluorescence with an ultraviolet light (366 nm) in the dark after incubating tube at $44.5 \pm 2^\circ \text{C}$ for 24 ± 2 hours; or
- 2) Nutrient agar supplemented with 100 $\mu\text{g}/\ell$ MUG (final concentration), as described in Standard Methods, 19th ed., 20th, or 22nd ed., Method 9222 G. This test is used to determine if a total coliform-positive sample, as determined by the MF technique, contains E. coli. Alternatively, Standard Methods, 18th ed., Method 9221 B may be used if the membrane filter containing a total coliform-positive colony or colonies is transferred to nutrient agar, as described in Method 9221 B (paragraph 3), supplemented with 100 $\mu\text{g}/\ell$ MUG. If Method 9221 B is used, incubate the agar plate at 35°C for four hours, then observe the colony or colonies under ultraviolet light (366-nm) in the dark for fluorescence. If fluorescence is visible, E. coli are present.
- 3) Minimal Medium ONPG-MUG (MMO-MUG) Test, as set forth in Appendix D of this Part. (~~The Autoanalysis Colilert® Test System- (Colisure™)(Colisure™ Test)~~ is a MMO-MUG test.) If the MMO-MUG test is total coliform positive after a 24-hour incubation, test the medium for fluorescence with a 366-nm ultraviolet light (preferably with a six-watt lamp) in the dark. If fluorescence is observed, the sample is E. coli-positive. If fluorescence is questionable (cannot be definitively read) after 24 hours incubation, incubate the culture for an additional four hours (but not to exceed 28 hours total), and again test the medium for fluorescence. The MMO-MUG test with hepes buffer is the only approved formulation for the detection of E. coli.
- 4) The ~~Colisure™(Colisure™ Test)~~ Test (~~Autoanalysis-Colilert® Test-System~~).

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- 5) The membrane filter method with MI agar.
- 6) The E*Colite® Test.
- 7) The m-ColiBlue24® Test.
- 8) Readycult® 2000.
- 9) Chromocult® Method.
- 10) Colitag® Test.
- 11) ONPG-MUG Test: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B.
- 12) Modified Colitag™ Method.
- 13) Tecta EC/TC P-A Test.

BOARD NOTE: USEPA added Standard Methods, 20th or 21st ed., Method 9223 B and Standard Methods Online, Method 9223 B-97 as approved alternative methods for E. coli in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). Because Standard Methods, 21st ed., Method 9223 B is the same version as Standard Methods Online, Method 9223 B-97, the Board has not listed the Standard Methods Online version separately. USEPA added Standard Methods, 22nd ed., Method 9223 B as an approved alternative method for E. coli in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 9223 B-04 as an approved ~~an~~ alternative method for E. coli in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9223 B is the same version as Standard Methods Online, Method 9223 B-04, the Board has not listed the Standard Methods Online versions separately. USEPA added Tecta EC/TC P-A Test as an approved alternative method for total coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- g) As an option to the method set forth in subsection (f)(3) of this Section, a supplier

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A) Total Coliforms.

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

- i) Total coliform fermentation technique: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9221 A, B, and C.

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

- ii) Total coliform membrane filter technique: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9222 A, B, and C.

- iii) ONPG-MUG test (also known as the ~~Autoanalysis~~ Colilert® Test ~~System~~): Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9223.

BOARD NOTE: USEPA included the P-A Coliform and ~~Colisure™~~ [Colisure™](#) Tests for testing finished water under the coliform rule, under Section 611.526, but did not include them for the purposes of the surface water treatment rule, under this Section, for which quantitation of total coliforms is necessary. For these reasons, USEPA

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included Standard Methods, Method 9221 C for the surface water treatment rule, but did not include it for the purposes of the total coliform rule, under Section 611.526.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 9221 A, B, and C; 9222 A, B, and C; and 9223 as approved alternative methods for total coliform in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ~~Standard~~standard Methods, 22nd ed., Methods ~~9221~~8221 A, B, and C and 9223 B as approved alternative methods for total coliform in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods Online, Methods 9221 A, B, and C-06 and 9223 B-04 as approved alternative methods for total coliform in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Methods 9221 A, B, and C and 9223 B are the same versions as Standard Methods Online, Methods 9221 A, B, and C-06 and 9223 B-04, the Board has not listed the Standard Methods Online versions separately.

B) Fecal Coliforms.

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

- i) Fecal coliform procedure: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9221 E.

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

- ii) Fecal Coliform Membrane Filter Procedure: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9222 D.

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BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 9221 E and 9222 D as approved alternative methods for fecal coliforms in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Methods 9221 E and 9222 D as approved alternative methods for fecal coliforms in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods Online, Methods 9221 E-06 and 9222 D-06 as approved alternative methods for fecal coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Methods 9221 E and 9222 D are the same versions as Standard Methods Online, Methods 9222 E-06 and 9222 D-06, the Board has not listed the Standard Methods Online versions separately.

C) Heterotrophic bacteria.

- i) Pour plate method: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9215 B.

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

- ii) SimPlate method.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 9215 B as an approved alternative method for heterotrophic bacteria in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., ~~Method~~Methods 9215 B as an approved alternative method for heterotrophic bacteria in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods Online, Method 9215 B-04 as an approved alternative method for heterotrophic bacteria in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method

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9215 B is the same version as Standard Methods Online, Method 9215 B-04, the Board has not listed the Standard Methods Online versions separately.

- D) Turbidity.
BOARD NOTE: Styrene divinyl benzene beads (e.g., AMCO-AEPA-1 or equivalent) and stabilized formazin (e.g., Hach StablCal™ or equivalent) are acceptable substitutes for formazin.
- i) Nephelometric method: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 2130 B.
 - ii) Nephelometric method: USEPA Environmental Inorganic Methods, Method 180.1 (rev. 2.0).
 - iii) GLI Method 2.
 - iv) Hach FilterTrak Method 10133.
 - v) Laser nephelometry (on-line): Mitchell Method M5271.
 - vi) LED nephelometry (on-line): Mitchell Method M5331 or AMI Turbiwell Method.
 - vii) LED nephelometry (portable): Orion Method AQ4500.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 9130 B as an approved alternative method for turbidity in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Mitchell Method M5271 and Orion Method AQ4500 as approved alternative methods for turbidity in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA added AMI Turbiwell Method as an approved alternative method for turbidity in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Method 2130 B as an approved alternative method for turbidity in

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appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463).

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

- b) A supplier must measure residual disinfectant concentrations with one of the following analytical methods:
 - 1) Free chlorine.
 - A) Amperometric Titration.
 - i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-C1 D.
 - ii) ASTM Method D1253-03 or D1253-08.
 - B) DPD Ferrous Titrimetric: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-C1 F.
 - C) DPD Colimetric: ~~Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-C1 G.~~
 - i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-C1 G; or
 - ii) Hach Method 10260.
 - D) Syringaldazine (FACTS): Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-C1 H.
 - E) On-line chlorine analyzer: USEPA OGWDW Methods, Method 334.0.
 - F) Amperometric sensor: Palintest ChloroSense.

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BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4500-Cl D, F, G, and H; Method 4500-ClO₂ C and E as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D1253-08, USEPA OGWDW Methods, Method 334.0, and Palintest ChloroSense as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 4500-~~Cl~~ B, F, G, and H as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Hach Method 10260 as an approved alternative method for total chlorine in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- 2) Total chlorine.
 - A) Amperometric Titration:-
 - i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl D.
 - ii) ASTM Method D1253-03 or D1253-08.
 - B) Amperometric Titration (low level measurement): Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl E.
 - C) DPD Ferrous Titrimetric: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl F.
 - D) DPD Colimetric: ~~Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl G.~~
 - i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl G; or
 - ii) Hach Method 10260.
 - E) Iodometric Electrode: Standard Methods, 18th, 19th, 20th, 21st, or

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22nd ed., Method 4500-Cl I.

- F) On-line chlorine analyzer: USEPA OGWDW Methods, Method 334.0.
- G) Amperometric sensor: Palintest ChloroSense.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4500-Cl D, E, F, G, and I as approved alternative methods for total chlorine in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D1253-08, USEPA OGWDW Methods, Method 334.0, and Palintest ChloroSense as approved alternative methods for total chlorine in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 4500-~~Cl~~ Cl D, E, F, G, and I as approved alternative methods for total chlorine in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Hach Method 10260 as an approved alternative method for total chlorine in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- 3) Chlorine dioxide.
 - A) Amperometric Titration: ~~Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-ClO₂-C or E.~~
 - i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-ClO₂ C or E; or
 - ii) ChlordioX Plus Test.
 - B) DPD Method: Standard Methods, 18th, 19th, or 20th ed., Method 4500-ClO₂ D.
 - C) Spectrophotometric: USEPA OGWDW Methods, Method 327.0 (rev. 1.1).

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BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 4500-~~ClO~~ClO₂ C, D, and E and Method 4500-O₃ B as approved alternative methods for chlorine dioxide in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Methods 4500-~~ClO~~ClO₂ C and E as approved alternative methods for chlorine dioxide in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Hach Method 10260 as an approved alternative method for free chlorine and total chlorine and ChlordioX Plus Test as an approved alternative method for chlorine dioxide in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- 4) Ozone: Indigo Method: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-O₃ B.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method-~~Method~~ 4500-O₃ B as an approved alternative method for ozone in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Method 4500-O₃ B as an approved alternative method for ozone in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- 5) Alternative test methods: The Agency may grant a SEP pursuant to Section 611.110 that allows a supplier to use alternative chlorine test methods as follows:
- A) DPD colorimetric test kits: Residual disinfectant concentrations for free chlorine and combined chlorine may also be measured by using DPD colorimetric test kits.
 - B) Continuous monitoring for free and total chlorine: Free and total chlorine residuals may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument, provided the chemistry, accuracy, and precision remain the same. Instruments used for continuous monitoring must be calibrated with a grab sample measurement at least every five days or as otherwise provided by the Agency.

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

BOARD NOTE: Derived from 40 CFR 141.74(a) and appendix A to subpart C of 40 CFR 141 (2013)-(2014).

(Source: Amended at 39 Ill. Reg. —, effective —)

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.600 Applicability

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

- a) CWS suppliers.
- b) NTNCWS suppliers.
- c) Transient non-CWS suppliers to determine compliance with the nitrate and nitrite MCLs.
- d) Detection limits. The following are detection limits for purposes of this Subpart N (MCLs from Section 611.301 are set forth for information purposes only):

Contaminant	MCL (mg/ℓ, except asbestos)	Method	Detection Limit (mg/ℓ)
Antimony	0.006	Atomic absorption- <u>—</u> furnace technique	0.003
		Atomic absorption- <u>—</u> furnace technique (stabilized temperature)	0.0008 ⁵
		Inductively coupled	0.0004

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		plasma-mass spectrometry Atomic absorption- <u>gaseous</u> hydride technique	0.001
Arsenic	0.010	Atomic absorption- <u>furnace</u> technique	0.001
		Atomic absorption- <u>furnace</u> technique (stabilized temperature)	0.00005 ⁶
		Atomic absorption- <u>gaseous</u> hydride technique	0.001
		Inductively coupled plasma-mass spectrometry	0.0014 ⁷
Asbestos	7 MFL ¹	Transmission electron microscopy	0.01 MFL
Barium	2	Atomic absorption- <u>furnace</u> technique	0.002
		Atomic absorption- <u>direct</u> aspiration technique	0.1
		Inductively coupled plasma arc furnace	0.002
		Inductively coupled plasma	0.001
Beryllium	0.004	Atomic absorption- <u>furnace</u> technique	0.0002

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		Atomic absorption- <u> </u> furnace technique (stabilized temperature)	0.00002 ⁵
		Inductively coupled plasma ²	0.0003
		Inductively coupled plasma-mass spectrometry	0.0003
<hr/>			
Cadmium	0.005	Atomic absorption- <u> </u> furnace technique	0.0001
		Inductively coupled plasma	0.001
<hr/>			
Chromium	0.1	Atomic absorption- <u> </u> furnace technique	0.001
		Inductively coupled plasma	0.007
		Inductively coupled plasma	0.001
<hr/>			
Cyanide	0.2	Distillation, spectrophotometric ³	0.02
		Automated distillation, spectrophotometric ³	0.005
		Distillation, selective electrode ³	0.05
		Distillation, amenable, spectrophotometric ⁴	0.02
		UV, distillation,	0.0005

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		spectrophotometric ⁸	
		Micro distillation, flow injection, spectrophotometric ³	0.0006
		Ligand exchange with amperometry ⁴	0.0005
<hr/>			
Mercury	0.002	Manual cold vapor technique	0.0002
		Automated cold vapor technique	0.0002
<hr/>			
Nickel	No MCL	Atomic absorption- <u>—</u> furnace technique	0.001
		Atomic absorption- <u>—</u> furnace technique (stabilized temperature)	0.0006 ⁵
		Inductively coupled plasma ²	0.005
		Inductively coupled plasma-mass spectrometry	0.0005
<hr/>			
Nitrate (as N)	10	Manual cadmium reduction	0.01
		Automated hydrazine reduction	0.01
		Automated cadmium reduction	0.05

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		Ion-selective electrode	1
		Ion chromatography	0.01
		Capillary ion electrophoresis	0.076
<hr/>			
Nitrite (as N)	1	Spectrophotometric	0.01
		Automated cadmium reduction	0.05
		Manual cadmium reduction	0.01
		Ion chromatography	0.004
		Capillary ion electrophoresis	0.103
<hr/>			
Selenium	0.05	Atomic absorption- <u> </u> furnace technique	0.002
		Atomic absorption- <u> </u> gaseous hydride technique	0.002
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Thallium	0.002	Atomic absorption- <u> </u> furnace technique	0.001
		Atomic absorption- <u> </u> furnace technique (stabilized temperature)	0.0007 ⁵
		Inductively coupled plasma-mass spectrometry	0.0003

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Footnotes.

- 1 "MFL" means millions of fibers per liter less than 10 μ m.
- 2 Using a 2x preconcentration step as noted in Method 200.7. Lower MDLs may be achieved when using a 4x preconcentration.
- 3 Screening method for total cyanides.
- 4 Measures "free" cyanides when distillation, digestion, or ligand exchange is omitted.
- 5 Lower MDLs are reported using stabilized temperature graphite furnace atomic absorption.
- 6 The MDL reported for USEPA Method 200.9 (atomic absorption-platform furnace (stabilized temperature)) was determined using a 2x concentration step during sample digestion. The MDL determined for samples analyzed using direct analyses (i.e., no sample digestion) will be higher. Using multiple depositions, USEPA Method 200.9 is capable of obtaining an MDL of 0.0001 mg/l.
- 7 Using selective ion monitoring, USEPA Method 200.8 (ICP-MS) is capable of obtaining an MDL of 0.0001 mg/l.
- 8 Measures total cyanides when UV-digester is used, and "free" cyanides when UV-digester is bypassed.

Footnotes.

- 1 ~~"MFL" means millions of fibers per liter less than 10 μ m.~~
- 2 ~~Using a 2x preconcentration step as noted in Method 200.7. Lower MDLs may be achieved when using a 4x preconcentration.~~
- 3 ~~Screening method for total cyanides.~~
- 4 ~~Measures "free" cyanides when distillation, digestion, or ligand exchange is omitted.~~
- 5 ~~Lower MDLs are reported using stabilized temperature graphite furnace atomic absorption.~~

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- 6 ~~The MDL reported for USEPA Method 200.9 (atomic absorption-platform-furnace (stabilized temperature)) was determined using a 2× concentration step during sample digestion. The MDL determined for samples analyzed using direct analyses (i.e., no sample digestion) will be higher. Using multiple depositions, USEPA Method 200.9 is capable of obtaining an MDL of 0.0001 mg/ℓ.~~
- 7 ~~Using selective ion monitoring, USEPA Method 200.8 (ICP-MS) is capable of obtaining an MDL of 0.0001 mg/ℓ.~~
- 8 ~~Measures total cyanides when UV digester is used, and “free” cyanides when UV digester is bypassed.~~

BOARD NOTE: Subsections (a) through (c) of this Section are derived from 40 CFR 141.23 preamble (2012)(2014), and subsection (d) of this Section is derived from 40 CFR 141.23 (a)(4)(i) and appendix A to subpart C of 40 CFR 141 (2012)(2014). See the Board Note at Section 611.301(b) relating to the MCL for nickel.

(Source: Amended at 39 Ill. Reg. ———, effective ———)

Section 611.611 Inorganic Analysis

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

- a) Analysis for the following contaminants must be conducted using the following methods or an alternative method approved pursuant to Section 611.480. Criteria for analyzing arsenic, chromium, copper, lead, nickel, selenium, sodium, and thallium with digestion or directly without digestion, and other analytical procedures, are contained in USEPA Technical Notes, incorporated by reference in Section 611.102.

BOARD NOTE: Because MDLs reported in USEPA Environmental Metals Methods 200.7 and 200.9 were determined using a 2× preconcentration step during sample digestion, MDLs determined when samples are analyzed by direct

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analysis (i.e., no sample digestion) will be higher. For direct analysis of cadmium and arsenic by USEPA Environmental Metals Method 200.7, and arsenic by Standard Methods, Method 3120 B, sample preconcentration using pneumatic nebulization may be required to achieve lower detection limits. Preconcentration may also be required for direct analysis of antimony, lead, and thallium by USEPA Environmental Metals Method 200.9; antimony and lead by Standard Methods, 18th, 19th, or 21st ed., Method 3113 B; and lead by ASTM Method D3559-96 D or D3559-03 D unless multiple in-furnace depositions are made.

- 1) Alkalinity.
 - A) Titrimetric.
 - i) ASTM Method D1067-92 B, D1067-02 B, D1067-06 B, or D1067-11 B; or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 2320 B; ~~or.~~
 - iii) ~~Standard Methods Online, Method 3113 B-04.~~
 - B) Electrometric titration: USGS Methods, Method I-1030-85.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 2320 B as an approved alternative method for alkalinity in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). ~~USEPA added ASTM Method D1067-06 B and Standard Methods Online, Method 3113 B-04 as approved alternative methods for alkalinity in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014).~~ USEPA added Standard Methods, 22nd ed., Method 2320 B and ASTM Method D1067-11 B as approved alternative methods for alkalinity in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- 2) Antimony.
 - A) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).

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- B) Atomic absorption, hydride technique: ASTM Method D3697-92, D3697-02, or D3697-07.
- C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
- D) Atomic absorption, furnace technique:
 - i) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - ii) Standard Methods Online, Method 3113 B-04.
- E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 3113B and USEPA NERL Method 200.5 as approved alternative methods for antimony in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D3697-07 as an approved alternative method for antimony in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for antimony in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Method 3113 B as an approved alternative method for antimony in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for antimony in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 3) Arsenic.

BOARD NOTE: If ultrasonic nebulization is used in the determination of arsenic by Method 200.8, the arsenic must be in the pentavalent state to

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provide uniform signal response. For direct analysis of arsenic with Method 200.8 using ultrasonic nebulization, samples and standards must contain one mg/ℓ of sodium hypochlorite.

- A) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
- B) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
- C) Atomic absorption, furnace technique.
 - i) ASTM Method D2972-97 C, D2972-03 C, or D2972-08 C;
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - iii) Standard Methods Online, Method 3113 B-04.
- D) Atomic absorption, hydride technique.
 - i) ASTM Method D2972-97 B, D2972-03 C, or D2972-08 B;
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3114 B; or
 - iii) Standard Methods Online, Method 3114 B-04.
- E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3113 B and 3114 B and USEPA NERL Method 200.5 as approved alternative methods for arsenic in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Methods D2972-08 B and C as approved alternative methods for arsenic in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods Online, Method 3113

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B-04 and Method 3114 B-09 as approved alternative methods for arsenic in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3113 B and 3114 B as approved alternative methods for arsenic in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). Because Standard Methods, 22nd ed., Method 3114 B is the same version as Standard Methods Online 3114 B-09, the Board has not listed the Standard Methods Online version separately. USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for arsenic in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 4) Asbestos: Transmission electron microscopy: USEPA Asbestos Method 100.1 or USEPA Asbestos Method 100.2.
- 5) Barium.
 - A) Inductively coupled plasma.
 - i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
 - B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
 - C) Atomic absorption, direct aspiration technique: Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3111 D.
 - D) Atomic absorption, furnace technique:
 - i) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or

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- ii) Standard Methods Online, Method 3113 B-04.
- E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3111 D, 3113 B, and 3120 B and USEPA NERL Method 200.5 as approved alternative methods for barium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for barium in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3111 D, 3113 B, and 3120 B as approved alternative methods for barium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for barium in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 6) Beryllium.
 - A) Inductively coupled plasma.
 - i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
 - B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
 - C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
 - D) Atomic absorption, furnace technique.

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- i) ASTM Method D3645-97 B, D3645-03 B, or D3645-08 B;-
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - iii) Standard Methods Online, Method 3113 B-04.
- E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3113 B and 3120 B and USEPA NERL Method 200.5 as approved alternative methods for beryllium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D3645-08 B as an approved alternative method for beryllium in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for beryllium in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3113 B and 3120 B as approved alternative methods for beryllium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for beryllium in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 7) Cadmium.
- A) Inductively coupled plasma arc furnace: USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4).
 - B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).

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- C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
- D) Atomic absorption, furnace technique:
 - i) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - ii) Standard Methods Online, Method 3113 B-04.
- E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 3113 B and USEPA NERL Method 200.5 as approved alternative methods for cadmium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for cadmium in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Method 3113 B as an approved alternative method for cadmium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for cadmium in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 8) Calcium.
 - A) EDTA titrimetric.
 - i) ASTM Method D511-93 A, D511-03 A, or D511-09 A; or
 - ii) Standard Methods, 18th or 19th ed., Method 3500-Ca D or Standard Methods, 20th, 21st, or 22nd ed., Method 3500-Ca B.

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- B) Atomic absorption, direct aspiration.
 - i) ASTM Method D511-93 B, D511-03 B, or D511-09 B; or
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3111 B.
- C) Inductively coupled plasma.
 - i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
- D) Ion chromatography: ASTM Method D6919-03 or D6919-09.
- E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3111 B, 3120 B, and 3500-Ca B and USEPA NERL Method 200.5 as approved alternative methods for calcium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Methods D511-09 A and B as approved alternative methods for calcium in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added ASTM Method D6919-09 as an approved alternative method for calcium in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3111 B, 3120 B, and 3500-Ca B as approved alternative methods for calcium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- 9) Chromium.
 - A) Inductively coupled plasma.

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- i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
- B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
- C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
- D) Atomic absorption, furnace technique:
- i) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - ii) Standard Methods Online, Method 3113 B-04.
- E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3113 B and 3120 B and USEPA NERL Method 200.5 as approved alternative methods for chromium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for chromium in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3113 B and 3120 B as approved alternative methods for chromium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for chromium in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

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~~10) Conductivity; Conductance.~~

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

~~B) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 2510 B.~~

~~BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 2510 B as an approved alternative method for conductivity in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Method 2510 B as an approved alternative method for conductivity in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).~~

10) Copper.

A) Atomic absorption, furnace technique.

i) ASTM Method D1688-95 C, D1688-02 C, or D1688-07 C;

ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or

iii) Standard Methods Online, Method 3113 B-04.

B) Atomic absorption, direct aspiration.

i) ASTM Method D1688-95 A, D1688-02 A, or D1688-07 A;
or

ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3111 B.

C) Inductively coupled plasma.

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- i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
- D) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
- E) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
- F) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3111 B, 3113 B, and 3120 B and USEPA NERL Method 200.5 as an approved alternative method for copper in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Methods D1688-07 A and C as approved alternative methods for copper in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for copper in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3111 B, 3113 B, and 3120 B as approved alternative methods for copper in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for copper in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 11) Conductivity; Conductance.
- A) ASTM Method D1125-95(1999) A; or

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- B) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 2510 B.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 2510 B as an approved alternative method for conductivity in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616).

USEPA added Standard Methods, 22nd ed., Method 2510 B as an approved alternative method for conductivity in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- 12) Cyanide.

- A) Manual distillation (ASTM Method D2036-98 A or Standard Methods, 18th, 19th, or 20th ed., Method 4500-CN⁻₂ C), followed by spectrophotometric, amenable.
- i) ASTM Method D2036-98 B or D2036-06 B; or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-CN⁻₂ G.
- B) Manual distillation (ASTM Method D2036-98 A or Standard Methods, 18th, 19th, or 20th ed., Method 4500-CN⁻₂ C), followed by spectrophotometric, manual.
- i) ASTM Method D2036-98 A or D2036-06 A;
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-CN⁻₂ E; or
 - iii) USGS Methods, Method I-3300-85.
- C) Spectrophotometric, semiautomated: USEPA Environmental Inorganic Methods, Method 335.4 (rev. 1.0).
- D) Selective electrode: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-CN⁻₂ F.

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- E) UV/Distillation/Spectrophotometric: Kelada 01.
- F) Microdistillation/Flow Injection/Spectrophotometric: QuikChem 10-204-00-1-X.
- G) Ligand exchange and amperometry.
 - i) ASTM Method D6888-04.
 - ii) OI Analytical Method OIA-1677 DW.
- H) Gas chromatography-mass spectrometry headspace: Method ME355.01.

BOARD NOTE: USEPA added ASTM Method D2036-06 A and Standard Methods, 21st ed., Methods 4500-CN~~-~~E, F, and G as approved alternative methods for cyanide in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Method ME355.01 as an approved alternative method for cyanide in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA added Standard Methods, 22nd ed., Methods 4500-CN~~-~~E, F, and G as approved alternative methods for cyanide in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- 13) Fluoride.
 - A) Ion Chromatography.
 - i) USEPA Environmental Inorganic Methods, Method 300.0 (rev. 2.1) or USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0);
 - ii) ASTM Method D4327-97, ~~or~~ D4327-03, or D4327-11;
 - iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4110 B; or
 - iv) Hach SPADNS 2 Method 10225.

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- B) Manual distillation, colorimetric SPADNS: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-F⁻ B and D.
- C) Manual electrode.
 - i) ASTM Method D1179-93 B, D1179-99 B, D1179-04 B, or D1179-10 B; or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-F⁻ C.
- D) Automated electrode: Technicon Methods, Method 380-75WE.
- E) Automated alizarin.
 - i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-F⁻ E; or
 - ii) Technicon Methods, Method 129-71W.
- F) Capillary ion electrophoresis: ASTM Method D6508-00(2005).

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for fluoride to add capillary ion electrophoresis in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of "Waters Method D6508, Rev. 2.22". The Board attempt to locate a copy of the method disclosed that it is an ASTM method originally approved in 2000 and reapproved in 2005. The Board has cited to the ASTM Method D6508-00 (2005).

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4110 B and 4500-F⁻ B, C, D, and E and ASTM Method D1179-04 B as approved alternative methods for fluoride in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Hach SPADNS 2 Method 10225 as an approved alternative method for fluoride in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added ASTM Method D1179-10 B as an

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approved alternative method for fluoride in appendix A to subpart C of 40 CFR 141 on June 28, 2012 (at 77 Fed. Reg. 38523). USEPA added Standard Methods, 22nd ed., Methods 4110 B and 4500-F- B, C, D, and E as approved alternative methods for fluoride in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added ASTM Method D4327-11 as an approved ~~an~~ alternative method for fluoride in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- 14) Lead.
- A) Atomic absorption, furnace technique.
 - i) ASTM Method D3559-96 D, D3559-03 D, or D3559-08 D;
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - iii) Standard Methods Online, Method 3113 B-04.
 - B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
 - C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
 - D) Differential Pulse Anodic Stripping Voltammetry: Palintest Method 1001.
 - E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 3113 B and USEPA NERL Method 200.5 as approved alternative methods for lead in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D3559-08 D as an approved alternative method for lead in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added

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Standard Methods Online, Method 3113 B-04 as an approved alternative method for lead in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Method 3113 B as an approved alternative method for lead in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for lead in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 15) Magnesium.
 - A) Atomic absorption.
 - i) ASTM Method D511-93 B, D511-03 B, or D511-09 B; or
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3111 B.
 - B) Inductively coupled plasma.
 - i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
 - C) Complexation titrimetric.
 - i) ASTM Method D511-93 A, D511-03 A, or D511-09 A; or
 - ii) Standard Methods, 18th or 19th ed., Method 3500-Mg E or Standard Methods, 20th, 21st, or 22nd ed., Method 3500-Mg B.
 - D) Ion chromatography: ASTM Method D6919-03 or D6919-09.

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

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3111 B, 3120 B, and 3500-Mg B and USEPA NERL Method 200.5 as approved alternative methods for magnesium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Methods D511-09 A and B as approved alternative methods for magnesium in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added ASTM Method D6919-09 as an approved alternative method for magnesium in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3111 B, 3120 B, and 3500-Mg B as approved alternative methods for magnesium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

16) Mercury.

- A) Manual cold vapor technique.
- i) USEPA Environmental Metals Methods, Method 245.1 (rev. 3.0);
 - ii) ASTM Method D3223-97, ~~or~~ D3223-02, or D3223-12; or
 - iii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3112 B.
- B) Automated cold vapor technique: USEPA Inorganic Methods, Method 245.2.
- C) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 3112 B as an approved alternative method for mercury in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added

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Standard Methods Online, Method 3112 B-09 as an approved alternative method for mercury in appendix A to subpart C of 40 CFR 141 on June 28, 2012 (at 77 Fed. Reg. 38523). USEPA added Standard Methods, 22nd ed., Method 3112 B as an approved alternative method for mercury in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). Because Standard Methods, 22nd ed., Method 3112 B is the same version as Standard Methods Online 3112 B-09, the Board has not listed the Standard Methods Online version separately. USEPA added ASTM D3223 B-12 as an approved alternative method for mercury in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- 17) Nickel.
- A) Inductively coupled plasma.
 - i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
 - B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
 - C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
 - D) Atomic absorption, direct aspiration technique: Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3111 B.
 - E) Atomic absorption, furnace technique:
 - i) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - ii) Standard Methods Online, Method 3113 B-04.

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

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3111 B, 3113 B, and 3120 B and USEPA NERL Method 200.5 as approved alternative methods for nickel in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for nickel in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3111 B, 3113 B, and 3120 B as approved alternative methods for nickel in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for nickel in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 18) Nitrate.

- A) Ion chromatography.

- i) USEPA Environmental Inorganic Methods, Method 300.0 (rev. 2.1) or USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0);
- ii) ASTM Method D4327-97, ~~or D4327-03, 03.~~ or D4327-11;
- iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4110 B; or
- iv) Waters Test Method B-1011, available from Millipore Corporation.

- B) Automated cadmium reduction.

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- i) USEPA Environmental Inorganic Methods, Method 353.2 (rev. 2.0);
 - ii) ASTM Method D3867-90 A; or
 - iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-NO₃⁻ F.
- C) Ion selective electrode.
- i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-NO₃⁻ D; or
 - ii) Technical Bulletin 601.
- D) Manual cadmium reduction.
- i) ASTM Method D3867-90 B; or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-NO₃⁻ E.
- E) Capillary ion electrophoresis: ASTM Method D6508-00(2005).
- F) Reduction-colorimetric: Syssta Easy (1-Reagent).
- G) Direct colorimetric: Hach TNTplus 835/836 Method 10206.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4110 B and 4500-NO₃⁻ D, E, and F as approved alternative methods for nitrate in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Syssta Easy (1-Reagent) as an approved alternative method for nitrate in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 73 Fed. Reg. 38348). USEPA added Hach TNTplus 835/836 Method 10206 as an approved alternative method for nitrate in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 4110 B and 4500-NO₃⁻ D, E, and F as approved alternative methods for nitrate in

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appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added ASTM D4327-11 as an approved alternative method for nitrate in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- 19) Nitrite.
 - A) Ion chromatography.
 - i) USEPA Environmental Inorganic Methods, Method 300.0 (rev. 2.1) or USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0);
 - ii) ASTM Method D4327-97, ~~or~~ D4327-03, or D4327-11;
 - iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4110 B; or
 - iv) Waters Test Method B-1011, available from Millipore Corporation.
 - B) Automated cadmium reduction.
 - i) USEPA Environmental Inorganic Methods, Method 353.2 (rev. 2.0);
 - ii) ASTM Method D3867-90 A; or
 - iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-NO₃⁻ F.
 - C) Manual cadmium reduction.
 - i) ASTM Method D3867-90 B; or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-NO₃⁻ E.

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- D) Spectrophotometric: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-NO₂⁻ B.
- E) Capillary ion electrophoresis: ASTM Method D6508-00(2005).
- F) Reduction-colorimetric: Systea Easy (1-Reagent).

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4110 B, 4500-NO₃⁻ E and F; and 4500-NO₂⁻ B as approved alternative methods for nitrite in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Systea Easy (1-Reagent) as an approved alternative method for nitrite in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 73 Fed. Reg. 38348). USEPA added Standard Methods, 22nd ed., Methods 4110 B, 4500-NO₃⁻ E and F, and 4500-NO₂⁻ B as approved alternative methods for nitrite in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added ASTM D4327-11 as an approved alternative method for nitrite in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

- 20) Orthophosphate (unfiltered, without digestion or hydrolysis).
 - A) Automated colorimetric, ascorbic acid.
 - i) USEPA Environmental Inorganic Methods, Method 365.1 (rev. 2.0); or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-P F.
 - B) Single reagent colorimetric, ascorbic acid.
 - i) ASTM Method D515-88 A; or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-P E.

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- C) Colorimetric, phosphomolybdate: USGS Methods, Method I-1601-85.
- D) Colorimetric, phosphomolybdate, automated-segmented flow: USGS Methods, Method I-2601-90.
- E) Colorimetric, phosphomolybdate, automated discrete: USGS Methods, Method I-2598-85.
- F) Ion Chromatography.
 - i) USEPA Environmental Inorganic Methods, Method 300.0 (rev. 2.1) or USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0);
 - ii) ASTM Method D4327-97, ~~or~~ D4327-03, or D4327-11; or
 - iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4110 B.
- G) Capillary ion electrophoresis: ASTM Method D6508-00(2005).

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4110 B and 4500-P E and F as approved alternative methods for orthophosphate in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). Because Standard Methods, 21st ed., Methods 4500-P E and F are the same versions as Standard Methods Online 4500-P E-99 and F-99, the Board has not listed the Standard Methods Online versions separately. USEPA added Standard Methods, 22nd ed., Methods 4500-P E and F and 4110 B as approved alternative methods for orthophosphate in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added ASTM D4327-11 as an approved alternative method for orthophosphate in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

21) pH: electrometric.

- A) USEPA Inorganic Methods, Method 150.1 or Method 150.2;

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- B) ASTM Method D1293-95, D1293-99, or D1293-12; or
- C) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-H⁺ B.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 4500-H⁺ B as an approved alternative method for pH in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Method 4500-H⁺ B and ASTM Method D1293-12 as approved alternative methods for pH in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

22) Selenium.

- A) Atomic absorption, hydride.
 - i) ASTM Method D3859-98 A, D3859-03 A, or D3859-08 A; or
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3114 B.
- B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
- C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
- D) Atomic absorption, furnace technique.
 - i) ASTM Method D3859-98 B, D3859-03 B, or D3859-08 B;
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - iii) Standard Methods Online, Method 3113 B-04.

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

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3113 B and 3114 B and USEPA NERL Method 200.5 as approved alternative methods for selenium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Methods D3859-08 A and B as approved alternative methods for selenium in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods Online, Method 3113 B-04 and Method 3114 B-09 as approved alternative methods for selenium in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3113 B and 3114 B as approved alternative methods for selenium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). Because Standard Methods, 22nd ed., Method 3114 B is the same version as Standard Methods Online 3114 B-09, the Board has not listed the Standard Methods Online version separately. USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for selenium in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 23) Silica.
- A) Colorimetric, molybdate blue: USGS Methods, Method I-1700-85.
- B) Colorimetric, molybdate blue, automated-segmented flow: USGS Methods, Method I-2700-85.
- C) Colorimetric: ASTM Method D859-94, D859-00, D859-05, or D859-10.
- D) Molybdosilicate: Standard Methods, 18th or 19th ed., Method 4500-Si D or Standard Methods, 20th, 21st, or 22nd ed., Method 4500-SiO₂ C.

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- E) Heteropoly blue: Standard Methods, 18th or 19th ed., Method 4500-Si E or Standard Methods, 20th, 21st, or 22nd ed., Method 4500-SiO₂ D.
- F) Automated method for molybdate-reactive silica: Standard Methods, 18th or 19th ed., Method 4500-Si F or Standard Methods, 20th, 21st, or 22nd ed., Method 4500-SiO₂ E.
- G) Inductively coupled plasma.
 - i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
- H) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added ASTM Method D859-05, Standard Methods, 21st ed.; Methods 3120 B and 4500-SiO₂ C, D, and E; and USEPA NERL Method 200.5 as approved alternative methods for silica in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D859-10 as an approved alternative method for silica in appendix A to subpart C of 40 CFR 141 on June 28, 2012 (at 77 Fed. Reg. 38523). USEPA added Standard Methods, 22nd ed., Methods 3120 B and 4500-SiO₂ C, D, and E as approved alternative methods for silica in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- 24) Sodium.
 - A) Inductively coupled plasma: USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4).
 - B) Atomic absorption, direct aspiration: Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3111 B.

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- C) Ion chromatography: ASTM Method D6919-03 or D6919-09.
- D) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 3113 B and USEPA NERL Method 200.5 as approved alternative methods for sodium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D6919-09 as an approved alternative method for sodium in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Method 3111 B as an approved alternative method for sodium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- 25) Temperature; thermometric: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 2550.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 2550 as an approved alternative method for temperature in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Method 2550 as an approved alternative method for temperature in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 2550-10 as an approved alternative method for temperature in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 2550 is the same version as Standard Methods Online, Method 2550-10, the Board has not listed the Standard Methods Online versions separately.

- 26) Thallium.

- A) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
- B) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).

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- b) Sample collection for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium pursuant to Sections 611.600 through 611.604 must be conducted using the following sample preservation, container, and maximum holding time procedures:

BOARD NOTE: For cyanide determinations samples must be adjusted with sodium hydroxide to pH 12 at the time of collection. When chilling is indicated the sample must be shipped and stored at 4° C or less. Acidification of nitrate or metals samples may be with a concentrated acid or a dilute (50% by volume) solution of the applicable concentrated acid. Acidification of samples for metals analysis is encouraged and allowed at the laboratory rather than at the time of sampling provided the shipping time and other instructions in Section 8.3 of USEPA Environmental Metals Method 200.7, 200.8, or 200.9 are followed.

- 1) Antimony.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 2) Arsenic.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 3) Asbestos.
 - A) Preservative: Cool to 4° C.

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- B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.
- 4) Barium.
- A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 5) Beryllium.
- A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 6) Cadmium.
- A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 7) Chromium.
- A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).

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- C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 8) Cyanide.
- A) Preservative: Cool to 4° C. Add sodium hydroxide to pH greater than 12. See the analytical methods for information on sample preservation.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
- 9) Fluoride.
- A) Preservative: None.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within one month.
- 10) Mercury.
- A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 28 days.
- 11) Nickel.
- A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).

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- C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 12) Nitrate, chlorinated.
- A) Preservative: Cool to 4° C.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
- 13) Nitrate, non-chlorinated.
- A) Preservative: Concentrated sulfuric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
- 14) Nitrite.
- A) Preservative: Cool to 4° C.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.
- 15) Selenium.
- A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

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- 16) Thallium.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

- c) Analyses under this Subpart N must be conducted by a certified laboratory in one of the categories listed in Section 611.490(a). The Agency must certify laboratories to conduct analyses for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium if the laboratory does as follows:
 - 1) It analyzes performance evaluation (PE) samples, provided by the Agency pursuant to 35 Ill. Adm. Code 186, that include those substances at levels not in excess of levels expected in drinking water; and
 - 2) It achieves quantitative results on the analyses within the following acceptance limits:
 - A) Antimony: $\pm 30\%$ at greater than or equal to 0.006 mg/l.
 - B) Arsenic: $\pm 30\%$ at greater than or equal to 0.003 mg/l.
 - C) Asbestos: 2 standard deviations based on study statistics.
 - D) Barium: $\pm 15\%$ at greater than or equal to 0.15 mg/l.
 - E) Beryllium: $\pm 15\%$ at greater than or equal to 0.001 mg/l.
 - F) Cadmium: $\pm 20\%$ at greater than or equal to 0.002 mg/l.
 - G) Chromium: $\pm 15\%$ at greater than or equal to 0.01 mg/l.
 - H) Cyanide: $\pm 25\%$ at greater than or equal to 0.1 mg/l.

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authorizes the state to determine compliance and initiate enforcement action. This statement maintains structural consistency with USEPA rules.

- b) If the result of an analysis made under subsection (a) of this Section indicates that the level of any contaminant listed in Section 611.300 exceeds the old MCL, the supplier must report to the Agency within seven days and initiate three additional analyses at the same sampling point within one month.
- c) When the average of four analyses made pursuant to subsection (b) of this Section, rounded to the same number of significant figures as the old MCL for the substance in question, exceeds the old MCL, the supplier must notify the Agency and give notice to the public pursuant to Subpart V of this Part. Monitoring after public notification must be at a frequency designated by the Agency by a SEP issued pursuant to Section 611.110 and must continue until the old MCL has not been exceeded in two successive samples or until a different monitoring schedule becomes effective as a condition to a variance, an adjusted standard, a site specific rule, an enforcement action, or another SEP issued pursuant to Section 611.110.
- d) This subsection (d) corresponds with 40 CFR 141.23(o), which pertains to monitoring for the repealed old MCL for nitrate. This statement maintains structural consistency with USEPA rules.
- e) This subsection (e) corresponds with 40 CFR 141.23(p), which pertains to the use of existing data up until a date long since expired. This statement maintains structural consistency with USEPA rules.
- f) Analyses conducted to determine compliance with the old MCLs of Section 611.300 must be made in accordance with the following methods, incorporated by reference in Section 611.102, or alternative methods approved by the Agency pursuant to Section 611.480.
 - 1) Fluoride: The methods specified in Section 611.611(c) must apply for the purposes of this Section.
 - 2) Iron.
 - A) Standard Methods.

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- i) Method 3111 B, 18th, 19th, 21st, or 22nd ed.;
 - ii) Method 3113 B, 18th, 19th, 21st, or 22nd ed.; or
 - iii) Method 3120 B, 18th, 19th, 20th, 21st, or 22nd ed.
- B) Standard Methods Online, Method 3113 B-04.
- C) USEPA Environmental Metals Methods.
- i) Method 200.7 (rev. 4.4); or
 - ii) Method 200.9 (rev. 2.2).
- D) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added USEPA NERL Method 200.5 as an approved alternative method in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 21st ed.; Methods 3111 B, 3113 B, and 3120 B and USEPA NERL Method 200.5 as approved alternative methods for iron in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for iron in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3111 D, 3113 B, and 3120 B as approved alternative methods for iron in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for iron in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 3) Manganese.
 - A) Standard Methods.

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- i) Method 3111 B, 18th, 19th, 21st, or 22nd ed.;
 - ii) Method 3113 B, 18th, 19th, 21st, or 22nd ed.; or
 - iii) Method 3120 B, 18th, 19th, 20th, 21st, or 22nd ed.
- B) Standard Methods Online, Method 3113 B-04.
- C) USEPA Environmental Metals Methods.
- i) Method 200.7 (rev. 4.4);
 - ii) Method 200.8 (rev. 5.3); or
 - iii) Method 200.9 (rev. 2.2).
- D) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed.; Methods 3111 B, 3113 B, and 3120 B and USEPA NERL Method 200.5 as approved alternative methods for manganese in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for manganese in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3111 D, 3113 B, and 3120 B as approved alternative methods for manganese in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for manganese in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.

- 4) Zinc.

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- A) Standard Methods.
 - i) Method 3111 B, 18th, 19th, 21st, or 22nd ed.; or
 - ii) Method 3120 B, 18th, 19th, 20th, 21st, or 22nd ed.
- B) USEPA Environmental Metals Methods.
 - i) Method 200.7 (rev. 4.4); or
 - ii) Method 200.8 (rev. 5.3).
- C) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed.; Methods 3111 B and 3120 B and USEPA NERL Method 200.5 as approved alternative methods for zinc in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Methods 3111 B and 3120 B as approved alternative methods for zinc in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463).

BOARD NOTE: The provisions of subsections (a) through (e) of this Section derive from 40 CFR 141.23(l) through (p) ~~(2013)~~ (2014). Subsections (f)(2) through (f)(4) of this Section relate exclusively to additional State requirements. The Board retained subsection (f) of this Section to set forth methods for the inorganic contaminants for which there is a State-only MCL. The methods specified are those set forth in 40 CFR 143.4(b) and appendix A to subpart C of 40 CFR 141 ~~(2013)~~ (2014), for secondary MCLs.

(Source: Amended at 39 Ill. Reg. ———, effective ———)

SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.645 Analytical Methods for Organic Chemical Contaminants

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Analysis for the Section 611.311(a) VOCs under Section 611.646; the Section 611.311(c) SOCs under Section 611.648; the Section 611.310 old MCLs under Section 611.641; and for THMs, TTHMs, and TTHM potential must be conducted using the methods listed in this Section. All methods are incorporated by reference in Section 611.102. Other required analytical test procedures germane to the conduct of these analyses are contained in the USEPA document, "Technical Notes of Drinking Water Methods," incorporated by reference in Section 611.102.

a) Volatile Organic Chemical Contaminants (VOCs).

Contaminant	Analytical Methods
Benzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Method 524.3 (rev. 1.0)
Carbon tetrachloride	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0), 524.4, and 551.1 (rev. 1.0)
Chlorobenzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
1,2-Dichlorobenzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
1,4-Dichlorobenzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
1,2-Dichloroethane	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
1,1-Dichloroethylene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1);

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cis-Dichloroethylene	USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4 USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods,
trans-Dichloroethylene	Methods 524.3 (rev. 1.0) and 524.4 USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods,
Dichloromethane	Methods 524.3 (rev. 1.0) and 524.4 USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods,
1,2-Dichloropropane	Methods 524.3 (rev. 1.0) and 524.4 USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods,
Ethylbenzene	Methods 524.3 (rev. 1.0) and 524.4 USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods,
Styrene	Methods 524.3 (rev. 1.0) and 524.4 USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods,
Tetrachloroethylene	Methods 524.3 (rev. 1.0) and 524.4 USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods,
Toluene	Methods 524.3 (rev. 1.0), 524.4, and 551.1 (rev. 1.0) USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods,
1,1,1-Trichloroethane	Methods 524.3 (rev. 1.0) and 524.4 USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods,

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Trichloroethylene	Methods 524.3 (rev. 1.0), 524.4, and 551.1 (rev. 1.0) USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0), 524.4, and 551.1 (rev. 1.0)
Toluene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Method Methods 524.3 (rev. 1.0)
1,2,4-Trichlorobenzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
1,1,2-Trichloroethane	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
Vinyl chloride	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
Xylenes (total)	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4

BOARD NOTE: USEPA added USEPA OGWDW Method 524.3 (rev. 1.0) as an alternative method for all of the VOCs in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA added USEPA OGWDW Method 524.4 as an approved alternative method for all of the VOCs in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

b) Synthetic Organic Chemical Contaminants (SOCs).

Contaminant

Analytical Methods

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2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD or dioxin)	Dioxin and Furan Method 1613 (rev. B)
2,4-D	USEPA Organic Methods, Methods 515.2 (rev. 1.1), 555 (rev. 1.0), and 515.1 (rev. 4.0); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Method 515.4 (rev. 1.0); ASTM Method D5317-93 or D5317-98 (2003); Standard Methods, 21 st or 22 nd ed., Method 6640 B
2,4,5-TP (Silvex)	USEPA Organic Methods, Methods 515.2 (rev. 1.1), 555 (rev. 1.0), and 515.1 (rev. 4.0); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Method 515.4 (rev. 1.0); ASTM Method D5317-93 or D5317-98 (2003); Standard Methods, 21 st or 22 nd ed., Method 6640 B
Alachlor	USEPA Organic Methods, Methods 505 (rev. 2.1) ¹ , 507 (rev. 2.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (rev. 1.0), and 551.1 (rev. 1.0)
Atrazine	USEPA Organic Methods, Methods 505 (rev. 2.1) ¹ , 507 (rev. 2.1), 508.1 (rev. 2.1), 523 (rev. 1.0), 525.2 (rev. 2.0), 525.3 (rev. 1.0), 536 (rev. 1.0), and 551.1 (rev. 1.0); Syngenta AG-625 ²
Benzo(a)pyrene	USEPA Organic Methods, Methods 525.2 (rev. 2.0), 525.3 (rev. 1.0), 550, and 550.1
Carbofuran	USEPA Organic Methods, Methods

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	531.1 (rev. 3.1); USEPA OGWDW Methods, Method 531.2 (rev. 1.0); Standard Methods, 18 th ed. Supplement, 19 th ed., or 20 th ed., Method 6610; Standard Methods, 21 st or 22 nd ed., Method 6610 B
Chlordane	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.1), 525.2 (rev. 2.0), and 525.3 (ver. 1.0)
Dalapon	USEPA Organic Methods, Methods 515.1 (rev. 4.0), 552.1 (rev. 1.0), and 552.2 (rev. 1.0); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Methods 515.4 (rev. 1.0), 552.3 (rev. 1.0), and 557; Standard Methods, 21 st or 22 nd ed., Method 6640 B
Di(2-ethylhexyl)adipate	USEPA Organic Methods, Methods 506 (rev. 1.1), 525.2 (rev. 2.0), and 525.3 (ver. 1.0)
Di(2-ethylhexyl)phthalate	USEPA Organic Methods, Methods 506 (rev. 1.1), 525.2 (rev. 2.0), and 525.3 (ver. 1.0)
Dibromochloropropane (DBCP)	USEPA Organic Methods, Methods 504.1 (rev. 1.1), USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 551.1 (rev. 1.0)
Dinoseb	USEPA Organic Methods, Methods 515.1 (rev. 4.0) and 515.2 (rev. 1.1); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Methods 515.4 (rev. 1.0) and 555

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	(rev. 1.0); Standard Methods, 21 st or 22 nd ed., Method 6640 B
Diquat	USEPA NERL Method 549.2 (rev. 1.0)
Endothall	USEPA Organic Methods, Method 548.1 (rev. 1.0)
Endrin	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Ethylene dibromide (EDB)	USEPA Organic Methods, Method 504.1 (rev. 1.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 551.1 (rev. 1.0)
Glyphosate	USEPA Organic Methods, Method 547; Standard Methods, 18 th ed., 19 th ed., 20 th , 21 st , or 22 nd ed., Method 6651 B
Heptachlor	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Heptachlor Epoxide	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Hexachlorobenzene	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Hexachlorocyclopentadiene	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Lindane	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1

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Methoxychlor	(rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0) USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Oxamyl	USEPA Organic Methods, Method 531.1 (rev. 3.1); USEPA OGWDW Methods, Method 531.2 (rev. 1.0); Standard Methods, 18 th ed. Supplement, 19 th ed., or 20 th ed., Method 6610; Standard Methods, 21 st or 22 nd ed., Method 6610 B
PCBs (measured for compliance purposes as decachlorobiphenyl)	USEPA Organic Methods, Method 508A (rev. 1.0)
PCBs (qualitatively identified as Aroclors)	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), and 525.3 (ver. 1.0)
Pentachlorophenol	USEPA Organic Methods, Methods 515.1 (rev. 4.0), 515.2 (rev. 1.1), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 555 (rev. 1.0); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Method 515.4 (rev. 1.0); ASTM Method D5317-93 or D5317-98 (2003); Standard Methods, 21 st or 22 nd ed., Method 6640 B
Picloram	USEPA Organic Methods, Methods 515.1 (rev. 4.0), 515.2 (rev. 1.1), and 555 (rev. 1.0); USEPA Organic and Inorganic

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	Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Method 515.4 (rev. 1.0); ASTM Method D5317-93 or D5317-98 (2003); Standard Methods, 21 st or 22 nd ed., Method 6640 B
Simazine	USEPA Organic Methods, Methods 505 (rev. 2.1) ¹ , 507 (rev. 2.1), 508.1 (rev. 2.0), 523 (ver. 1.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), 536 (ver. 1.0), and 551.1 (rev. 1.0)
Toxaphene	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 2.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), and 525.3 (ver. 1.0)

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 6610 B and Standard Methods Online, Method 6610 B-04 as approved alternative methods for carbofuran and oxamyl on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added USEPA OGWDW Method 524.3 (rev. 1.0) as an alternative method for dibromochloropropane and ethylene dibromide in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA approved Standard Methods, 21st ed., Method 6640 B and Standard Methods Online, Method 6640 B-01 and USEPA OGWDW Methods, Method 557 as approved alternative methods for dalapon in appendix A to subpart C of 40 CFR 141 on June 8, 2010 (at 75 Fed. Reg. 32295). USEPA added Standard Methods, 21st ed., Method 6640 B as an approved alternative method for 2,4-D, 2,4,5-TP (Silvex), dinoseb, pentachlorophenol, and picloram in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, Online, Method 6640 B-01 as an approved alternative method for 2,4-D, 2,4,5-TP (Silvex), dalapon, dinoseb, pentachlorophenol, and picloram and in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). Since the version of Method 6640 B that appears in Standard Methods Online is the same as that which appears in Standard Methods, 21st ed., the Board has cited only to Standard Methods, 21st ed. USEPA added Standard Methods, 21st ed., Method 6651 B as an approved alternative method for glyphosate in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added

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Standard Methods Online, Method 6651 B-00 as an approved alternative method for glyphosate in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). Since the version of Method 6651 B that appears in Standard Methods Online is the same as that which appears in Standard Methods, 21st ed., the Board has cited only to Standard Methods, 21st ed. USEPA approved USEPA OGWDW Methods, Method 523 (ver. 1.0) and Method 536 (ver. 1.0) as approved alternative methods for atrazine and simazine and USEPA NERL Methods, Method 525.3 as an approved alternative method for alachlor, atrazine, benzo(a)pyrene, chlordane, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate, endrin, heptachlor, heptachlor epoxide, hexachlorobenzene, hexachlorocyclopentadiene, lindane, methoxychlor, PCBs (as ~~areolers~~), ~~pentachlorophenol~~ arachlors, pentachlorophenyl, simazine, and toxaphene in appendix A to subpart C of 40 CFR 141 on June 8, 2012 (at 77 Fed. Reg. 38523). USEPA added Standard Methods, 22nd ed., Method 6610 B and Standard Methods Online, Method 6610 B-04 as an approved alternative method for carbofuran and oxamyl; Standard Methods, 22nd ed., Method 6640 B and Standard Methods Online, Method 6640 B-01 as an approved method for 2,4-D, 2,4,5-TP (silvex), dalapon, dinoseb, pentachlorophenol, and picloram; and Standard Methods, 22nd ed., Method 6651 B for glyphosate in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). Because Standard Methods, 22nd ed., Methods 6610 B and 6640 B-01 are the same versions as Standard Methods Online 6610 B-04 and 6640 B-01, the Board has not listed the Standard Methods Online versions separately. USEPA added Standard Methods Online, Method 6640 B-06 as an approved alternative method for 2,4-D, 2,4,5-TP (silvex), dalapon, dinoseb, pentachlorophenol, and picloram and Method 6651 B-05 for glyphosate in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Methods 6640 B and 6651 B are the same versions as Standard Methods Online, Methods 6640 B-06 and 6651 B-05, the Board has not listed the Standard Methods Online versions separately.

c) Total Trihalomethanes (TTHMs).

Contaminant	Analytical Methods
Total Trihalomethanes (TTHMs), Trihalomethanes (THMs), and Maximum Total Trihalomethane Potential	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1);

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USEPA OGWDW
Methods, Methods 524.3
(rev. 1.0), 524.4, and
551.1 (rev. 1.0)

BOARD NOTE: USEPA added USEPA OGWDW Method 524.3 (rev. 1.0) as an alternative method for total trihalomethane in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA added USEPA OGWDW Method 524.4 as an approved alternative method for total trihalomethanes in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- d) State-Only MCLs (for which a method is not listed in subsections (a) through (c) of this Section).

Contaminant	Analytical Methods
Aldrin	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), and 525.2 (rev. 2.0)
DDT	USEPA Organic Methods, Methods 505 (rev. 2.1) and 508 (rev. 3.1)
Dieldrin	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), and 525.2 (rev. 2.0)

- e) The following footnotes are appended to method entries in subsections (a) and (b) of this Section:

¹ denotes that, for the particular contaminant, a nitrogen-phosphorus detector should be substituted for the electron capture detector in method 505 (or another approved method should be used) to determine alachlor, atrazine, and simazine if lower detection limits are required.

² denotes that Syngenta Method AG-625 may not be used for the analysis of atrazine in any system where chlorine dioxide is used for drinking water treatment. In samples from all other systems, any result for atrazine generated by Syngenta Method AG-625 that is greater than one-half the maximum

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contaminant level (MCL) (in other words, greater than 0.0015 mg/l or 1.5 µg/l) must be confirmed using another approved method for this contaminant and should use additional volume of the original sample collected for compliance monitoring. In instances where a result from Syngenta Method AG-625 triggers such confirmatory testing, the confirmatory result is to be used to determine compliance.

BOARD NOTE: Derived from 40 CFR 141.24(e) and appendix A to subpart C of 40 CFR 141 (~~2013~~)(2014).

(Source: Amended at 39 Ill. Reg. ———, effective ———)

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

Section 611.742 Disinfection Profiling and Benchmarking

- a) Determination of a supplier required to profile. A PWS supplier subject to the requirements of this Subpart R must determine its TTHM annual average using the procedure in subsection (a)(1) of this Section and its HAA5 annual average using the procedure in subsection (a)(2) of this Section. The annual average is the arithmetic average of the quarterly averages of four consecutive quarters of monitoring.
 - 1) The TTHM annual average that is used must be the annual average during the same period as the HAA5 annual average.
 - A) A supplier that collected data under the provisions of 40 CFR 141 Subpart M (Information Collection Rule) must use the results of the samples collected during the last four quarters of required monitoring under former 40 CFR 141.42 (1995).
 - B) A supplier that uses "grandfathered" HAA5 occurrence data that meet the provisions of subsection (a)(2)(B) of this Section must use TTHM data collected at the same time under the provisions of former Section 611.680.

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- C) A supplier that uses HAA5 occurrence data that meet the provisions of subsection (a)(2)(C)(i) of this Section must use TTHM data collected at the same time under the provisions of ~~Sections~~ Section 611.310 and former Section 611.680.
- 2) The HAA5 annual average that is used must be the annual average during the same period as the TTHM annual average.
- A) A supplier that collected data under the provisions of 40 CFR 141 Subpart M (Information Collection Rule) must use the results of the samples collected during the last four quarters of required monitoring under former 40 CFR 141.42 (1995).
 - B) A supplier that has collected four quarters of HAA5 occurrence data that meets the routine monitoring sample number and location requirements for TTHM in former Section 611.680 and handling and analytical method requirements of former Section 611.685 may use that data to determine whether the requirements of this Section apply.
 - C) A supplier that had not collected four quarters of HAA5 occurrence data that meets the provisions of either subsection (a)(2)(A) or (a)(2)(B) of this Section by March 31, 1999 must do either of the following:
 - i) Conduct monitoring for HAA5 that meets the routine monitoring sample number and location requirements for TTHM in former Section 611.680 and handling and analytical method requirements of former Section 611.685 to determine the HAA5 annual average and whether the requirements of subsection (b) of this Section apply; or
 - ii) Comply with all other provisions of this Section as if the HAA5 monitoring had been conducted and the results required compliance with subsection (b) of this Section.
- 3) The supplier may request that the Agency approve a more representative annual data set than the data set determined under subsection (a)(1) or

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(a)(2) of this Section for the purpose of determining applicability of the requirements of this Section.

- 4) The Agency may require that a supplier use a more representative annual data set than the data set determined under subsection (a)(1) or (a)(2) of this Section for the purpose of determining the applicability of the requirements of this Section.
- 5) The supplier must submit data to the Agency on the schedule in subsections (a)(5)(A) through (a)(5)(E) of this Section.
 - A) A supplier that collected TTHM and HAA5 data under the provisions of 40 CFR Subpart M (Information Collection Rule), as required by subsections (a)(1)(A) and (a)(2)(A) of this Section, must have submitted the results of the samples collected during the last 12 months of required monitoring under former Section 611.685 not later than December 31, 1999.
 - B) A supplier that had collected four consecutive quarters of HAA5 occurrence data that meets the routine monitoring sample number and location for TTHM in former 40 CFR 141.42 (1994), and handling and analytical method requirements of former Section 611.685, as allowed by subsections (a)(1)(B) and (a)(2)(B) of this Section, must have submitted that data to the Agency not later than April 30, 1999. Until the Agency has approved the data, the supplier must conduct monitoring for HAA5 using the monitoring requirements specified under subsection (a)(2)(C) of this Section.
 - C) A supplier that conducted monitoring for HAA5 using the monitoring requirements specified by subsections (a)(1)(C) and (a)(2)(C)(i) of this Section must have submitted TTHM and HAA5 data not later than March 31, 2000.
 - D) A supplier that elected to comply with all other provisions of this Section as if the HAA5 monitoring had been conducted and the results required compliance with this Section, as allowed under subsection (a)(2)(C)(ii) of this Section, must have notified the Agency in writing of its election not later than December 31, 1999.

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- E) If the supplier elected to request that the Agency approve a more representative data set than the data set determined under subsection (a)(2)(A) of this Section, the supplier must have submitted this request in writing not later than December 31, 1999.
- 6) Any supplier ~~having~~ that had either a TTHM annual average \geq (greater than or equal to) 0.064 mg/l or an HAA5 annual average \geq 0.048 mg/l during the period identified in subsections (a)(1) and (a)(2) of this Section must comply with subsection (b) of this Section.

BOARD NOTE: Former Sections 611.680 and 611.685 originally derived from 40 CFR 141.30(a), (b), and (e). USEPA removed 40 CFR 141.30 in its entirety in 2006. The Board repealed former Section 611.685 in 2007 and Section 611.680 in 2012. The references to former Sections 611.680 and 611.685 in this subsection (a) relate to use of existing monitoring data collected under those provisions as they existed before their repeal.

- b) Disinfection profiling.
- 1) Any supplier that meets the standards in subsection (a)(6) of this Section must ~~develop~~ have developed a disinfection profile of its disinfection practice for a period of up to three years. The Agency must ~~determine~~ have determined the period of the disinfection profile, with a minimum period of one year.
- 2) The supplier ~~must monitor~~ must have monitored daily for a period of 12 consecutive calendar months to determine the total logs of inactivation for each day of operation, based on the CT_{99.9} values in Appendix B of this Part, as appropriate, through the entire treatment plant. The supplier must have begun this monitoring not later than April 1, 2000. As a minimum, the supplier with a single point of disinfectant application prior to entrance to the distribution system must ~~conduct~~ have conducted the monitoring in subsections (b)(2)(A) through (b)(2)(D) of this Section. A supplier with more than one point of disinfectant application must ~~conduct~~ have conducted the monitoring in subsections (b)(2)(A) through (b)(2)(D) of this Section for each disinfection segment. The supplier must ~~monitor~~ have monitored the parameters necessary to determine the total

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inactivation ratio, using analytical methods in Section 611.531, as follows:

- A) The temperature of the disinfected water must ~~be~~ have been measured once per day at each residual disinfectant concentration sampling point during peak hourly flow.
 - B) If the supplier uses chlorine, the pH of the disinfected water must ~~be~~ have been measured once per day at each chlorine residual disinfectant concentration sampling point during peak hourly flow.
 - C) The disinfectant contact times ("T") must ~~be~~ have been determined for each day during peak hourly flow.
 - D) The residual disinfectant concentrations ("C") of the water before or at the first customer and prior to each additional point of disinfection must ~~be~~ have been measured each day during peak hourly flow.
- 3) In lieu of the monitoring conducted under the provisions of subsection (b)(2) of this Section to develop the disinfection profile, the supplier may ~~elect~~ have elected to meet the requirements of subsection (b)(3)(A) of this Section. In addition to the monitoring conducted under the provisions of subsection (b)(2) of this Section to develop the disinfection profile, the supplier may ~~elect~~ have elected to meet the requirements of subsection (b)(3)(B) of this Section.
- A) A PWS supplier that had three years of existing operational data may have submitted that data, a profile generated using that data, and a request that the Agency approve use of that data in lieu of monitoring under the provisions of subsection (b)(2) of this Section not later than March 31, 2000. The Agency must ~~determine~~ have determined whether the operational data is substantially equivalent to data collected under the provisions of subsection (b)(2) of this Section. The data must also ~~be~~ have been representative of Giardia lamblia inactivation through the entire treatment plant and not just of certain treatment segments. If the Agency ~~determines-~~ determined that the operational data ~~is-~~ was substantially equivalent, the Agency must ~~approve~~ have approved the request.

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Until the Agency ~~approves~~-approved this request, the system ~~is~~-was required to conduct monitoring under the provisions of subsection (b)(2) of this Section.

- B) In addition to the disinfection profile generated under subsection (b)(2) of this Section, a PWS supplier that ~~has~~ had existing operational data may ~~use~~-have used that data to develop a disinfection profile for additional years. The Agency must ~~determine~~-have determined whether the operational data ~~is~~-was substantially equivalent to data collected under the provisions of subsection (b)(2) of this Section. The data must also ~~be~~-have been representative of inactivation through the entire treatment plant and not just of certain treatment segments. If the Agency ~~determines~~-determined that the operational data ~~is~~ was substantially equivalent, ~~such~~the systems may ~~use~~-have used these additional yearly disinfection profiles to develop a benchmark under the provisions of subsection (c) of this Section.

- 4) The supplier must calculate the total inactivation ratio as follows:
- A) If the supplier uses only one point of disinfectant application, the system may determine the total inactivation ratio for the disinfection segment based on either of the methods in subsection (b)(4)(A)(i) or (b)(4)(A)(ii) of this Section.
- i) Determine one inactivation ratio ($CT_{\text{calc}}/CT_{99.9}$) before or at the first customer during peak hourly flow.
- ii) Determine successive $CT_{\text{calc}}/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the supplier must calculate the total inactivation ratio ($\sum (CT_{\text{calc}}/CT_{99.9})$) by determining $CT_{\text{calc}}/CT_{99.9}$ for each sequence and then adding the $CT_{\text{calc}}/CT_{99.9}$ values together to determine $\sum (CT_{\text{calc}}/CT_{99.9})$.
- B) If the supplier uses more than one point of disinfectant application

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before the first customer, the system must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The $(CT_{calc}/CT_{99.9})$ value of each segment and $(\sum(CT_{calc}/CT_{99.9}))$ must be calculated using the method in subsection (b)(4)(A) of this Section.

- C) The supplier must determine the total logs of inactivation by multiplying the value calculated in subsection (b)(4)(A) or (b)(4)(B) of this Section by 3.0.
 - 5) A supplier that uses either chloramines or ozone for primary disinfection must also calculate the logs of inactivation for viruses using a method approved by the Agency.
 - 6) The supplier must retain disinfection profile data in graphic form, as a spreadsheet, or in some other format acceptable to the Agency for review as part of sanitary surveys conducted by the Agency.
- c) Disinfection benchmarking.
- 1) Any supplier required to develop a disinfection profile under the provisions of subsections (a) and (b) of this Section and that decides to make a significant change to its disinfection practice must consult with the Agency prior to making such change. Significant changes to disinfection practice are the following:
 - A) Changes to the point of disinfection;
 - B) Changes to the disinfectants used in the treatment plant;
 - C) Changes to the disinfection process; and
 - D) Any other modification identified by the Agency.
 - 2) Any supplier that is modifying its disinfection practice must calculate its disinfection benchmark using the procedure specified in subsections (c)(2)(A) and (c)(2)(B) of this Section.

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- A) For each year of profiling data collected and calculated under subsection (b) of this Section, the supplier must determine the lowest average monthly Giardia lamblia inactivation in each year of profiling data. The supplier must determine the average Giardia lamblia inactivation for each calendar month for each year of profiling data by dividing the sum of daily Giardia lamblia of inactivation by the number of values calculated for that month.
- B) The disinfection benchmark is the lowest monthly average value (for systems with one year of profiling data) or average of lowest monthly average values (for systems with more than one year of profiling data) of the monthly logs of Giardia lamblia inactivation in each year of profiling data.
- 3) A supplier that uses either chloramines or ozone for primary disinfection must also calculate the disinfection benchmark for viruses using a method approved by the Agency.
- 4) The supplier must submit information in subsections (c)(4)(A) through (c)(4)(C) of this Section to the Agency as part of its consultation process.
 - A) A description of the proposed change;
 - B) The disinfection profile for Giardia lamblia (and, if necessary, viruses) under subsection (b) of this Section and benchmark as required by subsection (c)(2) of this Section; and
 - C) An analysis of how the proposed change will affect the current levels of disinfection.

BOARD NOTE: Derived from 40 CFR 141.172 (~~2003~~)(2014).

(Source: Amended at 39 Ill. Reg. ———, effective ———)

SUBPART S: GROUNDWATER RULE

Section 611.802 Groundwater Source Microbial Monitoring and Analytical Methods

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- a) Triggered source water monitoring.
 - 1) General requirements. A GWS supplier must conduct triggered source water monitoring if the conditions in either subsections (a)(1)(A) and (a)(1)(B) or (a)(1)(A) and (a)(1)(C) of this Section exist.
 - A) The supplier does not provide at least 4-log treatment of viruses (using inactivation, removal, or an Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for each groundwater source.
 - B) Until March 31, 2016, the supplier is notified that a sample collected pursuant to Section 611.521 is total coliform-positive, and the sample is not invalidated by the Agency pursuant to Section 611.523.
 - C) Beginning April 1, 2016, the system is notified that a sample collected under Sections 611.1054 through 611.1057 is total coliform-positive and the sample is not invalidated under Section 611.1053(c).
 - 2) Sampling requirements. A GWS supplier must collect, within 24 hours after notification of the total coliform-positive sample, at least one groundwater source sample from each groundwater source in use at the time the total coliform-positive sample was collected pursuant to Section 611.521 until March 31, 2016, or collected pursuant to Sections 611.1054 through 611.1057 beginning April 1, 2016, except as provided in subsection (a)(2)(B) of this Section.
 - A) The Agency may, by a SEP issued pursuant to Section 611.110, extend the 24-hour time limit on a case-by-case basis if it determines that the supplier cannot collect the groundwater source water sample within 24 hours due to circumstances beyond the supplier's control. In the case of an extension, the Agency must specify how much time the supplier has to collect the sample.

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- B) If approved by the Agency, a supplier with more than one groundwater source may meet the requirements of this subsection (a)(2) by sampling a representative groundwater source or sources. If directed by the Agency by a SEP issued pursuant to Section 611.110, the supplier must submit for Agency approval a triggered source water monitoring plan that identifies one or more groundwater sources that are representative of each monitoring site in the system's sample siting plan pursuant to Section 611.521 and that the system intends to use for representative sampling pursuant to this subsection (a).
 - C) Until March 31, 2016, a GWS supplier that serves 1,000 or fewer people may use a repeat sample collected from a groundwater source to meet both the requirements of Section 611.522 and to satisfy the monitoring requirements of subsection (a)(2) of this Section for that groundwater source only if the Agency approves the use of E. coli as a fecal indicator for source water monitoring pursuant to this subsection (a) by a SEP issued pursuant to Section 611.110. If the repeat sample collected from the groundwater source is E.coli positive, the system must comply with subsection (a)(3) of this Section.
 - D) Beginning April 1, 2016, a GWS supplier that serves 1,000 or fewer people may use a repeat sample collected from a ~~ground-water~~groundwater source to meet both the requirements of Subpart AA of this Part and to satisfy the monitoring requirements of subsection (a)(2) of this Section for that groundwater source only if the Agency, by a SEP issued pursuant to Section 611.110, approves the use of E. coli as a fecal indicator for source water monitoring pursuant to this subsection (a) and approves the use of a single sample for meeting both the triggered source water monitoring requirements in this subsection (a) and the repeat monitoring requirements in Section 611.1058. If the repeat sample collected from the groundwater source is E. coli-positive, the system must comply with subsection (a)(3) of this Section.
- 3) Additional requirements. If the Agency does not require corrective action pursuant to Section 611.803(a)(2) for a fecal indicator-positive source

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water sample collected pursuant to subsection (a)(2) of this Section that is not invalidated pursuant to subsection (d) of this Section, the system must collect five additional source water samples from the same source within 24 hours after being notified of the fecal indicator-positive sample.

- 4) Consecutive and wholesale systems.
 - A) In addition to the other requirements of this subsection (a), a consecutive GWS supplier that has a total coliform-positive sample collected pursuant to Section 611.521 until March 31, 2016, or pursuant to Sections 611.1054 through 611.1057 beginning April 1, 2016, must notify the wholesale systems within 24 hours after being notified of the total coliform-positive sample.
 - B) In addition to the other requirements of this subsection (a), a wholesale GWS supplier must comply with the following requirements:
 - i) A wholesale GWS supplier that receives notice from a consecutive system it serves that a sample collected pursuant to Section 611.521 until March 31, 2016, or collected pursuant to Sections 611.1054 through 611.1057 beginning April 1, 2016, is total coliform-positive must, within 24 hours after being notified, collect a sample from its groundwater sources pursuant to subsection (a)(2) of this Section and analyze it for a fecal indicator pursuant to subsection (c) of this Section.
 - ii) If the sample collected pursuant to subsection (a)(4)(B)(i) of this section is fecal indicator-positive, the wholesale GWS supplier must notify all consecutive systems served by that groundwater source of the fecal indicator source water positive within 24 hours of being notified of the groundwater source sample monitoring result and must meet the requirements of subsection (a)(3) of this Section.
- 5) Exceptions to the triggered source water monitoring requirements. A GWS supplier is not required to comply with the source water monitoring

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requirements of subsection (a) of this Section if either of the following conditions exists:

- A) The Agency determines, and documents in writing, by a SEP issued pursuant to Section 611.110, that the total coliform-positive sample collected pursuant to Section 611.521 until March 31, 2016, or collected pursuant to Sections 611.1054 through 611.1057 beginning April 1, 2016, is caused by a distribution system deficiency; or
 - B) The total coliform-positive sample collected pursuant to Section 611.521 until March 31, 2016, or collected pursuant to Sections 611.1054 through 611.1057 beginning April 1, 2016, is collected at a location that meets Agency criteria for distribution system conditions that will cause total coliform-positive samples.
- b) Assessment source water monitoring. If directed by the Agency by a SEP issued pursuant to Section 611.110, a GWS supplier must conduct assessment source water monitoring that meets Agency-determined requirements for such monitoring. A GWS supplier conducting assessment source water monitoring may use a triggered source water sample collected pursuant to subsection (a)(2) of this Section to meet the requirements of subsection (b) of this Section. Agency-determined assessment source water monitoring requirements may include the following:
- 1) Collection of a total of 12 groundwater source samples that represent each month the system provides groundwater to the public;
 - 2) Collection of samples from each well, unless the system obtains written Agency approval to conduct monitoring at one or more wells within the GWS that are representative of multiple wells used by that system and which draw water from the same hydrogeologic setting;
 - 3) Collection of a standard sample volume of at least 100 mL for fecal indicator analysis, regardless of the fecal indicator or analytical method used;

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- 4) Analysis of all groundwater source samples using one of the analytical methods listed in subsection (c)(2) of this Section for the presence of E. coli, enterococci, or coliphage;
 - 5) Collection of groundwater source samples at a location prior to any treatment of the groundwater source unless the Agency approves a sampling location after treatment; and
 - 6) Collection of groundwater source samples at the well itself, unless the system's configuration does not allow for sampling at the well itself and the Agency approves an alternate sampling location by a SEP issued pursuant to Section 611.110 that is representative of the water quality of that well.
- c) Analytical methods.
- 1) A GWS supplier subject to the source water monitoring requirements of subsection (a) of this Section must collect a standard sample volume of at least 100 ml for fecal indicator analysis, regardless of the fecal indicator or analytical method used.
 - 2) A GWS supplier must analyze all groundwater source samples collected pursuant to subsection (a) of this Section using one of the analytical methods listed in subsections (c)(2)(A) through (c)(2)(C) of this Section, each incorporated by reference in Section 611.102, or alternative methods approved by the Agency pursuant to Section 611.480, subject to the limitations of subsection (c)(2)(D) of this Section, for the presence of E. coli, enterococci, or coliphage:
 - A) E. coli:
 - i) ~~Autoanalysis~~-Colilert® Test ~~System~~, Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B.
 - ii) ~~Colisure~~TM ~~Colisure~~TM Test, Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B.

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- iii) Membrane Filter Method with MI Agar, USEPA Method 1604.
- iv) m-ColiBlue24 Test.
- v) E*Colite Test.
- vi) EC—MUG, Standard Methods, 20th or 22nd ed., Method 9221 F.
- vii) NA—MUG, Standard Methods, 20th ed., Method 9222 G.
- viii) Colilert-18® Test, Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B.
- ix) Readycult® 2007.
- x) Modified Colitag™ Method.
- xi) Chromocult® Method.
- xii) Tecta EC/TC P-A Test.

BOARD NOTE: EC—MUG (Standard Methods, Method 9221F) or NA—MUG (Standard Methods, Method 9222G) can be used for E. coli testing step, as described in Section 611.526(f)(1) or (f)(2) after use of Standard Methods, 18th, 19th, 20th, or 21st ed., Method 9221 B, 9221 D, 9222 B, or 9222 C. USEPA added Standard Methods, 21st ed., Method 9223 B as an approved alternative method for E. coli on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Readycult® 2007, Modified Colitag™ Method, and Chromocult® Method as approved alternative methods for E. coli on June 8, 2010 (at 75 Fed. Reg. 32295). USEPA added Standard Methods, 22nd ed., Methods 9221 F and 9223 B as approved alternative methods for E. coli in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 9221 F-06 and 9223 B-04 and Tecta EC/TC P-A Test as approved alternative methods for E. coli

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in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Methods 9223 B and 9221 F are the same versions as Standard Methods Online, ~~Method~~ Methods 9223 B-04 and 9221 F-06, the Board has not listed the Standard Methods Online versions separately.

B) Enterococci:

- i) Multiple-Tube Technique, Standard Methods, 20th ed., Method 9230 B or Standard Methods Online, Method 9230 B-04.
- ii) Membrane Filter Technique, Standard Methods, 20th ed., Method 9230 C, and USEPA Method 1600.

BOARD NOTE: The holding time and temperature for groundwater samples are specified in subsection (c)(2)(D) of this Section, rather than as specified in Section 8 of USEPA Method 1600.

iii) Enterolert.

BOARD NOTE: Medium is available through IDEXX Laboratories, Inc., at the address set forth in Section 611.102(b). Preparation and use of the medium must be as set forth in the article that embodies the method as incorporated by reference in Section 611.102(b).

BOARD NOTE: USEPA added Standard Methods Online, Method 9230 B-04 as an approved alternative method for enterococci on June 3, 2008 (at 73 Fed. Reg. 31616).

C) Coliphage:

- i) Two-Step Enrichment Presence-Absence Procedure, USEPA Method 1601 or Charm Fast Phage.
- ii) Single Agar Layer Procedure, USEPA Method 1602.

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- D) Limitation on methods use. The time from sample collection to initiation of analysis may not exceed 30 hours. The GWS supplier is encouraged but is not required to hold samples below 10°C during transit.
- d) Invalidation of a fecal indicator-positive groundwater source sample.
- 1) A GWS supplier may obtain Agency invalidation of a fecal indicator-positive groundwater source sample collected pursuant to subsection (a) of this Section only under either of the following conditions:
 - A) The supplier provides the Agency with written notice from the laboratory that improper sample analysis occurred; or
 - B) The Agency determines and documents in writing by a SEP issued pursuant to Section 611.110 that there is substantial evidence that a fecal indicator-positive groundwater source sample is not related to source water quality.
 - 2) If the Agency invalidates a fecal indicator-positive groundwater source sample, the GWS supplier must collect another source water sample pursuant to subsection (a) of this Section within 24 hours after being notified by the Agency of its invalidation decision, and the supplier must have it analyzed for the same fecal indicator using the analytical methods in subsection (c) of this Section. The Agency may extend the 24-hour time limit on a case-by-case basis if the supplier cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the Agency must specify how much time the system has to collect the sample.
- e) Sampling location.
- 1) Any groundwater source sample required pursuant to subsection (a) of this Section must be collected at a location prior to any treatment of the groundwater source unless the Agency approves a sampling location after treatment.

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- 2) If the supplier's system configuration does not allow for sampling at the well itself, it may collect a sample at an Agency-approved location to meet the requirements of subsection (a) of this Section if the sample is representative of the water quality of that well.
- f) New sources. If directed by the Agency by a SEP issued pursuant to Section 611.110, a GWS supplier that places a new groundwater source into service after November 30, 2009 must conduct assessment source water monitoring pursuant to subsection (b) of this Section. If directed by the SEP, the system must begin monitoring before the groundwater source is used to provide water to the public.
- g) Public Notification. A GWS supplier with a groundwater source sample collected pursuant to subsection (a) or (b) of this Section that is fecal indicator-positive and which is not invalidated pursuant to subsection (d) of this Section, including a consecutive system supplier served by the groundwater source, must conduct public notification pursuant to Section 611.902.
- h) Monitoring Violations. A failure to meet the requirements of subsections (a) through (f) of this Section is a monitoring violation that requires the GWS supplier to provide public notification pursuant to Section 611.904.

BOARD NOTE: Derived from 40 CFR 141.402 and appendix A to subpart C of 40 CFR 141 (~~2013~~)(2014).

(Source: Amended at 39 Ill. Reg. _____, effective _____)

SUBPART U: CONSUMER CONFIDENCE REPORTS

Section 611.883 Content of the Reports

- a) Each CWS must provide to its customers an annual report that contains the information specified in this Section and Section 611.884.
- b) Information on the source of the water delivered.
 - 1) Each report must identify the sources of the water delivered by the CWS by providing information on the following:

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- A) The type of the water (e.g., surface water, groundwater); and
 - B) The commonly used name (if any) and location of the body (or bodies) of water.
- 2) If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the Agency, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the Agency or written by the supplier .
- c) Definitions.
- 1) Each report must include the following definitions:
 - A) Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

BOARD NOTE: Although an MCLG is not an NPDWR that the Board must include in the Illinois SDWA regulations, the use of this definition is mandatory where the term "MCLG" is defined.
 - B) Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
 - 2) A report for a CWS operating under relief from an NPDWR issued under Section 611.111, 611.112, 611.130, or 611.131 must include the following definition: "Variances, Adjusted Standards, and Site-specific Rules: State permission not to meet an MCL or a treatment technique under certain conditions."
 - 3) A report that contains data on contaminants that USEPA regulates using

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any of the following terms must include the applicable definitions:

- A) Treatment technique: A required process intended to reduce the level of a contaminant in drinking water.
- B) Action level: The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
- C) Maximum residual disinfectant level goal or MRDLG: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

BOARD NOTE: Although an MRDLG is not an NPDWR that the Board must include in the Illinois SDWA regulations, the use of this definition is mandatory where the term "MRDLG" is defined.

- D) Maximum residual disinfectant level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- 4) A report that contains information regarding a Level 1 or Level 2 assessment required under Subpart AA of this Part must include the applicable of the following definitions:
- A) "Level 1 assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system."
 - B) "Level 2 assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred or why total coliform bacteria have been found in our water system on multiple occasions."

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- d) Information on detected contaminants.
- 1) This subsection (d) specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring (except *Cryptosporidium*). It applies to the following:
 - A) Contaminants subject to an MCL, action level, MRDL, or treatment technique (regulated contaminants);
 - B) Contaminants for which monitoring is required by ~~Section 611.510~~ USEPA pursuant to 40 CFR 141.40 (unregulated contaminants); and
 - C) Disinfection byproducts or microbial contaminants for which monitoring is required by Section 611.382 and Subpart L of this Part, except as provided under subsection (e)(1) of this Section, and which are detected in the finished water.
 - 2) The data relating to these contaminants must be displayed in one table or in several adjacent tables. Any additional monitoring results that a CWS chooses to include in its report must be displayed separately.
 - 3) The data must have been derived from data collected to comply with monitoring and analytical requirements during calendar year 1998 for the first report and must be derived from the data collected in subsequent calendar years , except that the following requirements also apply:
 - A) Where a system is allowed to monitor for regulated contaminants less often than once a year, the tables must include the date and results of the most recent sampling, and the report must include a brief statement indicating that the data presented in the report is from the most recent testing done in accordance with the regulations. No data older than five years need be included.
 - B) Results of monitoring in compliance with Section 611.382 and Subpart L need only be included for five years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements,

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whichever comes first.

- 4) For detected regulated contaminants (listed in Appendix A of this Part), the tables must contain the following:
 - A) The MCL for that contaminant expressed as a number equal to or greater than 1.0 (as provided in Appendix A of this Part);
 - B) The federal Maximum Contaminant Level Goal (MCLG) for that contaminant expressed in the same units as the MCL;
 - C) If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report must include the definitions for treatment technique or action level, as appropriate, specified in subsection (c)(3) of this Section;
 - D) For contaminants subject to an MCL, except turbidity, total coliforms, fecal coliforms, and E. coli, the highest contaminant level used to determine compliance with an NPDWR, and the range of detected levels, as follows:
 - i) When compliance with the MCL is determined annually or less frequently: the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.
 - ii) When compliance with the MCL is determined by calculating a running annual average of all samples taken at a monitoring location: the highest average of any of the monitoring locations and the range of all monitoring locations expressed in the same units as the MCL. For the MCLs for TTHM and HAA5 in Section 611.312(b)(2), the supplier must include the highest locational running annual average for TTHM and HAA5 and the range of individual sample results for all monitoring locations expressed in the same units as the MCL. If results from more than one location exceed the TTHM or HAA5 MCL, the supplier

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must include the locational running annual average for each location whose results exceed the MCL.

- iii) When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all samples at all monitoring locations: the average and range of detection expressed in the same units as the MCL. The supplier is required to include individual sample results for the IDSE conducted under Subpart W of this Part when determining the range of TTHM and HAA5 results to be reported in the annual consumer confidence report for the calendar year that the IDSE samples were taken.

BOARD NOTE to subsection (d)(4)(D): When rounding of results to determine compliance with the MCL is allowed by the regulations, rounding should be done prior to multiplying the results by the factor listed in Appendix A of this Part; derived from 40 CFR 153 (2013)~~(2014)~~.

- E) For turbidity the following:
 - i) When it is reported pursuant to Section 611.560: the highest average monthly value.
 - ii) When it is reported pursuant to the requirements of Section 611.211(b): the highest monthly value. The report must include an explanation of the reasons for measuring turbidity.
 - iii) When it is reported pursuant to Section 611.250, 611.743, or 611.955(b): the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in Section 611.250, 611.743, or 611.955(b) for the filtration technology being used. The report must include an explanation of the reasons for measuring turbidity;
- F) For lead and copper the following: the 90th percentile value of the

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most recent round of sampling and the number of sampling sites exceeding the action level;

- G) For total coliform analytical results until March 31, 2016, the following:
 - i) The highest monthly number of positive samples for systems collecting fewer than 40 samples per month; or
 - ii) The highest monthly percentage of positive samples for systems collecting at least 40 samples per month;
 - H) For fecal coliform and E. coli until March 31, 2016, the following: the total number of positive samples;
 - I) The likely sources of detected contaminants to the best of the supplier's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and must be used when available to the supplier. If the supplier lacks specific information on the likely source, the report must include one or more of the typical sources for that contaminant listed in Appendix G of this Part that are most applicable to the CWS; and
 - J) For E. coli analytical results under Subpart AA of this Part, the total number of positive samples.
- 5) If a CWS distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table must contain a separate column for each service area and the report must identify each separate distribution system. Alternatively, a CWS may produce separate reports tailored to include data for each service area.
- 6) The tables must clearly identify any data indicating violations of MCLs, MRDLs, or treatment techniques, and the report must contain a clear and readily understandable explanation of the violation including the following: the length of the violation, the potential adverse health effects,

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and actions taken by the CWS to address the violation. To describe the potential health effects, the CWS must use the relevant language of Appendix A of this Part.

- 7) For detected unregulated contaminants for which monitoring is required by USEPA pursuant to 40 C.F.R. CFR 141.40 (except *Cryptosporidium*), the tables must contain the average and range at which the contaminant was detected. The report may include a brief explanation of the reasons for monitoring for unregulated contaminants.
- e) Information on *Cryptosporidium*, radon, and other contaminants as follows:
- 1) If the CWS has performed any monitoring for *Cryptosporidium*, including monitoring performed to satisfy the requirements of Subpart L of this Part, that indicates that *Cryptosporidium* may be present in the source water or the finished water, the report must include the following:
 - A) A summary of the results of the monitoring; and
 - B) An explanation of the significance of the results.
 - 2) If the CWS has performed any monitoring for radon that indicates that radon may be present in the finished water, the report must include the following:
 - A) The results of the monitoring; and
 - B) An explanation of the significance of the results.
 - 3) If the CWS has performed additional monitoring that indicates the presence of other contaminants in the finished water, the report must include the following:
 - A) The results of the monitoring; and
 - B) An explanation of the significance of the results noting the existence of any health advisory or proposed regulation.

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- f) Compliance with an NPDWR. In addition to the requirements of subsection (d)(6) of this Section, the report must note any violation that occurred during the year covered by the report of a requirement listed below, and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the CWS has taken to correct the violation.
- 1) Monitoring and reporting of compliance data.
 - 2) Filtration and disinfection prescribed by Subpart B of this Part. For CWSs that have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes that constitutes a violation, the report must include the following language as part of the explanation of potential adverse health effects: Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
 - 3) Lead and copper control requirements prescribed by Subpart G of this Part. For systems that fail to take one or more actions prescribed by Section 611.350(d), 611.351, 611.352, 611.353, or 611.354, the report must include the applicable language of Appendix A of this Part for lead, copper, or both.
 - 4) Treatment techniques for acrylamide and epichlorohydrin prescribed by Section 611.296. For systems that violate the requirements of Section 611.296, the report must include the relevant language from Appendix A of this Part.
 - 5) Recordkeeping of compliance data.
 - 6) Special monitoring requirements prescribed by Sections 611.510 and 611.630.
 - 7) Violation of the terms of a variance, adjusted standard, site-specific rule, or administrative or judicial order.
- g) Variances, adjusted standards, and site-specific rules. If a system is operating under the terms of a variance, adjusted standard, or site-specific rule issued under

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Section 611.111, 611.112, or 611.131, the report must contain the following:

- 1) An explanation of the reasons for the variance, adjusted standard, or site-specific rule;
 - 2) The date on which the variance, adjusted standard, or site-specific rule was issued;
 - 3) A brief status report on the steps the CWS is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance, adjusted standard, or site-specific rule; and
 - 4) A notice of any opportunity for public input in the review, or renewal, of the variance, adjusted standard, or site-specific rule.
- h) Additional information.
- 1) The report must contain a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water, including bottled water. This explanation may include the language of subsections (h)(1)(A) through (h)(1)(C) of this Section or CWSs may use their own comparable language. The report also must include the language of subsection (h)(1)(D) of this Section.
 - A) The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.
 - B) Contaminants that may be present in source water include the following:
 - i) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

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- ii) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;
 - iii) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;
 - iv) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and
 - v) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.
- C) In order to ensure that tap water is safe to drink, USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. United States Food and Drug Administration (USFDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.
- D) Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA Safe Drinking Water Hotline (800-426-4791).
- 2) The report must include the telephone number of the owner, operator, or designee of the CWS as a source of additional information concerning the report.
 - 3) In communities with a large proportion of non-English speaking residents,

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as determined by the Agency, the report must contain information in the appropriate languages regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

- 4) The report must include information about opportunities for public participation in decisions that may affect the quality of the water.
- 5) The CWS may include such additional information as it deems necessary for public education consistent with, and not detracting from, the purpose of the report.
- 6) Suppliers required to comply with Subpart S of this Part.
 - A) Any GWS supplier that receives written notice from the Agency of a significant deficiency or which receives notice from a laboratory of a fecal indicator-positive groundwater source sample that is not invalidated by the Agency pursuant to Section 611.802(d) must inform its customers of any significant deficiency that is uncorrected at the time of the next report or of any fecal indicator-positive groundwater source sample in the next report. The supplier must continue to inform the public annually until the Agency, by a SEP issued pursuant to Section 611.110, determines that particular significant deficiency is corrected or the fecal contamination in the groundwater source is addressed pursuant to Section 611.803(a). Each report must include the following information:
 - i) The nature of the particular significant deficiency or the source of the fecal contamination (if the source is known) and the date the significant deficiency was identified by the Agency or the dates of the fecal indicator-positive groundwater source samples;
 - ii) Whether or not the fecal contamination in the groundwater source has been addressed pursuant to Section 611.803(a) and the date of such action;

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- iii) For each significant deficiency or fecal contamination in the groundwater source that has not been addressed pursuant to Section 611.803(a), the Agency-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed; and
 - iv) If the system receives notice of a fecal indicator-positive groundwater source sample that is not invalidated by the Agency pursuant to Section 611.802(d), the potential health effects using the health effects language of Appendix A of this Part.
- B) If directed by the Agency by a SEP issued pursuant to Section 611.110, a supplier with significant deficiencies that have been corrected before the next report is issued must inform its customers of the significant deficiency, how the deficiency was corrected, and the date of correction pursuant to subsection (h)(6)(A) of this Section.
- 7) Suppliers required to comply with Subpart AA of this Part.
- A) Any supplier required to comply with the Level 1 assessment requirement or a Level 2 assessment requirement that is not due to an E. coli MCL violation must include in the report the text found in subsections (h)(7)(A)(i) and (h)(7)(A)(ii) or (h)(7)(A)(i) and (h)(7)(A)(iii) of this Section, as appropriate, filling in the blanks accordingly and the text found in subsection (h)(7)(A)(iv) of this Section, if appropriate.
 - i) “Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s)

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to identify problems and to correct any problems that were found during these assessments.^{22"}

ii) [“]During the past year we were required to conduct [insert number of ~~level~~Level 1 assessments] Level 1 assessment(s). [insert number of level 1 assessments] Level 1 assessment(s) were completed. In addition, we were required to take [insert number of corrective actions] corrective actions and we completed [insert number of corrective actions] of these actions.^{22"}

iii) [“]During the past year [insert number of Level 2 assessments] Level 2 assessments were required to be completed for our water system. [insert number of Level 2 assessments] Level 2 assessments were completed. In addition, we were required to take [insert number of corrective actions] corrective actions and we completed [insert number of corrective actions] of these actions.^{22"}

iv) Any supplier that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate: [“]During the past year we failed to conduct all of the required assessment(s).^{22"} or [“]During the past year we failed to correct all identified defects that were found during the assessment.^{22"}

B) Any supplier required to conduct a Level 2 assessment due to an E. coli MCL violation must include in the report the text found in subsections (h)(7)(B)(i) and (h)(7)(B)(ii) of this Section, filling in the blanks accordingly and the appropriate alternative text found in subsection (h)(7)(B)(ii) of this Section, if appropriate.

i) [“]E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or

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other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.^{22"}

ii) [“]"We were required to complete a Level 2 assessment because we found *E. coli* in our water system. In addition, we were required to take [insert number of corrective actions] corrective actions and we completed [insert number of corrective actions] of these actions.^{22"}

iii) Any supplier that has failed to complete the required assessment or correct all identified sanitary defects, is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate: [“]"We failed to conduct the required assessment.^{22"} or [“]"We failed to correct all sanitary defects that were identified during the assessment that we conducted.^{22"}

C) If a supplier detects *E. coli* and has violated the *E. coli* MCL, in addition to completing the table, as required in subsection (d)(4) of this Section, the supplier must include one or more of the following statements to describe any noncompliance, as applicable:

i) [“]"We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample.^{22"}

ii) [“]"We had a total coliform-positive repeat sample following an *E. coli*-positive routine sample.^{22"}

iii) [“]"We failed to take all required repeat samples following an *E. coli*-positive routine sample.^{22"}

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iv) ~~“We failed to test for E. coli when any repeat sample tested positive for total coliform.”~~

D) If a supplier detects E. coli and has not violated the E. coli MCL, in addition to completing the table as required in subsection (d)(4) of this Section, the supplier may include a statement that explains that, although ~~they have it has~~ detected E. coli, ~~they are it is~~ not in violation of the E. coli MCL.

BOARD NOTE: Derived from 40 CFR 141.153 (~~2013~~[2014](#)), (~~2014~~).

(Source: Amended at 39 Ill. Reg. ~~—~~, effective ~~_____~~)

Section 611.884 Required Additional Health Information

- a) All reports must prominently display the following language: ~~“Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA or Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the USEPA Safe Drinking Water Hotline (800-426-4791).”~~
- b) A supplier that detects arsenic above 0.005 mg/ℓ and up to and including 0.010 mg/ℓ must do the following:
- 1) The supplier must include in its report a short informational statement about arsenic, using the following language: ~~“While your drinking water meets USEPA’s standard for arsenic, it does contain low levels of arsenic. USEPA’s standard balances the current understanding of arsenic’s possible health effects against the costs of removing arsenic from drinking water. USEPA continues to research the health effects of low levels of arsenic, which is a naturally-occurring mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.”~~; or

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- 2) The supplier may write its own educational statement, but only in consultation with the Agency.
- c) A supplier that detects nitrate at levels above 5 mg/l, but below the MCL, must do the following:
 - 1) The supplier must include a short informational statement about the impacts of nitrate on children, using the following language: “Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider²²”; or
 - 2) The CWS supplier may write its own educational statement, but only in consultation with the Agency.
- d) Every report must include the following lead-specific information:
 - 1) A short informational statement about lead in drinking water and its effects on children. The statement must include the following information:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [NAME OF SUPPLIER] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

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- 2) A supplier may write its own educational statement, but only in consultation with the Agency.
- e) A CWS supplier that detects TTHM above 0.080 mg/l, but below the MCL in Section 611.312, as an annual average, monitored and calculated under the provisions of former Section 611.680, must include the health effects language prescribed by Appendix A of this Part.

BOARD NOTE: Former Section 611.680 originally derived from 40 CFR 141.30(a) and (b). USEPA removed 40 CFR 141.30 in its entirety in 2006. The Board repealed former Section 611.680 in 2012. The references to former Section 611.680 in this subsection (e) ~~relates~~relate to use of existing monitoring data collected under those provisions as they existed before their repeal.

BOARD NOTE: Derived from 40 CFR 141.154 (~~2012~~2014), (~~2014~~).

(Source: Amended at 39 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.

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- 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 1415 variance, under Section 611.111, or a SDWA 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 1415 variance, under Section 611.111, or a SDWA 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 exceedence of the nitrate MCL by a non-CWS, where granted permission by the Agency under Section 611.300(d).
 - C) An exceedence of the secondary fluoride standard of Section 611.858.
 - D) The availability of unregulated contaminant monitoring data collected as required by USEPA pursuant to 40 ~~C.F.R.~~CFR 141.40.
 - 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 V, not already listed in Appendix G of this Part.
- b) The type of public notice required for each violation or situation. The public

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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 that is out of compliance. Permission by the Agency for limiting distribution of the notice must be granted in writing, by a SEP issued 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).

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BOARD NOTE: Derived from 40 CFR 141.201 (2013)(2014).

(Source: Amended at 39 Ill. Reg. —, effective _____)

Section 611.907 Special Notice of the Availability of Unregulated Contaminant Monitoring Results

- a) When to give special notice. The owner or operator of a CWS supplier or an NTNCWS supplier required to monitor for unregulated contaminants ~~under Section 611.510~~ by USEPA pursuant to 40 ~~C.F.R.~~ CFR 141.40 must notify persons served by the supplier of the availability of the results of such sampling no later than 12 months after the monitoring results are known.
- b) The form and manner of a special notice. The form and manner of the public notice must follow the requirements for a Tier 3 public notice prescribed in Sections 611.904(c), (d)(1), and (d)(3). The notice must also identify a person and provide the telephone number to contact for information on the monitoring results.

BOARD NOTE: Derived from 40 CFR 141.207 (2002)(2014).

(Source: Amended at 39 Ill. Reg. —, effective _____)

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

Section 611.953 Disinfection Profile

- a) Applicability. A disinfection profile is a graphical representation of a system's level of Giardia lamblia or virus inactivation measured during the course of a year. A Subpart B community or non-transient non-community water system that serves fewer than 10,000 persons must develop a disinfection profile unless the Agency, by a SEP issued pursuant to Section 611.110, determines that a profile is unnecessary. The Agency may approve the use of a more representative data set for disinfection profiling than the data set required under subsections (c) through (g) of this Section.

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- b) Determination that a disinfection profile is not necessary. The Agency may only determine that a disinfection profile is not necessary if the system's TTHM and HAA5 levels are below 0.064 mg/l and 0.048 mg/l, respectively. To determine these levels, TTHM and HAA5 samples must have been collected after January 1, 1998, during the month with the warmest water temperature, and at the point of maximum residence time in the distribution system. The Agency may, by a SEP issued pursuant to Section 611.110, approve the use of a different data set to determine these levels if it determines that the data set is representative TTHM and HAA5 data.

- c) Development of a disinfection profile. A disinfection profile consists of the following three steps:
 - 1) First, the supplier must collect data for several parameters from the plant, as discussed in subsection (d) of this Section, over the course of 12 months. If the supplier serves between 500 and 9,999 persons it must have begun to collect data no later than July 1, 2003. If the supplier serves fewer than 500 persons, it must begin to collect data no later than January 1, 2004.
 - 2) Second, the supplier must use this data to calculate weekly log inactivation as discussed in subsections (e) and (f) of this Section; and
 - 3) Third, the supplier must use these weekly log inactivations to develop a disinfection profile as specified in subsection (g) of this Section.

- d) Data required for a disinfection profile. A supplier must monitor the following parameters to determine the total log inactivation using the analytical methods in Section ~~611.231~~ 611.531, once per week on the same calendar day, over 12 consecutive months:
 - 1) The temperature of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;
 - 2) If a supplier uses chlorine, the pH of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;
 - 3) The disinfectant contact times ("T₂") during peak hourly flow; and

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- 4) The residual disinfectant concentrations ("C₂₂") of the water before or at the first customer and prior to each additional point of disinfection during peak hourly flow.
- e) Calculations based on the data collected. The tables in Appendix B of this Part must be used to determine the appropriate $CT_{99.9}$ value. The supplier must calculate the total inactivation ratio as follows, and multiply the value by 3.0 to determine log inactivation of Giardia lamblia:
 - 1) If the supplier uses only one point of disinfectant application, it must determine either of the following:
 - A) One inactivation ratio ($CT_{calc}/CT_{99.9}$) before or at the first customer during peak hourly flow; or
 - B) Successive $CT_{calc}/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the supplier must calculate the total inactivation ratio by determining $CT_{calc}/CT_{99.9}$ for each sequence and then adding the $CT_{calc}/CT_{99.9}$ values together to determine $\sum CT_{calc}/CT_{99.9}$.
 - 2) If the supplier uses more than one point of disinfectant application before the first customer, it must determine the $CT_{calc}/CT_{99.9}$ value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow using the procedure specified in subsection (e)(1)(B) of this Section.
- f) Use of chloramines, ozone, or chlorine dioxide as a primary disinfectant. If a supplier uses chloramines, ozone, or chlorine dioxide for primary disinfection, the supplier must also calculate the logs of inactivation for viruses and develop an additional disinfection profile for viruses using methods approved by the Agency.
- g) Development and maintenance of the disinfection profile in graphic form. Each log inactivation serves as a data point in the supplier's disinfection profile. A

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supplier will have obtained 52 measurements (one for every week of the year). This will allow the supplier and the Agency the opportunity to evaluate how microbial inactivation varied over the course of the year by looking at all 52 measurements (the supplier's disinfection profile). The supplier must retain the disinfection profile data in graphic form, such as a spreadsheet, which must be available for review by the Agency as part of a sanitary survey. The supplier must use this data to calculate a benchmark if the supplier is considering changes to disinfection practices.

BOARD NOTE: Derived from 40 CFR 141.530 through 141.536 (~~2003~~)(2014).

(Source: Amended at 39 Ill. Reg. ———, effective ———)

Section 611.955 Combined Filter Effluent Turbidity Limits

- a) **Applicability.** A Subpart B system supplier that serves fewer than 10,000 persons, which is required to filter, and which utilizes filtration other than slow sand filtration or diatomaceous earth filtration must meet the combined filter effluent turbidity requirements of subsections (b) through (d) of this Section . If the supplier uses slow sand or diatomaceous earth filtration the supplier is not required to meet the combined filter effluent turbidity limits of this Subpart X, but the supplier must continue to meet the combined filter effluent turbidity limits in Section 611.250.
- b) **Combined filter effluent turbidity limits.** A supplier must meet two strengthened combined filter effluent turbidity limits.
 - 1) The first combined filter effluent turbidity limit is a "95th percentile" turbidity limit that a supplier must meet in at least 95 percent of the turbidity measurements taken each month. Measurements must continue to be taken as described in Sections ~~611.231 and 233~~ 611.531 and 611.533. Monthly reporting must be completed according to Section 611.957(a). The following are the required limits for specific filtration technologies:
 - A) For a system with conventional filtration or direct filtration, the 95th percentile turbidity value is 0.3 NTU.

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- B) For a system with any other alternative filter technology, the 95th percentile turbidity value is a value (not to exceed 1 NTU) to be determined by the Agency, by a SEP issued pursuant to Section 611.110, based on the demonstration described in subsection (c) of this Section.
- 2) The second combined filter effluent turbidity limit is a ~~"maximum"~~ turbidity limit that a supplier may at no time exceed during the month. Measurements must continue to be taken as described in Sections ~~611.231 and 611.233~~ 611.531 and 611.533. Monthly reporting must be completed according to Section 611.957(a). The following are the required limits for specific filtration technologies:
 - A) For a system with conventional filtration or direct filtration, the maximum turbidity value is 1 NTU.
 - B) For a system with any other alternative filter technology, the maximum turbidity value is a value (not to exceed 5 NTU) to be determined by the Agency, by a SEP issued pursuant to Section 611.110, based on the demonstration described in subsection (c) of this Section.
- c) Requirements for an alternative filtration system.
 - 1) If a supplier's system consists of alternative filtration (filtration other than slow sand filtration, diatomaceous earth filtration, conventional filtration, or direct filtration) the supplier is required to conduct a demonstration (see tables in subsection (b) of this Section). The supplier must demonstrate to the Agency, using pilot plant studies or other means, that its system's filtration, in combination with disinfection treatment, consistently achieves the following:
 - A) 99 percent removal of *Cryptosporidium* oocysts;
 - B) 99.9 percent removal or inactivation of *Giardia lamblia* cysts; and
 - C) 99.99 percent removal or inactivation of viruses.

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- c) Special requirements for systems with two or fewer filters. If a supplier's system only consists of two or fewer filters, the supplier may conduct continuous monitoring of combined filter effluent turbidity in lieu of individual filter effluent turbidity monitoring. Continuous monitoring must meet the same requirements set forth in subsections (a)(1) through (a)(4) and (b) of this Section.
- d) Follow-up action. Follow-up action is required according to the following requirements:
 - 1) If the turbidity of an individual filter (or the turbidity of combined filter effluent (CFE) for a system with two filters that monitor CFE in lieu of individual filters) exceeds 1.0 NTU in two consecutive recordings 15 minutes apart, the supplier must report to the Agency by the 10th of the following month and include the filter numbers, corresponding dates, turbidity values that exceeded 1.0 NTU, and the cause (if known) for the exceedences.
 - 2) If a supplier was required to report to the Agency for three months in a row and turbidity exceeded 1.0 NTU in two consecutive recordings 15 minutes apart at the same filter (or CFE for systems with two filters that monitor CFE in lieu of individual filters), the supplier must conduct a self-assessment of the filters within 14 days of the day on which the filter exceeded 1.0 NTU in two consecutive measurements for the third straight month, unless a CPE, as specified in subsection (d)(3) of this Section, was required. A supplier that has a system with two filters that monitor CFE in lieu of individual filters must conduct a self assessment on both filters. 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.
 - 3) If a supplier was required to report to the Agency for two months in a row and turbidity exceeded 2.0 NTU in two consecutive recordings 15 minutes apart at the same filter (or CFE for systems with two filters that monitor CFE in lieu of individual filters), the supplier must arrange to have a comprehensive performance evaluation (CPE) conducted by the Agency or a third party approved by the Agency not later than 60 days following the

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day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month. If a CPE has been completed by the Agency or a third party approved by the Agency within the 12 prior months or the system and Agency are jointly participating in an ongoing comprehensive technical assistance (CTA) project at the system, a new CPE is not required. If conducted, a CPE must be completed and submitted to the Agency no later than 120 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month.

- e) Special individual filter monitoring for a lime-softening system. If a supplier's system utilizes lime softening, the supplier may apply to the Agency for alternative turbidity exceedence levels for the levels specified in subsection (d) of this Section. The supplier must be able to demonstrate to the Agency that higher turbidity levels are due to lime carryover only, and not due to degraded filter performance.

BOARD NOTE: Derived from 40 CFR 141.560 through 141.564 (~~2003~~)(2014).

(Source: Amended at 39 Ill. Reg. ———, effective ———)

SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM

Section 611.1004 Source Water Monitoring Requirements: Analytical Methods

- a) Cryptosporidium. A supplier must analyze for Cryptosporidium using USEPA OGWDW Methods, Method 1623 (05), 1623.1, or 1622 (05), each incorporated by reference in Section 611.102, or alternative methods approved by the Agency pursuant to Section 611.480.
 - 1) The supplier must analyze at least a 10 ℓ sample or a packed pellet volume of at least 2 mℓ as generated by the methods listed in subsection (a) of this Section. A supplier unable to process a 10 ℓ sample must analyze as much sample volume as can be filtered by two filters approved by USEPA for the methods listed in subsection (a) of this Section, up to a packed pellet volume of at least 2 mℓ.
 - 2) Matrix spike (MS) samples.

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- A) MS samples, as required by the methods in subsection (a) of this Section, must be spiked and filtered by a laboratory approved for Cryptosporidium analysis pursuant to Section 611.1005.
 - B) If the volume of the MS sample is greater than 10 ℓ, the supplier may filter all but 10 ℓ of the MS sample in the field, and ship the filtered sample and the remaining 10 ℓ of source water to the laboratory. In this case, the laboratory must spike the remaining 10 ℓ of water and filter it through the filter used to collect the balance of the sample in the field.
- 3) Flow cytometer-counted spiking suspensions must be used for MS samples and ongoing precision and recovery samples.
- b) E. coli. A supplier must use methods for enumeration of E. coli in source water approved in 40 CFR 136.3(a), incorporated by reference in Section 611.102, or alternative methods approved by the Agency pursuant to Section 611.480.
- 1) The time from sample collection to initiation of analysis may not exceed 30 hours, unless the supplier meets the condition of subsection (b)(2) of this Section.
 - 2) The Agency may, by a SEP issued pursuant to Section 611.110, approve on a case-by-case basis the holding of an E. coli sample for up to 48 hours between sample collection and initiation of analysis if it determines that analyzing an E. coli sample within 30 hours is not feasible. E. coli samples held between 30 to 48 hours must be analyzed by the-~~Autoanalysis~~ Colilert® Test-System reagent version of Standard Methods, 18th, 19th, or 20th ed., Method 9223 B, incorporated by reference in Section 611.102.
 - 3) A supplier must maintain the temperature of its samples between 0°C and 10°C during storage and transit to the laboratory.
 - 4) The supplier may use the membrane filtration, two-step procedure described in Standard Methods, 20th ed., Method 9222 D and G, incorporated by reference in Section 611.102.

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BOARD NOTE: On June 3, 2008 (at 73 Fed. Reg. 31616), USEPA added appendix A to subpart C of 40 CFR 141, which authorized alternative methods to those listed for E. coli by multiple-tube technique at corresponding 40 CFR 141.402(c)(2) to allow the use of Standard Methods for the Examination of Water and Wastewater, 20th ed., Method 9222 D and G.

- c) Turbidity. A supplier must use methods for turbidity measurement approved in Section 611.531(a).

BOARD NOTE: Derived from 40 CFR 141.704 and appendix A to subpart C of 40 CFR 141 (~~2012~~)(2014).

(Source: Amended at 39 Ill. Reg. ———, effective ———)

SUBPART AA—: REVISED TOTAL COLIFORM RULE

Section 611.1052 Analytical Methods and Laboratory Certification

- a) Analytical methodology.
 - 1) The standard sample volume required for analysis, regardless of analytical method used, is 100 ml.
 - 2) A supplier needs only determine the presence or absence of total coliforms and E. coli; a determination of density is not required.
 - 3) The time from sample collection to initiation of test medium incubation may not exceed 30 hours. Suppliers are encouraged but not required to hold samples below 10° C during transit.
 - 4) If water having residual chlorine (measured as free, combined, or total chlorine) is to be analyzed, sufficient sodium thiosulfate (Na₂S₂O₃) must be added to the sample bottle before sterilization to neutralize any residual chlorine in the water sample. Dechlorination procedures are addressed in section 2 of Standard Methods, 20th or 21st ed., Method 9060 A, each incorporated by reference in Section 611.102.

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- 5) The supplier must conduct total coliform and E. coli analyses in accordance with one of the following analytical methods, each incorporated by reference in Section 611.102:

BOARD NOTE: All monitoring and analyses must be done in accordance with the version of the approved method recited in this subsection (a) and incorporated by reference in Section 611.102. The methods listed are the only versions that may be used for compliance with this Subpart AA. Laboratories should be careful to use only the approved versions of the methods, as product package inserts may not be the same as the approved versions of the methods.

A) Total coliforms, lactose fermentation methods:

- i) Standard total coliform fermentation technique: sections 1 and 2 of Standard Methods, 20th, 21st, or 22nd ed., Method 9221 B; or

BOARD NOTE: Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the supplier conducts at least 25 parallel tests between lactose broth and lauryl tryptose broth using the water normally tested, and if the findings from this comparison demonstrate that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than 10 percent. Because Standard Methods, 21st ed., Method 9221 B is the same version as Standard Methods Online 9221 B-99, the Board has not listed the Standard Methods Online version separately.

- ii) Presence-absence (P₋A) coliform test: sections 1 and 2 of Standard Methods, 20th or 21st, Method 9221 D.

BOARD NOTE: A multiple tube enumerative format, as described in Standard Methods, 20th or 21st, Method 9221 D, is approved for this method for use in presence-absence determination under this Subpart AA. Because Standard Methods, 21st ed., Method 9221 D is the same version as

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Standard Methods Online 9221 D-99, the Board has not listed the Standard Methods Online version separately.

BOARD NOTE: USEPA added sections 1 and 2 of Standard Methods Online, Method 9221 B-06 as an approved alternative method for total coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9221 B is the same version as Standard Methods Online, ~~Method~~ Method 9221 B-06, the Board has not listed the Standard Methods Online versions separately.

B) Total coliforms, membrane filtration methods:

- i) Standard total coliform membrane filter procedure: Standard Methods, 20th or 21st ed., Method 9222 B or C.

BOARD NOTE: Because Standard Methods, 20th ed., Methods 9222 B and C are the same version as Standard Methods Online 9222 B and C-97, the Board has not listed the Standard Methods Online version separately.

- ii) Membrane filtration using MI medium: USEPA Method 1604.

- iii) m-ColiBlue24® Test.

BOARD NOTE: All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is pre-sterilized by the manufacturer (i.e., disposable funnel units) may be used.

- iv) Chromocult.

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BOARD NOTE: All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is pre-sterilized by the manufacturer (i.e., disposable funnel units) may be used.

C) Total coliforms, enzyme substrate methods:

- i) Colilert® Test: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B;

BOARD NOTE: Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this Subpart AA.

- ii) Colilert-18® Test: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B;

- ~~iiii)~~ ~~Colisure®~~TM~~iii)~~ ColisureTM Test: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B;

BOARD NOTE: Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this Subpart AA. ~~Colisure®~~TMColisureTM Test results may be read after an incubation time of 24 hours. Because Standard Methods, 20th ed., Method 9223 B is the same version as Standard Methods Online 9223 B-97, the Board has not listed the Standard Methods Online version separately.

- ~~iiiv)~~ E*Colite® ~~test~~ Test;

- ~~ivv)~~ ReadyCult® 2007 ~~test~~ Test;

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- ~~vii~~) Modified Colitag™ ~~test~~ Test; or
- vii) Tecta EC/TC P-A Test.

BOARD NOTE: USEPA added Standard Methods Online, Method 9223 B-04, Colilert-18® Test, and Tecta EC/TC P-A Test as approved alternative methods for total coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9223 B is the same version as Standard Methods Online, Method ~~Method~~ 9223 B-04, the Board has not listed the Standard Methods Online versions separately.

- D) E. coli (following lactose fermentation methods); EC-MUG medium: section 1 of Standard Methods, 20th; or 21st ed., or 22nd ed., Method 9221 F.

BOARD NOTE: USEPA added section 1 of Standard Methods Online, Method 9221 F-06 as an approved alternative method for E. coli in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9221 F is the same version as Standard Methods Online, Method ~~Method~~ 9221 F-06, the Board has not listed the Standard Methods Online versions separately.

- E) E. coli, partition method:
 - i) EC broth with MUG (EC-MUG): section 1.c(2) of Standard Methods, 20th or 21st ed., Method 9222 G; or

BOARD NOTE: The following changes must be made to the EC broth with MUG (EC-MUG) formulation: potassium dihydrogen phosphate (KH₂PO₄) must be 1.5 g, and 4-methylumbelliferyl-β-D-glucuronide must be 0.05 g.

- ii) NA-MUG medium: section 1.c(1) of Standard Methods, 20th or 21st ed., Method 9222 G.

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- F) E. coli, membrane filtration methods:
- i) Membrane filtration using MI medium: USEPA Method 1604.
 - ii) m-ColiBlue24® ~~test~~ Test.

BOARD NOTE: All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is pre-sterilized by the manufacturer (i.e., disposable funnel units) may be used.

- iii) Chromocult.

BOARD NOTE: All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is pre-sterilized by the manufacturer (i.e., disposable funnel units) may be used.

- G) E. coli, enzyme substrate methods:
- i) Colilert® Test: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B;

BOARD NOTE: Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this Subpart AA. Because Standard Methods, 20th ed., Method 9223 B is the

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same version as Standard Methods Online 9223 B-97, the Board has not listed the Standard Methods Online version separately.

ii) Colilert-18® Test: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B;

~~iiii)~~ ~~Colisure®™~~ ~~Colisure™~~: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B;

BOARD NOTE: Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this Subpart AA. ~~Colisure®™~~ ~~Colisure™~~ results may be read after an incubation time of 24 hours. Because Standard Methods, 20th ed., Method 9223 B is the same version as Standard Methods Online 9223 B-97, the Board has not listed the Standard Methods Online version separately.

~~iiiv)~~ E*Colite® ~~test~~ Test;

~~ivv)~~ ReadyCult® 2007 ~~test~~ Test;

~~vvi)~~ Modified Colitag™ ~~test~~ Test; ~~or~~

vii) Tecta EC/TC P-A Test.

BOARD NOTE: USEPA added of Standard Methods, 22nd ed., Methods 9221 B (sections 1 and 2) and 9223 B as approved alternative methods for total coliforms and Standard Methods, 22nd ed., Methods 9221 F (section 1) and 9223 B for as approved alternative methods for E. coli in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods Online, Method 9223 B-04, Colilert-18® Test, and Tecta EC/TC P-A Test as approved alternative ~~method~~ ~~methods~~ for E. coli in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9223 B is the same version as Standard

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Methods Online, ~~Method~~ Method 9223 B-04, the Board has not listed the Standard Methods Online versions separately.

- b) Laboratory certification. A supplier must have all compliance samples required by this Subpart AA analyzed by a certified laboratory in one of the categories listed in Section 611.490(a). The laboratory used by the supplier must be certified for each method (and associated contaminants) that is used for compliance monitoring analyses under this Subpart AA.
- c) This subsection (c) corresponds with 40 CFR 141.1052(c), which is a centralized listing of incorporations by reference for the purposes of subpart Y to 40 CFR 141. The Board has centrally located all incorporations by reference in Section 611.102. This statement maintains structural consistency with the federal rules.

BOARD NOTE: Derived from 40 CFR 141.852 and appendix A to subpart C of 40 CFR 141 (2014).

(Source: Amended at 39 Ill. Reg. — _____, effective _____)

Section 611.1055 Routine Monitoring Requirements for CWSs That Serve 1,000 or Fewer People Using Only Groundwater

- a) General.
 - 1) This Section applies to CWS suppliers that use only ground water (except ground water under the direct influence of surface water, as defined in Section 611.102) and which serve 1,000 or fewer people.
 - 2) Following any total coliform-positive sample taken under the provisions of this Section, the supplier must comply with the repeat monitoring requirements and E. coli analytical requirements in Section 611.1058.
 - 3) Once all monitoring required by this Section and Section 611.1058 for a calendar month has been completed, the supplier must determine whether any coliform treatment technique triggers specified in Section 611.1059 have been exceeded. If any trigger has been exceeded, the supplier must complete assessments as required by Section 611.1059.

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- b) Monitoring frequency for total coliforms. The monitoring frequency for total coliforms is one sample per month, except as provided for under subsections (c) through (f) of this Section.
- c) Transition to Subpart AA.
 - 1) A supplier must continue to monitor according to the total coliform monitoring schedules under Sections 611.521 through 611.527 that were in effect on March 31, 2016, unless any of the conditions in subsection (e) of this Section are triggered on or after April 1, 2016, or unless otherwise directed by the Agency, by a SEP issued pursuant to Section 611.110.
 - 2) Beginning April 1, 2016, the Agency must perform a special monitoring evaluation during each sanitary survey to review the status of the supplier's system, including the distribution system, to determine whether the system is on an appropriate monitoring schedule. After the Agency has performed the special monitoring evaluation during each sanitary survey, the Agency may, by a SEP issued pursuant to Section 611.110, modify the supplier's monitoring schedule, as necessary. Alternatively, the Agency may allow the supplier to stay on its existing monitoring schedule, consistent with the provisions of this Section. The Agency may not allow a supplier to begin less frequent monitoring under the special monitoring evaluation unless the supplier has already met the applicable criteria for less frequent monitoring in this Section.
- d) Criteria for reduced monitoring.
 - 1) The Agency may, by a SEP issued pursuant to Section 611.110, reduce the monitoring frequency from monthly monitoring to no less than quarterly monitoring if the supplier is in compliance with Agency-certified operator provisions and demonstrates that it meets the criteria in subsections (d)(1)(A) through (d)(1)(C) of this Section. A supplier that loses its certified operator must return to monthly monitoring the month following that loss.
 - A) The supplier has a clean compliance history for a minimum of 12 months.

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- B) The most recent sanitary survey shows the supplier is free of sanitary defects (or has an approved plan and schedule to correct them and is in compliance with the plan and the schedule), has a protected water source, and meets Agency-approved construction standards.
- C) The supplier meets at least one of the following criteria:
 - i) An annual site visit by the Agency that is equivalent to a Level 2 assessment or an annual Level 2 assessment by a party approved by the Agency and correction of all identified sanitary defects (or an approved plan and schedule to correct them and is in compliance with the plan and schedule).
 - ii) Cross connection control, as approved by the Agency.
 - iii) Continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the Agency.
 - iv) Demonstration of maintenance of at least a 4-log removal or inactivation of viruses as provided for under Section 611.803(b)(3).
 - v) Other equivalent enhancements to water system barriers as approved by the Agency.
- 2) This subsection (d)(2) corresponds with 40 CFR 141.855(d)(2), which USEPA has marked "reserved." This statement maintains structural consistency with the corresponding federal provision.
- e) Return to routine monthly monitoring requirements. A supplier on quarterly monitoring that experience any of the events in subsections (e)(1) through (e)(4) of this Section must begin monthly monitoring the month following the event. The supplier must continue monthly monitoring until it meets the reduced monitoring requirements in subsection (d) of this Section.

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- 1) The supplier triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period.
 - 2) The supplier has an E. coli MCL violation.
 - 3) The supplier has a coliform treatment technique violation.
 - 4) The supplier has two Subpart AA monitoring violations in a rolling 12-month period.
- f) Additional routine monitoring the month following a total coliform-positive sample. A supplier collecting samples on a quarterly frequency must conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger). A supplier must collect at least three routine samples during the next month, except that the Agency may, by a SEP issued pursuant to Section 611.110, waive this requirement if the conditions of subsection (f)(1), (f)(2), or (f)(3) of this Section are met. A supplier may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. A supplier must use the results of additional routine samples in coliform treatment technique trigger calculations.
- 1) The Agency may, by a SEP issued pursuant to Section 611.110, waive the requirement to collect three routine samples the next month in which the supplier's system provides water to the public if the Agency, or an agent approved by the Agency, performs a site visit before the end of the next month in which the supplier's system provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the Agency to determine whether additional monitoring or any corrective action is needed. The Agency cannot approve an employee of the supplier to perform this site visit, even if the employee is an agent approved by the Agency to perform sanitary surveys.
 - 2) The Agency may, by a SEP issued pursuant to Section 611.110, waive the requirement to collect three routine samples the next month in which the supplier's system provides water to the public if the Agency has determined why the sample was total coliform-positive and has established that the supplier has corrected the problem or will correct the problem

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before the end of the next month in which the supplier's system serves water to the public. In this case, the Agency must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the Agency official who recommends such a decision, and make this document available to USEPA and the public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the supplier has taken or will take to correct this problem.

- 3) The Agency may not waive the requirement to collect three additional routine samples the next month in which the supplier's system provides water to the public solely on the grounds that all repeat samples are total coliform-negative. If the Agency determines that the supplier has corrected the contamination problem before the supplier takes the set of repeat samples required in Section 611.1058, and all repeat samples were total coliform-negative, the Agency may, by a SEP issued pursuant to Section 611.110, waive the requirement for additional routine monitoring the next month.

BOARD NOTE: Derived from 40 CFR 141.855 (~~2013~~)(2014).

(Source: Amended at 39 Ill. Reg. ———, effective _____)

Section 611.1061 Reporting and Recordkeeping

- a) Reporting.
 - 1) E. coli.
 - A) A supplier must notify the Agency by the end of the day when the system learns of an E. coli MCL violation, unless the supplier learns of the violation after the Agency office is closed and the Agency does not have either an after-hours phone line or an alternative notification procedure, in which case the supplier must notify the Agency before the end of the next business day, and the supplier notifies the public in accordance with Subpart V of this Part.

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- B) A supplier must notify the Agency by the end of the day when the supplier is notified of an E. coli-positive routine sample, unless the supplier is notified of the result after the Agency office is closed and the Agency does not have either an after-hours phone line or an alternative notification procedure, in which case the supplier must notify the Agency before the end of the next business day.
- 2) A supplier that has violated the treatment technique for coliforms in Section 611.1059 must report the violation to the Agency no later than the end of the next business day after it learns of the violation, and notify the public in accordance with Subpart V of this Part.
- 3) A supplier required to conduct an assessment under the provisions of Section 611.1059 must submit the assessment report within 30 days. The supplier must notify the Agency in accordance with Section 611.1059(c) when each scheduled corrective action is completed for corrections not completed by the time of submission of the assessment form.
- 4) A supplier that has failed to comply with a coliform monitoring requirement must report the monitoring violation to the Agency within 10 days after the supplier discovers the violation, and notify the public in accordance with Subpart V of this Part.
- 5) A seasonal system supplier must certify, prior to serving water to the public, that it has complied with the Agency-approved start-up procedure.
- b) Recordkeeping.
 - 1) The supplier must maintain any assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of those assessments, or other available summary documentation of the sanitary defects and corrective actions taken under Section ~~611.1058~~ 611.1059 for Agency review. This record must be maintained by the supplier for a period not less than five years after completion of the assessment or corrective action.

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Section 611.APPENDIX G NPDWR Violations and Situations Requiring Public Notice

See note 1 at the end of this Appendix G for an explanation of the Agency's authority to alter the magnitude of a violation from that set forth in the following table.

Contaminant	MCL/MRDL/TT violations ²		Monitoring & testing procedure violations	
	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

1a. Total coliform bacteria, until March 31, 2016	2	611.325(a)	3	611.521-611.525
1b. Total coliform (Monitoring or TT violations resulting from failure to perform assessments or corrective actions, monitoring violations, and reporting violations), beginning April 1, 2016	2	141.860(b) 611.1060(b)(1)	3	141.860(e) 611.1060(c)(1) 611.1060(d)(1)
1c. Seasonal system failure to follow State-approved start-up plan prior to serving water to the public or failure to provide certification to the Agency, beginning April 1, 2016	2	141.860(b)(2) 611.1060(b)(2)	3	611.1060(d)(3)
2a. Fecal coliform/E. coli, until March 31, 2016	1	611.325(b)	⁴ 1, 3	611.525
2b. E. coli (MCL, monitoring, and reporting violations), beginning April 1, 2016	1	141.860(a) 611.1060(a)	3	141.860(e) 611.1060(c) 141.860(d)(2) 611.1060(d)(2)

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2c. E. coli (TT violations resulting from failure to perform Level 2 assessments or corrective action), beginning April 1, 2016	2	141.860(b) 611.1060(b)(1)		
3. Turbidity MCL	2	611.320(a)	3	611.560
4. Turbidity MCL (average of two days ² samples greater than 5 NTU)	⁵ 2, 1	611.320(b)	3	611.560
5. Turbidity (for TT violations resulting from a single exceedence of maximum allowable turbidity level)	⁶ 2, 1	611.231(b), 611.233(b)(1), 611.250(a)(2), 611.250(b)(2), 611.250(c)(2), 611.250(d), 611.743(a)(2), 611.743(b), 611.955(b)(2)	3	611.531(a), 611.532(b), 611.533(a), 611.744, 611.956(a)(1)-(a)(3), 611.956(b)
6. Surface Water Treatment Rule violations, other than violations resulting from single exceedence of max. allowable turbidity level (TT)	2	611.211, 611.213, 611.220, 611.230-611.233, 611.240-611.242, 611.250	3	611.531-611.533
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from single exceedence of max. turbidity level (TT)	2	⁷ 611.740-611.743, 611.950-611.955	3	611.742, 611.744, 611.953, 611.954, 611.956
8. Filter Backwash Recycling Rule violations	2	611.276(c)	3	611.276(b), (d)
9. Long Term 1 Enhanced Surface Water Treatment Rule violations	2	611.950-611.955	3	611.953, 611.954, 611.956

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10. LT2ESWTR violations	2	611.1010-611.1020	¹⁹ 2, 3	611.1001-611.1005 and 611.1008-611.1009
11. Groundwater Rule violations	2	611.804	3	611.802(h)

B. Inorganic Chemicals (IOCs)

1. Antimony	2	611.301(b)	3	611.600, 611.601, 611.603
2. Arsenic	2	611.301(b)	3	611.601, 611.603
3. Asbestos (fibers greater than 10 µm)	2	611.301(b)	3	611.600, 611.601, 611.602
4. Barium	2	611.301(b)	3	611.600, 611.601, 611.603
5. Beryllium	2	611.301(b)	3	611.600, 611.601, 611.603
6. Cadmium	2	611.301(b)	3	611.600, 611.601, 611.603
7. Chromium (total)	2	611.301(b)	3	611.600, 611.601, 611.603
8. Cyanide	2	611.301(b)	3	611.600, 611.601, 611.603
9. Fluoride	2	611.301(b)	3	611.600, 611.601, 611.603
10. Mercury (inorganic)	2	611.301(b)	3	611.600, 611.601, 611.603

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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
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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

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15. Endothall	2	611.310(c)	3	611.648
16. Endrin	2	611.310(c)	3	611.648
17. Ethylene dibromide	2	611.310(c)	3	611.648
18. Glyphosate	2	611.310(c)	3	611.648
19. Heptachlor	2	611.310(c)	3	611.648
20. Heptachlor epoxide	2	611.310(c)	3	611.648
21. Hexachlorobenzene	2	611.310(c)	3	611.648
22. Hexachlorocyclopentadiene	2	611.310(c)	3	611.648
23. Lindane	2	611.310(c)	3	611.648
24. Methoxychlor	2	611.310(c)	3	611.648
25. Oxamyl (Vydate)	2	611.310(c)	3	611.648
26. Pentachlorophenol	2	611.310(c)	3	611.648
27. Picloram	2	611.310(c)	3	611.648
28. Polychlorinated biphenyls (PCBs)	2	611.310(c)	3	611.648
29. Simazine	2	611.310(c)	3	611.648
30. Toxaphene	2	611.310(c)	3	611.648

E. Volatile Organic Chemicals (VOCs)

1. Benzene	2	611.310(a)	3	611.646
2. Carbon tetrachloride	2	611.310(a)	3	611.646
3. Chlorobenzene (monochlorobenzene)	2	611.310(a)	3	611.646
4. o-Dichlorobenzene	2	611.310(a)	3	611.646
5. p-Dichlorobenzene	2	611.310(a)	3	611.646
6. 1,2-Dichloroethane	2	611.310(a)	3	611.646
7. 1,1-Dichloroethylene	2	611.310(a)	3	611.646
8. cis-1,2-Dichloroethylene	2	611.310(a)	3	611.646
9. trans-1,2-Dichloroethylene	2	611.310(a)	3	611.646
10. Dichloromethane	2	611.310(a)	3	611.646
11. 1,2-Dichloropropane	2	611.310(a)	3	611.646
12. Ethylbenzene	2	611.310(a)	3	611.646
13. Styrene	2	611.310(a)	3	611.646
14. Tetrachloroethylene	2	611.310(a)	3	611.646
15. Toluene	2	611.310(a)	3	611.646
16. 1,2,4-Trichlorobenzene	2	611.310(a)	3	611.646

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17. 1,1,1-Trichloroethane	2	611.310(a)	3	611.646
18. 1,1,2-Trichloroethane	2	611.310(a)	3	611.646
19. Trichloroethylene	2	611.310(a)	3	611.646
20. Vinyl chloride	2	611.310(a)	3	611.646
21. Xylenes (total)	2	611.310(a)	3	611.646

F. Radioactive Contaminants

1. Beta/photon emitters	2	611.330(d)	3	611.720(a), 611.732
2. Alpha emitters	2	611.330(c)	3	611.720(a), 611.731
3. Combined radium (226 & 228)	2	611.330(b)	3	611.720(a), 611.731
4. Uranium	2	611.330(e)	3	611.720(a), 611.731

G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). USEPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).¹³

1. Total trihalomethanes (TTHMs)	2	611.312 ¹¹ 611.312(b)	3	Subparts W and Y of this Part
2. Haloacetic Acids (HAA5)	2	611.312(b)	3	Subpart Y of this Part
3. Bromate	2	611.312(a)	3	611.382(a)-(b)
4. Chlorite	2	611.312(a)	3	611.382(a)-(b)
5. Chlorine (MRDL)	2	611.313(a)	3	611.382(a), (c)
6. Chloramine (MRDL)	2	611.313(a)	3	611.382(a), (c)
7. Chlorine dioxide (MRDL), where any two consecutive daily samples at entrance to distribution system only are above MRDL	2	611.313(a), 611.383(c)(3)	2 ¹² , 2 ¹² , 3	611.382(a), (c), 611.383(c)(2)

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8. Chlorine dioxide (MRDL), where samples in distribution system the next day are also above MRDL	13 <u>131</u>	611.313(a), 611.383(c)(3)	1	611.382(a), (c), 611.383(c)(2)
9. Control of DBP precursors— <u>—</u> TOC (TT)	2	611.385(a)-(b)	3	611.382(a), (d)
10. Benchmarking and disinfection profiling	N/A	N/A	3	611.742, 611.953, 611.954
11. Development of monitoring plan	N/A	N/A	3	611.382(f)

H. Other Treatment Techniques

1. Acrylamide (TT)	2	611.296	N/A	N/A
2. Epichlorohydrin (TT)	2	611.296	N/A	N/A

II. Unregulated Contaminant Monitoring: ¹⁴

A. <u>A.</u> Unregulated contaminants	N/A	N/A	3	611.510 as required by USEPA pursuant to 40 CFR 141.40
<u>B.</u> 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. <u>A.</u> Operation under relief equivalent to a SDWA section 1415 variance or a section 1416 exemption	3	¹⁵ 1415, 1416	N/A	N/A
<u>B.</u> B. Violation of condition 2 of relief equivalent to a SDWA section 1415		1415, 1416, ¹⁶ 611.111, 611.112	N/A	N/A

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variance or a section 1416 exemption				
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IV. Other Situations Requiring Public Notification.

A.		3	611.858	N/A	N/A
<u>A.</u>	Fluoride secondary maximum contaminant level (SMCL) exceedence				
<u>B.</u>	B. Exceedence of nitrate 1 MCL for a non-CWS supplier, as allowed by the Agency	1	611.300(d)	N/A	N/A
<u>C.</u>	C. Availability of unregulated contaminant monitoring data	3	611.510	as required by USEPA pursuant to 40 CFR 141.40	N/A
<u>D.</u>	D. Waterborne disease outbreak	1	611.101, 611.233(b)(2)	N/A	N/A
<u>E.</u>	E. Other waterborne emergency ¹⁷	1	N/A	N/A	N/A
<u>F.</u>	F. Source water sample positive for Groundwater Rule fecal indicators: E. coli, enterococci, or coliphage	1	611.802(g)	N/A	N/A
<u>G.</u>	G. Other situations as determined by the Agency by a SEP issued pursuant to Section 611.110	1 ¹⁸ 1, 2, 3	N/A	N/A	N/A

Appendix G— Endnotes

- Violations and other situations not listed in this table (e.g., failure to prepare Consumer Confidence Reports) do not require notice, unless otherwise determined by the Agency by a SEP issued pursuant to Section 611.110. The Agency may, by a SEP issued pursuant to Section 611.110, further require a more stringent public notice tier (e.g., Tier 1 instead of

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Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under Sections 611.902(a) and 611.903(a).

2. Definition of the abbreviations used: "MCL" means maximum contaminant level, "MRDL" means maximum residual disinfectant level, and "TT" means treatment technique.
3. The term "violations of National Primary Drinking Water Regulations (NPDWR)" is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.
4. Failure to test for fecal coliform or E. coli is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3 violations.
5. A supplier that violates the turbidity MCL of 5 NTU based on an average of measurements over two consecutive days must consult with the Agency within 24 hours after learning of the violation. Based on this consultation, the Agency may subsequently decide to issue a SEP pursuant to Section 611.110 that elevates the violation to a Tier 1 violation. If a supplier is unable to make contact with the Agency in the 24-hour period, the violation is automatically elevated to a Tier 1 violation.
6. A supplier with a treatment technique violation involving a single exceedence of a maximum turbidity limit under the Surface Water Treatment Rule (SWTR), the Interim Enhanced Surface Water Treatment Rule (IESWTR), or the Long Term 1 Enhanced Surface Water Treatment Rule are required to consult with the Agency within 24 hours after learning of the violation. Based on this consultation, the Agency may subsequently decide to issue a SEP pursuant to Section 611.110 that elevates the violation to a Tier 1 violation. If a supplier is unable to make contact with the Agency in the 24-hour period, the violation is automatically elevated to a Tier 1 violation.
7. The Surface Water Treatment Rule (SWTR) remains in effect for a supplier that serves at least 10,000 persons; the Interim Enhanced Surface Water Treatment Rule adds additional requirements and does not in many cases supercede the SWTR.
8. 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.

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9. 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.
10. A Subpart B community or non-transient non-community system supplier must comply with new DBP MCLs, disinfectant MRDLs, and related monitoring requirements. A Subpart B transient non-community system supplier that serves 10,000 or more persons that uses chlorine dioxide as a disinfectant or oxidant or a Subpart B transient non-community system supplier that serves fewer than 10,000 persons, which uses only groundwater not under the direct influence of surface water, and which uses chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL.
11. Sections 611.312(b)(1) and 611.382(a) and (b) apply until Subpart Y of this Part takes effect under the schedule set forth in Section 611.970(c).
12. 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.
13. 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.
14. Some water suppliers must monitor for certain unregulated contaminants ~~listed in 611.510~~ as required by USEPA pursuant to 40 CFR 141.40.
15. This citation refers to sections 1415 and 1416 of the federal Safe Drinking Water Act. sections 1415 and 1416 require that ~~"a~~ schedule prescribed . . . for a public water system granted relief equivalent to a SDWA section 1415 variance or a section 1416 exemption must require compliance by the system . . ." ~~"~~
16. In addition to sections 1415 and 1416 of the federal Safe Drinking Water Act, 40 CFR 142.307 specifies the items and schedule milestones that must be included in relief equivalent to a SDWA section 1415 small system variance. In granting any form of relief from an NPDWR, the Board will consider all applicable federal requirements for and limitations on the State's ability to grant relief consistent with federal law.

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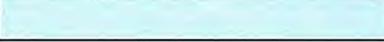
17. Other waterborne emergencies require a Tier 1 public notice under Section 611.902(a) for situations that do not meet the definition of a waterborne disease outbreak given in Section 611.101, but which still have the potential to have serious adverse effects on health as a result of short-term exposure. 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.
18. The Agency may place any other situation in any tier it deems appropriate in writing, based on the prospective threat which it determines that the situation poses to public health, and subject to Board review pursuant to Section 40 of the Act [415 ILCS 5/40].
19. A failure to collect three or more samples for Cryptosporidium analysis is a Tier 2 violation requiring special notice, as specified in Section 611.911. All other monitoring and testing procedure violations are Tier 3.

BOARD NOTE: Derived from Appendix A to Subpart Q to 40 CFR 141 (~~2013~~[2014](#)). (~~2014~~).

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

4
5 PART 611
6 PRIMARY DRINKING WATER STANDARDS

7
8 SUBPART A: GENERAL
9

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12	611.101	Definitions
13	611.102	Incorporations by Reference
14	611.103	Severability
15	611.105	Electronic Reporting
16	611.107	Agency Inspection of PWS Facilities
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19	611.110	Special Exception Permits
20	611.111	Relief Equivalent to SDWA Section 1415(a) Variances
21	611.112	Relief Equivalent to SDWA Section 1416 Exemptions
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25	611.120	Effective Dates
26	611.121	Maximum Contaminant Levels and Finished Water Quality
27	611.125	Fluoridation Requirement
28	611.126	Prohibition on Use of Lead
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76	611.301	Revised MCLs for Inorganic Chemical Contaminants
77	611.310	State-Only Maximum Contaminant Levels (MCLs) for Organic Chemical
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79	611.311	Revised MCLs for Organic Chemical Contaminants
80	611.312	Maximum Contaminant Levels (MCLs) for Disinfection Byproducts (DBPs)
81	611.313	Maximum Residual Disinfectant Levels (MRDLs)
82	611.320	Turbidity (Repealed)
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- 173 611.648 Phase II, Phase IIB, and Phase V Synthetic Organic Contaminants
- 174 611.650 Monitoring for 36 Contaminants (Repealed)
- 175 611.657 Analytical Methods for 36 Contaminants (Repealed)
- 176 611.658 Special Monitoring for Organic Chemicals (Repealed)

177
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- 182 611.683 Reduced Monitoring Frequency (Repealed)
- 183 611.684 Averaging (Repealed)
- 184 611.685 Analytical Methods (Repealed)
- 185 611.686 Modification to System (Repealed)
- 186 611.687 Sampling for THM Potential (Repealed)
- 187 611.688 Applicability Dates (Repealed)

188
189 SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

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- 206 611.745 Reporting and Recordkeeping Requirements

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 222 611.832 Notice by Agency (Repealed)
 223 611.833 Cross Connection Reporting
 224 611.840 Reporting
 225 611.851 Reporting MCL, MRDL, and other Violations (Repealed)
 226 611.852 Reporting other Violations (Repealed)
 227 611.853 Notice to New Billing Units (Repealed)
 228 611.854 General Content of Public Notice (Repealed)
 229 611.855 Mandatory Health Effects Language (Repealed)
 230 611.856 Fluoride Notice (Repealed)
 231 611.858 Fluoride Secondary Standard (Repealed)
 232 611.860 Record Maintenance
 233 611.870 List of 36 Contaminants (Repealed)

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 235 SUBPART U: CONSUMER CONFIDENCE REPORTS
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 255 611.908 Special Notice for Exceedence of the Fluoride Secondary Standard
 256 611.909 Special Notice for Nitrate Exceedences above the MCL by a Non-Community
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270
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297 on Subpart I Results
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299
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313		Making a Significant Change in Disinfection Practice
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315		Disinfection Profile and Benchmark
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322		Cryptosporidium Treatment Requirements
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326		for Meeting Cryptosporidium Treatment Requirements
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335		Components
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348		People Using Only Groundwater
349	611.1055	Routine Monitoring Requirements for CWSs That Serve 1,000 or Fewer People
350		Using Only Groundwater
351	611.1056	Routine Monitoring Requirements for Subpart B Systems That Serve 1,000 or
352		Fewer People
353	611.1057	Routine Monitoring Requirements for PWSs That Serve More Than 1,000 People
354	611.1058	Repeat Monitoring and E. coli Requirements
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386		

387 AUTHORITY: Implementing Sections 7.2, 17, and 17.5 and authorized by Section 27 of the
 388 Environmental Protection Act [415 ILCS 5/7.2, 17, 17.5, and 27].
 389

390 SOURCE: Adopted in R88-26 at 14 Ill. Reg. 16517, effective September 20, 1990; amended in
 391 R90-21 at 14 Ill. Reg. 20448, effective December 11, 1990; amended in R90-13 at 15 Ill. Reg.
 392 1562, effective January 22, 1991; amended in R91-3 at 16 Ill. Reg. 19010, effective December 1,
 393 1992; amended in R92-3 at 17 Ill. Reg. 7796, effective May 18, 1993; amended in R93-1 at 17
 394 Ill. Reg. 12650, effective July 23, 1993; amended in R94-4 at 18 Ill. Reg. 12291, effective July
 395 28, 1994; amended in R94-23 at 19 Ill. Reg. 8613, effective June 20, 1995; amended in R95-17
 396 at 20 Ill. Reg. 14493, effective October 22, 1996; amended in R98-2 at 22 Ill. Reg. 5020,
 397 effective March 5, 1998; amended in R99-6 at 23 Ill. Reg. 2756, effective February 17, 1999;
 398 amended in R99-12 at 23 Ill. Reg. 10348, effective August 11, 1999; amended in R00-8 at 23 Ill.
 399 Reg. 14715, effective December 8, 1999; amended in R00-10 at 24 Ill. Reg. 14226, effective
 400 September 11, 2000; amended in R01-7 at 25 Ill. Reg. 1329, effective January 11, 2001;
 401 amended in R01-20 at 25 Ill. Reg. 13611, effective October 9, 2001; amended in R02-5 at 26 Ill.
 402 Reg. 3522, effective February 22, 2002; amended in R03-4 at 27 Ill. Reg. 1183, effective January
 403 10, 2003; amended in R03-15 at 27 Ill. Reg. 16447, effective October 10, 2003; amended in
 404 R04-3 at 28 Ill. Reg. 5269, effective March 10, 2004; amended in R04-13 at 28 Ill. Reg. 12666,
 405 effective August 26, 2004; amended in R05-6 at 29 Ill. Reg. 2287, effective January 28, 2005;
 406 amended in R06-15 at 30 Ill. Reg. 17004, effective October 13, 2006; amended in R07-2/R07-11
 407 at 31 Ill. Reg. 11757, effective July 27, 2007; amended in R08-7/R08-13 at 33 Ill. Reg. 633,
 408 effective December 30, 2008; amended in R10-1/R10-17/R11-6 at 34 Ill. Reg. 19848, effective
 409 December 7, 2010; amended in R12-4 at 36 Ill. Reg. 7110, effective April 25, 2012; amended in
 410 R13-2 at 37 Ill. Reg. 1978, effective February 4, 2013; amended in R14-8 at 38 Ill. Reg. 3608,
 411 effective January 27, 2014; amended in R14-9 at 38 Ill. Reg. 9792, effective April 21, 2014;
 412 amended in R15-6 at 39 Ill. Reg. _____, effective _____.
 413

414 SUBPART A: GENERAL
 415

416 **Section 611.102 Incorporations by Reference**
 417

- 418 a) Abbreviations and short-name listing of references. The following names and
 419 abbreviated names, presented in alphabetical order, are used in this Part to refer to
 420 materials incorporated by reference:
 421

422 "AMI Turbiwell Method" means "Continuous Measurement of Turbidity
 423 Using a SWAN AMI Turbiwell Turbidimeter," available from NEMI or
 424 from SWAN Analytische Instrumente AG.
 425

426 "ASTM Method" means a method published by and available from the
 427 American Society for Testing and Materials (ASTM).
 428

429 "ChlordioX Plus Test" means "Chlorine Dioxide and Chlorite in Drinking
430 Water by Amperometry using Disposable Sensors," available from
431 Palintest Ltd.

432
433 "Charm Fast Phage" means "Fast Phage Test Procedure.
434 Presence/Absence for Coliphage in Ground Water with Same Day Positive
435 Prediction," version 009 (Nov. 2012), available from Charm Sciences, Inc.

436
437 "Colilert® Test" means Standard Methods, 21st ed., Method 9223 B,
438 Chromogenic Substrate Coliform Test (using IDEXX Laboratories, Inc.
439 Colilert® medium).

440
441 "Colilert-18® Test" means Standard Methods, 21st ed., Method 9223 B,
442 Chromogenic Substrate Coliform Test (using IDEXX Laboratories, Inc.
443 Colilert-18® medium).

444
445 "Colisure™ Test" means "Colisure Presence/Absence Test for Detection
446 and Identification of Coliform Bacteria and Escherichia Coli in Drinking
447 Water," available from IDEXX Laboratories, Inc.

448
449 "Colitag® Test" means "Colitag® Product as a Test for Detection and
450 Identification of Coliforms and E. coli Bacteria in Drinking Water and
451 Source Water as Required in National Primary Drinking Water
452 Regulations," available from CPI International.

453
454 "Chromocult® Method" means "Chromocult® Coliform Agar
455 Presence/Absence Membrane Filter Test Method for Detection and
456 Identification of Coliform Bacteria and Escherichia coli in Finished
457 Waters," available from EMD Millipore.

458
459 "Determination of Inorganic Oxyhalide" means "Determination of
460 Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using
461 Ion Chromatography with the Addition of a Postcolumn Reagent for Trace
462 Bromate Analysis," available from NTIS.

463
464 "Dioxin and Furan Method 1613" means "Tetra- through Octa-Chlorinated
465 Dioxins and Furans by Isotope-Dilution HRGC/HRMS," available from
466 NTIS.

467
468 "E*Colite Test" means "Charm E*Colite Presence/Absence Test for
469 Detection and Identification of Coliform Bacteria and Escherichia coli in
470 Drinking Water," available from Charm Sciences, Inc. and USEPA, Water
471 Resource Center.

472
473 "EC-MUG" means "Method 9221 F: Multiple-Tube Fermentation
474 Technique for Members of the Coliform Group, Escherichia coli
475 Procedure (Proposed)," available from American Public Health
476 Association and American Waterworks Association.
477
478 "EML Procedures Manual" means "EML Procedures Manual, HASL
479 300," available from USDOE, EML.
480
481 "Enterolert" means "Evaluation of Enterolert for Enumeration of
482 Enterococci in Recreational Waters," available from American Society for
483 Microbiology.
484
485 "Georgia Radium Method" means "The Determination of Radium-226 and
486 Radium-228 in Drinking Water by Gamma-ray Spectrometry Using HPGE
487 or Ge(Li) Detectors," Revision 1.2, December 2004, available from the
488 Georgia Tech Research Institute.
489
490 "GLI Method 2" means GLI Method 2, "Turbidity," Nov. 2, 1992,
491 available from Great Lakes Instruments, Inc.
492
493 "Guidance Manual for Filtration and Disinfection" means "Guidance
494 Manual for Compliance with the Filtration and Disinfection Requirements
495 for Public Water Systems using Surface Water Sources," March 1991,
496 available from USEPA, NSCEP.
497
498 "Hach FilterTrak Method 10133" means "Determination of Turbidity by
499 Laser Nephelometry," available from Hach Co.
500
501 "Hach Method 10260" means "Hach Method 10260 – Determination of
502 Chlorinated Oxidants (Free and Total) in Water Using Disposable Planar
503 Reagent-filled Cuvettes and Mesofluic Channel Colorimetry," available
504 from the Hach Company.
505
506 "Hach SPDANS 2 Method 10225" means "Hach Company SPADNS 2
507 (Arsenic-free) Fluoride Method 10225 – Spectrophotometric
508 Measurement of Fluoride in Water and Wastewater," available from the
509 Hach Co.
510
511 "Hach TNTplus 835/836 Method 10206" means "Hach Company TNTplus
512 835/836 Nitrate Method 10206 – Spectrophotometric Measurement of
513 Nitrate in Water and Wastewater," available from the Hach Co.
514

515 "ITS Method D99-003" means Method D99-003, Revision 3.0, "Free
516 Chlorine Species (HOCl and OCl) by Test Strip," available from
517 Industrial Test Systems, Inc.
518
519 "Kelada 01" means "Kelada Automated Test Methods for Total Cyanide,
520 Acid Dissociable Cyanide, And Thiocyanate," Revision 1.2, available
521 from NTIS.
522
523 "m-ColiBlue24 Test" means "Total Coliforms and E. coli Membrane
524 Filtration Method with m-ColiBlue24® Broth," available from USEPA,
525 Water Resource Center and Hach Company.
526
527 "Method ME355.01" means "Determination of Cyanide in Drinking Water
528 by GC/MS Headspace Analysis," available from NEMI or from H&E
529 Testing Laboratory.
530
531 "Mitchell Method M5271" means "Determination of Turbidity by Laser
532 Nephelometry," available from NEMI and Leck Mitchell, PhD.
533
534 "Mitchell Method M5331" means "Determination of Turbidity by LED
535 Nephelometry," available from NEMI and Leck Mitchell, PhD.
536
537 "Modified Colitag™ ~~Test Method~~" means "Modified Colitag™ Test
538 Method for Simultaneous Detection of E. coli and other Total Coliforms in
539 Water," available from NEMI and CPI International.
540
541 "NA-MUG" means "Method 9222 G: Membrane Filter Technique for
542 Members of the Coliform Group, MF Partition Procedures," available
543 from American Public Health Association and American Waterworks
544 Association.
545
546 "NCRP Report Number 22" means "Maximum Permissible Body Burdens
547 and Maximum Permissible Concentrations of Radionuclides in Air and in
548 Water for Occupational Exposure," available from NCRP.
549
550 "New Jersey Radium Method" means "Determination of Radium 228 in
551 Drinking Water," available from the New Jersey Department of
552 Environmental Protection.
553
554 "New York Radium Method" means "Determination of Ra-226 and Ra-
555 228 (Ra-02)," available from the New York Department of Public Health.
556

557 "OI Analytical Method OIA-1677" means "Method OIA-1677, DW
558 Available Cyanide by Flow Injection, Ligand Exchange, and
559 Amperometry," available from ALPKEM, Division of OI Analytical.
560

561 "ONPG-MUG Test" (meaning "minimal medium ortho-nitrophenyl-beta-
562 d-galactopyranoside-4-methyl-umbelliferyl -beta-d-glucuronide test"),
563 also called the "Autoanalysis-Colilert® Test System," is Method 9223,
564 available in "Standard Methods for the Examination of Water and
565 Wastewater," 18th, 19th, 20th, or 21st ed., from American Public Health
566 Association and the American Water Works Association.
567

568 "Orion Method AQ4500" means "Determination of Turbidity by LED
569 Nephelometry," available from Thermo Scientific.
570

571 "Palintest ChloroSense" means "Measurement of Free and Total Chlorine
572 in Drinking Water by Palintest ChloroSense," available from NEMI or
573 Palintest Ltd.
574

575 "Palintest Method 1001" means "'Lead in Drinking Water by Differential
576 Pulse Anodic Stripping Voltammetry', Method Number 1001," available
577 from Palintest, Ltd. or the Hach Company.
578

579 "QuikChem Method 10-204-00-1-X" means "Digestion and distillation of
580 total cyanide in drinking and wastewaters using MICRO DIST and
581 determination of cyanide by flow injection analysis," available from
582 Lachat Instruments.
583

584 "Readycult® 2000" means "Readycult Coliforms 100 Presence/Absence
585 Test for Detection and Identification of Coliform Bacteria and Escherichia
586 coli in Finished Waters," v. 1.0, available from EMD Millipore.
587

588 "Readycult® 2007" means "Readycult® Coliforms 100 Presence/Absence
589 Test for Detection and Identification of Coliform Bacteria and Escherichia
590 coli in Finished Waters," v. 1.1, available from EMD Millipore.
591

592 "SimPlate Method" means "IDEXX SimPlate™ HPC Test Method for
593 Heterotrophs in Water," available from IDEXX Laboratories, Inc.
594

595 "Standard Methods" means "Standard Methods for the Examination of
596 Water and Wastewater," available from the American Public Health
597 Association or the American Waterworks Association.
598

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

602
603 "Syngenta AG-625" means "Atrazine in Drinking Water by
604 Immunoassay," February 2001 is available from Syngenta Crop
605 Protection, Inc.

606
607 "Systea Easy (1-Reagent)" means "Systea Easy (1-Reagent) Nitrate
608 Method," available from NEMI or Systea Scientific LLC.

609
610 "Technical Bulletin 601" means "Technical Bulletin 601, Standard
611 Method of Testing for Nitrate in Drinking Water," July 1994, available
612 from Thermo Scientific.

613
614 "Technicon Methods" means "Fluoride in Water and Wastewater,"
615 available from Bran & Luebbe.

616
617 "Tecta EC/TC P-A Test" means "Tecta EC/TC P-A Test –
618 Presence/Absence Method for Simultaneous Detection of Total Coliforms
619 and Escherichia coli (E. coli) in Drinking Water," available from Veolia
620 Water Solutions and Technologies.

621
622 "USEPA Asbestos Method 100.1" means Method 100.1, "Analytical
623 Method for Determination of Asbestos Fibers in Water," September 1983,
624 available from NTIS.

625
626 "USEPA Asbestos Method 100.2" means Method 100.2, "Determination
627 of Asbestos Structures over 10-mm in Length in Drinking Water," June
628 1994, available from NTIS.

629
630 "USEPA Environmental Inorganic Methods" means "Methods for the
631 Determination of Inorganic Substances in Environmental Samples,"
632 August 1993, available from NTIS.

633
634 "USEPA Environmental Metals Methods" means "Methods for the
635 Determination of Metals in Environmental Samples," available from
636 NTIS.

637
638 "USEPA Inorganic Methods" means "Methods for Chemical Analysis of
639 Water and Wastes," March 1983, available from NTIS.

640
641 "USEPA Interim Radiochemical Methods" means "Interim Radiochemical

642 Methodology for Drinking Water," EPA 600/4-75/008 (revised), March
643 1976. Available from NTIS.

644
645 "USEPA Method 1600" means "Method 1600: Enterococci in Water by
646 Membrane Filtration Using Membrane-Enterococcus Indoxyl-b-D-
647 Glucoside Agar (mEI)," available from USEPA, Water Resource Center.

648
649 "USEPA Method 1601" means "Method 1601: Male-specific (F⁺) and
650 Somatic Coliphage in Water by Two-step Enrichment Procedure,"
651 available from USEPA, Water Resource Center.

652
653 "USEPA Method 1602" means "Method 1602: Male-specific (F⁺) and
654 Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure,"
655 available from USEPA, Water Resource Center.

656
657 "USEPA Method 1604" means "Method 1604: Total Coliforms and
658 Escherichia coli in Water by Membrane Filtration Using a Simultaneous
659 Detection Technique (MI Medium)," available from USEPA, Water
660 Resource Center.

661
662 "USEPA NERL Method 200.5 (rev. 4.2)" means Method 200.5, Revision
663 4.2, "Determination of Trace Elements in Drinking Water by Axially
664 Viewed Inductively Coupled Plasma – Atomic Emission Spectrometry,"
665 October 2003, EPA 600/R-06/115. Available from USEPA, Office of
666 Research and Development.

667
668 "USEPA NERL Method 415.3 (rev. 1.1)" means Method 415.3, Revision
669 1.1, "Determination of Total Organic Carbon and Specific UV Absorbance
670 at 254 nm in Source Water and Drinking Water," USEPA, February 2005,
671 EPA 600/R-05/055. Available from USEPA, Office of Research and
672 Development.

673
674 "USEPA NERL Method 415.3 (rev. 1.2)" means Method 415.3, Revision
675 1.2, "Determination of Total Organic Carbon and Specific UV Absorbance
676 at 254 nm in Source Water and Drinking Water," USEPA, September
677 2009, EPA 600/R-09/122. Available from USEPA, Office of Research
678 and Development.

679
680 "USEPA NERL Method 525.3 (ver. 1.0)" means Method 525.3, Version
681 1.0, "Determination of Total Semivolatile Organic Chemicals in Drinking
682 Water by Solid Phase Extraction and Capillary Column Gas
683 Chromatography/Mass Spectrometry (GC/MS)," USEPA, February 2012,

684 EPA 600/R-12/010. Available from USEPA, Office of Research and
 685 Development.

686
 687 "USEPA NERL Method 549.2" means Method 549.2, Revision 1.0,
 688 "Determination of Diquat and Paraquat in Drinking Water by Liquid-Solid
 689 Extraction and High Performance Liquid Chromatography with
 690 Ultraviolet Detection," June 1997. Available from USEPA, Office of
 691 Research and Development.

692
 693 "USEPA OGWDW Methods" means the methods listed as available from
 694 the USEPA, Office of Ground Water and Drinking Water (Methods 302.0,
 695 317.0 (rev. 2.0), 326.0 (rev. 1.0), 327.0 (rev. 1.1), 334.0, 515.4 (rev. 1.0),
 696 524.3 (rev. 1.0), 524.4, 531.2 (rev. 1.0), 536 (rev. 1.0) 552.3 (rev. 1.0),
 697 557, 1622 (99), 1622 (01), 1622 (05), 1623 (99), 1623 (01), 1623 (05), and
 698 1623.1). Available from NTIS; USEPA, NSCEP; or USEPA, OGWDW.

699
 700 "USEPA Organic Methods" means "Methods for the Determination of
 701 Organic Compounds in Drinking Water," December 1988 (revised July
 702 1991) (Methods 508A (rev. 1.0) and 515.1 (rev. 4.0)); "Methods for the
 703 Determination of Organic Compounds in Drinking Water – Supplement
 704 I," July 1990 (Methods 547, 550, and 550.1); "Methods for the
 705 Determination of Organic Compounds in Drinking Water – Supplement
 706 II," August 1992 (Methods 548.1 (rev. 1.0), 552.1 (rev. 1.0), and 555 (rev.
 707 1.0)); and "Methods for the Determination of Organic Compounds in
 708 Drinking Water – Supplement III," August 1995 (Methods 502.2 (rev.
 709 2.1), 504.1 (rev. 1.1), 505 (rev. 2.1), 506 (rev. 1.1), 507 (rev. 2.1), 508
 710 (rev. 3.1), 508.1 (rev. 2.0), 515.2 (rev. 1.1), 524.2 (rev. 4.1), 525.2 (rev.
 711 2.0), 531.1 (rev. 3.1), 551.1 (rev. 1.0), and 552.2 (rev. 1.0)). Available
 712 from NTIS; USEPA, NSCEP; or USEPA, EMSL.

713
 714 "USEPA Organic and Inorganic Methods" means "Methods for the
 715 Determination of Organic and Inorganic Compounds in Drinking Water,
 716 Volume 1," EPA 815/R-00/014, PB2000-106981, August 2000. Available
 717 from NTIS.

718
 719 "USEPA Radioactivity Methods" means "Prescribed Procedures for
 720 Measurement of Radioactivity in Drinking Water," EPA 600/4-80/032,
 721 August 1980. Available from NTIS.

722
 723 "USEPA Radiochemical Analyses" means "Radiochemical Analytical
 724 Procedures for Analysis of Environmental Samples," March 1979.
 725 Available from NTIS.

726

727 "USEPA Radiochemistry Procedures" means "Radiochemistry Procedures
728 Manual," EPA 520/5-84/006, December 1987. Available from NTIS.

729
730 "USEPA Technical Notes" means "Technical Notes on Drinking Water
731 Methods," available from NTIS and USEPA, NSCEP.

732
733 "USGS Methods" means "Methods of Analysis by the U.S. Geological
734 Survey National Water Quality Laboratory – Determination of Inorganic
735 and Organic Constituents in Water and Fluvial Sediments," available from
736 NTIS and USGS.

737
738 "Waters Method B-1011" means "Waters Test Method for the
739 Determination of Nitrite/Nitrate in Water Using Single Column Ion
740 Chromatography," available from Waters Corporation, Technical Services
741 Division.

742
743 b) The Board incorporates the following publications by reference:

744
745 ALPKEM, Division of OI Analytical, P.O. Box 9010, College Station, TX
746 77842-9010, telephone: 979-690-1711, Internet: www.oico.com.

747
748 "Method OIA-1677 DW, Available Cyanide by Flow Injection,
749 Ligand Exchange, and Amperometry," EPA 821/R-04/001,
750 January 2004 (referred to as "OI Analytical Method OIA-1677"),
751 referenced in Section 611.611.

752 BOARD NOTE: Also available online for download from
753 [www.epa.gov/waterscience/methods/method/cyanide/1677-](http://www.epa.gov/waterscience/methods/method/cyanide/1677-2004.pdf)
754 [2004.pdf](http://www.epa.gov/waterscience/methods/method/cyanide/1677-2004.pdf).

755
756 APHA. American Public Health Association, 1015 Fifteenth Street NW,
757 Washington, DC 20005 202-777-2742.

758
759 "Standard Methods for the Examination of Water and
760 Wastewater," 16th Edition, 1985 (referred to as "Standard Methods,
761 16th ed."). See the methods listed separately for the same
762 references under American Waterworks Association.

763
764 "Standard Methods for the Examination of Water and
765 Wastewater," 17th Edition, 1989 (referred to as "Standard Methods,
766 17th ed."). See the methods listed separately for the same
767 references under American Waterworks Association.

768
769 "Standard Methods for the Examination of Water and

770 Wastewater," 18th Edition, 1992, including "Supplement to the 18th
771 Edition of Standard Methods for the Examination of Water and
772 Wastewater," 1994 (collectively referred to as "Standard Methods,
773 18th ed."). See the methods listed separately for the same
774 references under American Waterworks Association.

775
776 "Standard Methods for the Examination of Water and
777 Wastewater," 19th Edition, 1995 (referred to as "Standard
778 Methods, 19th ed."). See the methods listed separately for the
779 same references under American Waterworks Association.

780
781 "Standard Methods for the Examination of Water and
782 Wastewater," 20th Edition, 1998 (referred to as "Standard Methods,
783 20th ed."). See the methods listed separately for the same
784 references under American Waterworks Association.

785
786 "Standard Methods for the Examination of Water and
787 Wastewater," 21st Edition, 2005 (referred to as "Standard Methods,
788 21st ed."). See the methods listed separately for the same
789 references under American Waterworks Association.

790
791 "Standard Methods for the Examination of Water and
792 Wastewater," 22nd Edition, 2012 (referred to as "Standard
793 Methods, 22nd ed."). See the methods listed separately for the
794 same references under American Waterworks Association.

795
796 American Society for Microbiology, 1752 N Street N.W., Washington,
797 DC 20036, 202-737-3600:

798
799 "Evaluation of Enterolert for Enumeration of Enterococci in
800 Recreational Waters," Applied and Environmental Microbiology,
801 Oct. 1996, vol. 62, no. 10, p. 3881 (referred to as "Enterolert"),
802 referenced in Section 611.802.

803
804 BOARD NOTE: At the table to 40 CFR 141.402(c)(2), USEPA
805 approved the method as described in the above literature review.
806 The method itself is embodied in the printed instructions to the
807 proprietary kit available from IDEXX Laboratories, Inc.
808 (accessible on-line and available by download from www.asm.org,
809 as "Enterolert™ Procedure"). ASTM approved the method as
810 "Standard Test Method for Enterococci in Water Using
811 Enterolert™," which is available in two versions from ASTM:
812 ASTM Method D6503-99 (superseded) and ASTM Method

813 D6503-99. While it is more conventional to incorporate the
814 method as presented in the kit instructions or as approved by
815 ASTM by reference, the Board is constrained to incorporate the
816 version that appears in the technical literature by reference, which
817 is the version that USEPA has explicitly approved.
818

819 AWWA. American Water Works Association et al., 6666 West Quincy
820 Ave., Denver, CO 80235 (303-794-7711).
821

822 "National Field Evaluation of a Defined Substrate Method for the
823 Simultaneous Enumeration of Total Coliforms and Escherichia coli
824 for Drinking Water: Comparison with the Standard Multiple Tube
825 Fermentation Method," S.C. Edberg, M.J. Allen & D.B. Smith,
826 Applied Environmental Microbiology, vol. 54, iss. 6, pp 1595-
827 1601 (1988), referenced in Appendix D to this Part.
828

829 "Standard Methods for the Examination of Water and
830 Wastewater," 13th Edition, 1971 (referred to as "Standard Methods,
831 13th ed.").

832 Method 302, Gross Alpha and Gross Beta Radioactivity in
833 Water (Total, Suspended, and Dissolved), referenced in
834 Section 611.720.
835

836 Method 303, Total Radioactive Strontium and Strontium 90
837 in Water, referenced in Section 611.720.
838

839 Method 304, Radium in Water by Precipitation, referenced
840 in Section 611.720.
841

842 Method 305, Radium 226 by Radon in Water (Soluble,
843 Suspended, and Total), referenced in Section 611.720.
844

845 Method 306, Tritium in Water, referenced in Section
846 611.720.
847

848 "Standard Methods for the Examination of Water and
849 Wastewater," 16th Edition, 1985 (referred to as "Standard Methods,
850 16th ed.").

851 Method 907A, Heterotrophic Plate Count, Pour Plate
852 Method, referenced in Section 611.213.
853
854
855

856 "Standard Methods for the Examination of Water and
857 Wastewater," 17th Edition, 1989 (referred to as "Standard Methods,
858 17th ed.").

859

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

863

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

866

867 Method 7500-³H B, Tritium in Water, referenced in Section
868 611.720.

869

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

872

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

875

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

878

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

881

882 Method 7500-Ra C, Radium 226 by Radon in Water
883 (Soluble, Suspended, and Total), referenced in Section
884 611.720.

885

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

888

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

891

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

894

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

897

898 "Standard Methods for the Examination of Water and

899	Wastewater," 18 th Edition, 1992 (referred to as "Standard Methods,
900	18 th ed.").
901	
902	Method 2130 B, Turbidity, Nephelometric Method,
903	referenced in Section 611.531.
904	
905	Method 2320 B, Alkalinity, Titration Method, referenced in
906	Section 611.611.
907	
908	Method 2510 B, Conductivity, Laboratory Method,
909	referenced in Section 611.611.
910	
911	Method 2550, Temperature, Laboratory and Field Methods,
912	referenced in Section 611.611.
913	
914	Method 3111 B, Metals by Flame Atomic Absorption
915	Spectrometry, Direct Air-Acetylene Flame Method,
916	referenced in Sections 611.611 and 611.612.
917	
918	Method 3111 D, Metals by Flame Atomic Absorption
919	Spectrometry, Direct Nitrous Oxide-Acetylene Flame
920	Method, referenced in Section 611.611.
921	
922	Method 3112 B, Metals by Cold-Vapor Atomic Absorption
923	Spectrometry, Cold-Vapor Atomic Absorption
924	Spectrometric Method, referenced in Section 611.611.
925	
926	Method 3113 B, Metals by Electrothermal Atomic
927	Absorption Spectrometry, Electrothermal Atomic
928	Absorption Spectrometric Method, referenced in Sections
929	611.611 and 611.612.
930	
931	Method 3114 B, Metals by Hydride Generation/Atomic
932	Absorption Spectrometry, Manual Hydride
933	Generation/Atomic Absorption Spectrometric Method,
934	referenced in Section 611.611.
935	
936	Method 3120 B, Metals by Plasma Emission Spectroscopy,
937	Inductively Coupled Plasma (ICP) Method, referenced in
938	Sections 611.611 and 611.612.
939	
940	Method 3500-Ca D, Calcium, EDTA Titrimetric Method,
941	referenced in Section 611.611.

942	
943	Method 3500-Mg E, Magnesium, Calculation Method,
944	referenced in Section 611.611.
945	
946	Method 4110 B, Determination of Anions by Ion
947	Chromatography, Ion Chromatography with Chemical
948	Suppression of Eluent Conductivity, referenced in Section
949	611.611.
950	
951	Method 4500-CN ⁻ C, Cyanide, Total Cyanide after
952	Distillation, referenced in Section 611.611.
953	
954	Method 4500-CN ⁻ E, Cyanide, Colorimetric Method,
955	referenced in Section 611.611.
956	
957	Method 4500-CN ⁻ F, Cyanide, Cyanide-Selective Electrode
958	Method, referenced in Section 611.611.
959	
960	Method 4500-CN ⁻ G, Cyanide, Cyanides Amenable to
961	Chlorination after Distillation, referenced in Section
962	611.611.
963	
964	Method 4500-Cl D, Chlorine, Amperometric Titration
965	Method, referenced in Section 611.531.
966	
967	Method 4500-Cl E, Chlorine, Low-Level Amperometric
968	Titration Method, referenced in Section 611.531.
969	
970	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric
971	Method, referenced in Section 611.531.
972	
973	Method 4500-Cl G, Chlorine, DPD Colorimetric Method,
974	referenced in Section 611.531.
975	
976	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS)
977	Method, referenced in Section 611.531.
978	
979	Method 4500-Cl I, Chlorine, Iodometric Electrode Method,
980	referenced in Section 611.531.
981	
982	Method 4500-ClO ₂ C, Chlorine Dioxide, Amperometric
983	Method I, referenced in Section 611.531.
984	

985	Method 4500-ClO ₂ D, Chlorine Dioxide, DPD Method, referenced in Section 611.531.
986	
987	
988	Method 4500-ClO ₂ E, Chlorine Dioxide, Amperometric Method II (Proposed), referenced in Section 611.531.
989	
990	
991	Method 4500-F ⁻ B, Fluoride, Preliminary Distillation Step, referenced in Section 611.611.
992	
993	
994	Method 4500-F ⁻ C, Fluoride, Ion-Selective Electrode Method, referenced in Section 611.611.
995	
996	
997	Method 4500-F ⁻ D, Fluoride, SPADNS Method, referenced in Section 611.611.
998	
999	
1000	Method 4500-F ⁻ E, Fluoride, Complexone Method, referenced in Section 611.611.
1001	
1002	
1003	Method 4500-H ⁺ B, pH Value, Electrometric Method, referenced in Section 611.611.
1004	
1005	
1006	Method 4500-NO ₂ ⁻ B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.
1007	
1008	
1009	Method 4500-NO ₃ ⁻ D, Nitrogen (Nitrate), Nitrate Electrode Method, referenced in Section 611.611.
1010	
1011	
1012	Method 4500-NO ₃ ⁻ E, Nitrogen (Nitrate), Cadmium Reduction Method, referenced in Section 611.611.
1013	
1014	
1015	Method 4500-NO ₃ ⁻ F, Nitrogen (Nitrate), Automated Cadmium Reduction Method, referenced in Section 611.611.
1016	
1017	
1018	Method 4500-O ₃ B, Ozone (Residual) (Proposed), Indigo Colorimetric Method, referenced in Section 611.531.
1019	
1020	
1021	Method 4500-P E, Phosphorus, Ascorbic Acid Method, referenced in Section 611.611.
1022	
1023	
1024	Method 4500-P F, Phosphorus, Automated Ascorbic Acid Reduction Method, referenced in Section 611.611.
1025	
1026	
1027	

1028	Method 4500-Si D, Silica, Molybdosilicate Method,
1029	referenced in Section 611.611.
1030	
1031	Method 4500-Si E, Silica, Heteropoly Blue Method,
1032	referenced in Section 611.611.
1033	
1034	Method 4500-Si F, Silica, Automated Method for
1035	Molybdate-Reactive Silica, referenced in Section 611.611.
1036	
1037	Method 6651 <u>B</u> , Glyphosate Herbicide (Proposed),
1038	referenced in Section 611.645.
1039	
1040	Method 7110 B, Gross Alpha and Beta Radioactivity
1041	(Total, Suspended, and Dissolved), Evaporation Method for
1042	Gross Alpha-Beta, referenced in Section 611.720.
1043	
1044	Method 7110 C, Gross Alpha and Beta Radioactivity
1045	(Total, Suspended, and Dissolved), Coprecipitation Method
1046	for Gross Alpha Radioactivity in Drinking Water
1047	(Proposed), referenced in Section 611.720.
1048	
1049	Method 7500-Cs B, Radioactive Cesium, Precipitation
1050	Method, referenced in Section 611.720.
1051	
1052	Method 7500- ³ H B, Tritium, Liquid Scintillation
1053	Spectrometric Method, referenced in Section 611.720.
1054	
1055	Method 7500-I B, Radioactive Iodine, Precipitation
1056	Method, referenced in Section 611.720.
1057	
1058	Method 7500-I C, Radioactive Iodine, Ion-Exchange
1059	Method, referenced in Section 611.720.
1060	
1061	Method 7500-I D, Radioactive Iodine, Distillation Method,
1062	referenced in Section 611.720.
1063	
1064	Method 7500-Ra B, Radium, Precipitation Method,
1065	referenced in Section 611.720.
1066	
1067	Method 7500-Ra C, Radium, Emanation Method,
1068	referenced in Section 611.720.
1069	
1070	Method 7500-Ra D, Radium, Sequential Precipitation

1071	Method (Proposed), referenced in Section 611.720.
1072	
1073	Method 7500-Sr B, Total Radioactive Strontium and
1074	Strontium 90, Precipitation Method, referenced in Section
1075	611.720.
1076	
1077	Method 7500-U B, Uranium, Radiochemical Method
1078	(Proposed), referenced in Section 611.720.
1079	
1080	Method 7500-U C, Uranium, Isotopic Method (Proposed),
1081	referenced in Section 611.720.
1082	
1083	Method 9215 B, Heterotrophic Plate Count, Pour Plate
1084	Method, referenced in Section 611.531.
1085	
1086	Method 9221 A, Multiple-Tube Fermentation Technique
1087	for Members of the Coliform Group, Introduction,
1088	referenced in Sections 611.526 and 611.531.
1089	
1090	Method 9221 B, Multiple-Tube Fermentation Technique
1091	for Members of the Coliform Group, Standard Total
1092	Coliform Fermentation Technique, referenced in Sections
1093	611.526 and 611.531.
1094	
1095	Method 9221 C, Multiple-Tube Fermentation Technique
1096	for Members of the Coliform Group, Estimation of
1097	Bacterial Density, referenced in Sections 611.526 and
1098	611.531.
1099	
1100	Method 9221 D, Multiple-Tube Fermentation Technique
1101	for Members of the Coliform Group, Presence-Absence (P-
1102	A) Coliform Test, referenced in Section 611.526.
1103	
1104	Method 9221 E, Multiple-Tube Fermentation Technique
1105	for Members of the Coliform Group, Fecal Coliform
1106	Procedure, referenced in Sections 611.526 and 611.531.
1107	
1108	Method 9222 A, Membrane Filter Technique for Members
1109	of the Coliform Group, Introduction, referenced in Sections
1110	611.526 and 611.531.
1111	
1112	Method 9222 B, Membrane Filter Technique for Members
1113	of the Coliform Group, Standard Total Coliform Membrane

1114 Filter Procedure, referenced in Sections 611.526 and
1115 611.531.
1116
1117 Method 9222 C, Membrane Filter Technique for Members
1118 of the Coliform Group, Delayed-Incubation Total Coliform
1119 Procedure, referenced in Sections 611.526 and 611.531.
1120
1121 Method 9222 D, Membrane Filter Technique for Members
1122 of the Coliform Group, Fecal Coliform Membrane Filter
1123 Procedure, referenced in Section 611.531.
1124
1125 Method 9223, Chromogenic Substrate Coliform Test
1126 (Proposed) (also referred to as the variations "Autoanalysis
1127 Colilert® Test System" and "Colisure™ Test"), referenced
1128 in Sections 611.526 and 611.531.
1129
1130 Method 9223 B, Chromogenic Substrate Coliform Test
1131 (Proposed), referenced in Section 611.1004.
1132
1133 "Supplement to the 18th Edition of Standard Methods for the
1134 Examination of Water and Wastewater," American Public Health
1135 Association, 1994.
1136
1137 Method 6610, Carbamate Pesticide Method, referenced in
1138 Section 611.645.
1139
1140 "Standard Methods for the Examination of Water and
1141 Wastewater," 19th Edition, 1995 (referred to as "Standard Methods,
1142 19th ed.").
1143
1144 Method 2130 B, Turbidity, Nephelometric Method,
1145 referenced in Section 611.531.
1146
1147 Method 2320 B, Alkalinity, Titration Method, referenced in
1148 Section 611.611.
1149
1150 Method 2510 B, Conductivity, Laboratory Method,
1151 referenced in Section 611.611.
1152
1153 Method 2550, Temperature, Laboratory, and Field
1154 Methods, referenced in Section 611.611.
1155
1156 Method 3111 B, Metals by Flame Atomic Absorption

1157	Spectrometry, Direct Air-Acetylene Flame Method,
1158	referenced in Sections 611.611 and 611.612.
1159	
1160	Method 3111 D, Metals by Flame Atomic Absorption
1161	Spectrometry, Direct Nitrous Oxide-Acetylene Flame
1162	Method, referenced in Section 611.611.
1163	
1164	Method 3112 B, Metals by Cold-Vapor Atomic Absorption
1165	Spectrometry, Cold-Vapor Atomic Absorption
1166	Spectrometric Method, referenced in Section 611.611.
1167	
1168	Method 3113 B, Metals by Electrothermal Atomic
1169	Absorption Spectrometry, Electrothermal Atomic
1170	Absorption Spectrometric Method, referenced in Sections
1171	611.611 and 611.612.
1172	
1173	Method 3114 B, Metals by Hydride Generation/Atomic
1174	Absorption Spectrometry, Manual Hydride
1175	Generation/Atomic Absorption Spectrometric Method,
1176	referenced in Section 611.611.
1177	
1178	Method 3120 B, Metals by Plasma Emission Spectroscopy,
1179	Inductively Coupled Plasma (ICP) Method, referenced in
1180	Sections 611.611 and 611.612.
1181	
1182	Method 3125, Metals by Inductively Coupled Plasma/Mass
1183	Spectrometry, referenced in Section 611.720.
1184	
1185	Method 3500-Ca D, Calcium, EDTA Titrimetric Method,
1186	referenced in Section 611.611.
1187	
1188	Method 3500-Mg E, Magnesium, Calculation Method,
1189	referenced in Section 611.611.
1190	
1191	Method 4110 B, Determination of Anions by Ion
1192	Chromatography, Ion Chromatography with Chemical
1193	Suppression of Eluent Conductivity, referenced in Section
1194	611.611.
1195	
1196	Method 4500-Cl D, Chlorine, Amperometric Titration
1197	Method, referenced in Sections 611.381 and 611.531.
1198	
1199	Method 4500-Cl E, Chlorine, Low-Level Amperometric

1200	Titration Method, referenced in Sections 611.381 and
1201	611.531.
1202	
1203	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric
1204	Method, referenced in Sections 611.381 and 611.531.
1205	
1206	Method 4500-Cl G, Chlorine, DPD Colorimetric Method,
1207	referenced in Sections 611.381 and 611.531.
1208	
1209	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS)
1210	Method, referenced in Sections 611.381 and 611.531.
1211	
1212	Method 4500-Cl I, Chlorine, Iodometric Electrode Method,
1213	referenced in Sections 611.381 and 611.531.
1214	
1215	Method 4500-ClO ₂ C, Chlorine Dioxide, Amperometric
1216	Method I, referenced in Section 611.531.
1217	
1218	Method 4500-ClO ₂ D, Chlorine Dioxide, DPD Method,
1219	referenced in Sections 611.381 and 611.531.
1220	
1221	Method 4500-ClO ₂ E, Chlorine Dioxide, Amperometric
1222	Method II, referenced in Sections 611.381 and 611.531.
1223	
1224	Method 4500-CN ⁻ C, Cyanide, Total Cyanide after
1225	Distillation, referenced in Section 611.611.
1226	
1227	Method 4500-CN ⁻ E, Cyanide, Colorimetric Method,
1228	referenced in Section 611.611.
1229	
1230	Method 4500-CN ⁻ F, Cyanide, Cyanide-Selective Electrode
1231	Method, referenced in Section 611.611.
1232	
1233	Method 4500-CN ⁻ G, Cyanide, Cyanides Amenable to
1234	Chlorination after Distillation, referenced in Section
1235	611.611.
1236	
1237	Method 4500-F ⁻ B, Fluoride, Preliminary Distillation Step,
1238	referenced in Section 611.611.
1239	
1240	Method 4500-F ⁻ C, Fluoride, Ion-Selective Electrode
1241	Method, referenced in Section 611.611.
1242	

1243	Method 4500-F ⁻ D, Fluoride, SPADNS Method, referenced
1244	in Section 611.611.
1245	
1246	Method 4500-F ⁻ E, Fluoride, Complexone Method,
1247	referenced in Section 611.611.
1248	
1249	Method 4500-H ⁺ B, pH Value, Electrometric Method,
1250	referenced in Section 611.611.
1251	
1252	Method 4500-NO ₂ ⁻ B, Nitrogen (Nitrite), Colorimetric
1253	Method, referenced in Section 611.611.
1254	
1255	Method 4500-NO ₃ ⁻ D, Nitrogen (Nitrate), Nitrate Electrode
1256	Method, referenced in Section 611.611.
1257	
1258	Method 4500-NO ₃ ⁻ E, Nitrogen (Nitrate), Cadmium
1259	Reduction Method, referenced in Section 611.611.
1260	
1261	Method 4500-NO ₃ ⁻ F, Nitrogen (Nitrate), Automated
1262	Cadmium Reduction Method, referenced in Section
1263	611.611.
1264	
1265	Method 4500-O ₃ B, Ozone (Residual) (Proposed), Indigo
1266	Colorimetric Method, referenced in Section 611.531.
1267	
1268	Method 4500-P E, Phosphorus, Ascorbic Acid Method,
1269	referenced in Section 611.611.
1270	
1271	Method 4500-P F, Phosphorus, Automated Ascorbic Acid
1272	Reduction Method, referenced in Section 611.611.
1273	
1274	Method 4500-Si D, Silica, Molybdosilicate Method,
1275	referenced in Section 611.611.
1276	
1277	Method 4500-Si E, Silica, Heteropoly Blue Method,
1278	referenced in Section 611.611.
1279	
1280	Method 4500-Si F, Silica, Automated Method for
1281	Molybdate-Reactive Silica, referenced in Section 611.611.
1282	
1283	Method 5910 B, UV Absorbing Organic Constituents,
1284	Ultraviolet Absorption Method, referenced in Section
1285	611.381.

1286	
1287	
1288	
1289	Method 6251 B, Disinfection Byproducts: Haloacetic
1290	Acids and Trichlorophenol, Micro Liquid-Liquid
1291	Extraction Gas Chromatographic Method, referenced in
1292	Section 611.381.
1293	
1294	
1295	Method 6610, Carbamate Pesticide Method, referenced in
1296	Section 611.645.
1297	
1298	
1299	Method 6651 B, Glyphosate Herbicide, referenced in
1300	Section 611.645.
1301	
1302	
1303	Method 7110 B, Gross Alpha and Gross Beta
1304	Radioactivity, Evaporation Method for Gross Alpha-Beta,
1305	referenced in Section 611.720.
1306	
1307	
1308	Method 7110 C, Gross Alpha and Beta Radioactivity
1309	(Total, Suspended, and Dissolved), Coprecipitation Method
1310	for Gross Alpha Radioactivity in Drinking Water
1311	(Proposed), referenced in Section 611.720.
1312	
1313	
1314	Method 7120, Gamma-Emitting Radionuclides, referenced
1315	in Section 611.720.
1316	
1317	
1318	Method 7500-Cs B, Radioactive Cesium, Precipitation
1319	Method, referenced in Section 611.720.
1320	
1321	
1322	Method 7500- ³ H B, Tritium, Liquid Scintillation
1323	Spectrometric Method, referenced in Section 611.720.
1324	
1325	
1326	Method 7500-I B, Radioactive Iodine, Precipitation
1327	Method, referenced in Section 611.720.

1328	Method 7500-Ra C, Radium, Emanation Method,
1329	referenced in Section 611.720.
1330	
1331	Method 7500-Ra D, Radium, Sequential Precipitation
1332	Method, referenced in Section 611.720.
1333	
1334	Method 7500-Sr B, Total Radiactive Strontium and
1335	Strontium 90, Precipitation Method, referenced in Section
1336	611.720.
1337	
1338	Method 7500-U B, Uranium, Radiochemical Method,
1339	referenced in Section 611.720.
1340	
1341	Method 7500-U C, Uranium, Isotopic Method, referenced
1342	in Section 611.720.
1343	
1344	Method 9215 B, Heterotrophic Plate Count, Pour Plate
1345	Method, referenced in Section 611.531.
1346	
1347	Method 9221 A, Multiple-Tube Fermentation Technique
1348	for Members of the Coliform Group, Introduction,
1349	referenced in Sections 611.526 and 611.531.
1350	
1351	Method 9221 B, Multiple-Tube Fermentation Technique
1352	for Members of the Coliform Group, Standard Total
1353	Coliform Fermentation Technique, referenced in Sections
1354	611.526 and 611.531.
1355	
1356	Method 9221 C, Multiple-Tube Fermentation Technique
1357	for Members of the Coliform Group, Estimation of
1358	Bacterial Density, referenced in Sections 611.526 and
1359	611.531.
1360	
1361	Method 9221 D, Multiple-Tube Fermentation Technique
1362	for Members of the Coliform Group, Presence-Absence (P-
1363	A) Coliform Test, referenced in Section 611.526.
1364	
1365	Method 9221 E, Multiple-Tube Fermentation Technique
1366	for Members of the Coliform Group, Fecal Coliform
1367	Procedure, referenced in Sections 611.526 and 611.531.
1368	

1369	Method 9222 A, Membrane Filter Technique for Members
1370	of the Coliform Group, Introduction, referenced in Sections
1371	611.526 and 611.531.
1372	
1373	Method 9222 B, Membrane Filter Technique for Members
1374	of the Coliform Group, Standard Total Coliform Membrane
1375	Filter Procedure, referenced in Sections 611.526 and
1376	611.531.
1377	
1378	Method 9222 C, Membrane Filter Technique for Members
1379	of the Coliform Group, Delayed-Incubation Total Coliform
1380	Procedure, referenced in Sections 611.526 and 611.531.
1381	
1382	Method 9222 D, Membrane Filter Technique for Members
1383	of the Coliform Group, Fecal Coliform Membrane Filter
1384	Procedure, referenced in Section 611.531.
1385	
1386	Method 9222 G, Membrane Filter Technique for Members
1387	of the Coliform Group, MF Partition Procedures,
1388	referenced in Section 611.526.
1389	
1390	Method 9223, Chromogenic Substrate Coliform Test (also
1391	referred to as the variations "Autoanalysis-Colilert® Test
1392	System" and "Colisure™ Test"), referenced in Sections
1393	611.526 and 611.531.
1394	
1395	Method 9223 B, Chromogenic Substrate Coliform Test
1396	(Proposed), referenced in Section 611.1004.
1397	
1398	"Supplement to the 19 th Edition of Standard Methods for the
1399	Examination of Water and Wastewater," American Public Health
1400	Association, 1996.
1401	
1402	Method 5310 B, TOC, Combustion-Infrared Method,
1403	referenced in Section 611.381.
1404	
1405	Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation
1406	Method, referenced in Section 611.381.
1407	
1408	Method 5310 D, TOC, Wet-Oxidation Method, referenced
1409	in Section 611.381.
1410	

1411 "Standard Methods for the Examination of Water and
1412 Wastewater," 20th Edition, 1998 (referred to as "Standard Methods,
1413 20th ed.").

1414
1415 Method 2130 B, Turbidity, Nephelometric Method,
1416 referenced in Section 611.531.

1417
1418 Method 2320 B, Alkalinity, Titration Method, referenced in
1419 Section 611.611.

1420
1421 Method 2510 B, Conductivity, Laboratory Method,
1422 referenced in Section 611.611.

1423
1424 Method 2550, Temperature, Laboratory, and Field
1425 Methods, referenced in Section 611.611.

1426
1427 Method 3120 B, Metals by Plasma Emission Spectroscopy,
1428 Inductively Coupled Plasma (ICP) Method, referenced in
1429 Sections 611.611 and 611.612.

1430
1431 Method 3125, Metals by Inductively Coupled Plasma/Mass
1432 Spectrometry, referenced in Section 611.720.

1433
1434 Method 3500-Ca B, Calcium, EDTA Titrimetric Method,
1435 referenced in Section 611.611.

1436
1437 Method 3500-Mg B, Magnesium, EDTA Titrimetric
1438 Method, referenced in Section 611.611.

1439
1440 Method 4110 B, Determination of Anions by Ion
1441 Chromatography, Ion Chromatography with Chemical
1442 Suppression of Eluent Conductivity, referenced in Section
1443 611.611.

1444
1445 Method 4500-CN⁻ C, Cyanide, Total Cyanide after
1446 Distillation, referenced in Section 611.611.

1447
1448 Method 4500-CN⁻ E, Cyanide, Colorimetric Method,
1449 referenced in Section 611.611.

1450
1451 Method 4500-CN⁻ F, Cyanide, Cyanide-Selective Electrode
1452 Method, referenced in Section 611.611.

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1454	Method 4500-CN ⁻ G, Cyanide, Cyanides Amenable to Chlorination after Distillation, referenced in Section 611.611.
1455	
1456	
1457	
1458	Method 4500-Cl D, Chlorine, Amperometric Titration Method, referenced in Section 611.531.
1459	
1460	
1461	Method 4500-Cl E, Chlorine, Low-Level Amperometric Titration Method, referenced in Section 611.531.
1462	
1463	
1464	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric Method, referenced in Section 611.531.
1465	
1466	
1467	Method 4500-Cl G, Chlorine, DPD Colorimetric Method, referenced in Section 611.531.
1468	
1469	
1470	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS) Method, referenced in Section 611.531.
1471	
1472	
1473	Method 4500-Cl I, Chlorine, Iodometric Electrode Method, referenced in Section 611.531.
1474	
1475	
1476	Method 4500-ClO ₂ C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.
1477	
1478	
1479	Method 4500-ClO ₂ D, Chlorine Dioxide, DPD Method, referenced in Section 611.531.
1480	
1481	
1482	Method 4500-ClO ₂ E, Chlorine Dioxide, Amperometric Method II (Proposed), referenced in Section 611.531.
1483	
1484	
1485	Method 4500-F ⁻ B, Fluoride, Preliminary Distillation Step, referenced in Section 611.611.
1486	
1487	
1488	Method 4500-F ⁻ C, Fluoride, Ion-Selective Electrode Method, referenced in Section 611.611.
1489	
1490	
1491	Method 4500-F ⁻ D, Fluoride, SPADNS Method, referenced in Section 611.611.
1492	
1493	
1494	Method 4500-F ⁻ E, Fluoride, Complexone Method, referenced in Section 611.611.
1495	
1496	

1497	Method 4500-H ⁺ B, pH Value, Electrometric Method,
1498	referenced in Section 611.611.
1499	
1500	Method 4500-NO ₂ ⁻ B, Nitrogen (Nitrite), Colorimetric
1501	Method, referenced in Section 611.611.
1502	
1503	Method 4500-NO ₃ ⁻ D, Nitrogen (Nitrate), Nitrate Electrode
1504	Method, referenced in Section 611.611.
1505	
1506	Method 4500-NO ₃ ⁻ E, Nitrogen (Nitrate), Cadmium
1507	Reduction Method, referenced in Section 611.611.
1508	
1509	Method 4500-NO ₃ ⁻ F, Nitrogen (Nitrate), Automated
1510	Cadmium Reduction Method, referenced in Section
1511	611.611.
1512	
1513	Method 4500-O ₃ B, Ozone (Residual) (Proposed), Indigo
1514	Colorimetric Method, referenced in Section 611.531.
1515	
1516	Method 4500-P E, Phosphorus, Ascorbic Acid Method,
1517	referenced in Section 611.611.
1518	
1519	Method 4500-P F, Phosphorus, Automated Ascorbic Acid
1520	Reduction Method, referenced in Section 611.611.
1521	
1522	Method 4500-SiO ₂ C, Silica, Molybdosilicate Method,
1523	referenced in Section 611.611.
1524	
1525	Method 4500-SiO ₂ D, Silica, Heteropoly Blue Method,
1526	referenced in Section 611.611.
1527	
1528	Method 4500-SiO ₂ E, Silica, Automated Method for
1529	Molybdate-Reactive Silica, referenced in Section 611.611.
1530	
1531	Method 5310 B, TOC, Combustion-Infrared Method,
1532	referenced in Section 611.381.
1533	
1534	Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation
1535	Method, referenced in Section 611.381.
1536	
1537	Method 5310 D, TOC, Wet-Oxidation Method, referenced
1538	in Section 611.381.
1539	

1540	Method 5910 B, UV-Absorbing Organic Constituents,
1541	Ultraviolet Absorption Method, referenced in Sections
1542	611.381 and 611.382.
1543	
1544	Method 6251 B, Disinfection By-Products: Haloacetic
1545	Acids and Trichlorophenol, Micro Liquid-Liquid
1546	Extraction Gas Chromatographic Method, referenced in
1547	Section 611.381.
1548	
1549	Method 6610 B, Carbamate Pesticide Method, referenced
1550	in Section 611.645.
1551	
1552	Method 6651 B, Glyphosate Herbicide, Liquid
1553	Chromatographic Post-Column Fluorescence Method,
1554	referenced in Section 611.645.
1555	
1556	Method 7110 B, Gross Alpha and Gross Beta
1557	Radioactivity, Evaporation Method for Gross Alpha-Beta,
1558	referenced in Section 611.720.
1559	
1560	Method 7110 C, Gross Alpha and Beta Radioactivity
1561	(Total, Suspended, and Dissolved), Coprecipitation Method
1562	for Gross Alpha Radioactivity in Drinking Water
1563	(Proposed), referenced in Section 611.720.
1564	
1565	Method 7120, Gamma-Emitting Radionuclides, referenced
1566	in Section 611.720.
1567	
1568	Method 7500-Cs B, Radioactive Cesium, Precipitation
1569	Method, referenced in Section 611.720.
1570	
1571	Method 7500- ³ H B, Tritium, Liquid Scintillation
1572	Spectrometric Method, referenced in Section 611.720.
1573	
1574	Method 7500-I B, Radioactive Iodine, Precipitation
1575	Method, referenced in Section 611.720.
1576	
1577	Method 7500-I C, Radioactive Iodine, Ion-Exchange
1578	Method, referenced in Section 611.720.
1579	
1580	Method 7500-I D, Radioactive Iodine, Distillation Method,
1581	referenced in Section 611.720.
1582	

1583	Method 7500-Ra B, Radium, Precipitation Method,
1584	referenced in Section 611.720.
1585	
1586	Method 7500-Ra C, Radium, Emanation Method,
1587	referenced in Section 611.720.
1588	
1589	Method 7500-Ra D, Radium, Sequential Precipitation
1590	Method, referenced in Section 611.720.
1591	
1592	Method 7500-Sr B, Total Radioactive Strontium and
1593	Strontium 90, Precipitation Method, referenced in Section
1594	611.720.
1595	
1596	Method 7500-U B, Uranium, Radiochemical Method,
1597	referenced in Section 611.720.
1598	
1599	Method 7500-U C, Uranium, Isotopic Method, referenced
1600	in Section 611.720.
1601	
1602	Method 9060 A, Samples, Collection, referenced in Section
1603	611.1052.
1604	
1605	Method 9215 B, Heterotrophic Plate Count, Pour Plate
1606	Method, referenced in Section 611.531.
1607	
1608	Method 9221 A, Multiple-Tube Fermentation Technique
1609	for Members of the Coliform Group, Introduction,
1610	referenced in Sections 611.526 and 611.531.
1611	
1612	Method 9221 B, Multiple-Tube Fermentation Technique
1613	for Members of the Coliform Group, Standard Total
1614	Coliform Fermentation Technique, referenced in Sections
1615	611.526, 611.531, and 611.1052.
1616	
1617	Method 9221 C, Multiple-Tube Fermentation Technique
1618	for Members of the Coliform Group, Estimation of
1619	Bacterial Density, referenced in Sections 611.526, 611.531,
1620	and 611.1052.
1621	
1622	Method 9221 D, Multiple-Tube Fermentation Technique
1623	for Members of the Coliform Group, Presence-Absence (P-
1624	A) Coliform Test, referenced in Sections 611.526 and
1625	611.1052.

1626
1627 Method 9221 E, Multiple-Tube Fermentation Technique
1628 for Members of the Coliform Group, Fecal Coliform
1629 Procedure, referenced in Sections 611.526 and 611.531.
1630
1631 Method 9221 F, Multiple-Tube Fermentation Technique for
1632 Members of the Coliform Group, Escherichia Coli
1633 Procedure (Proposed), referenced in Section 611.802.
1634
1635 Method 9222 A, Membrane Filter Technique for Members
1636 of the Coliform Group, Introduction, referenced in Sections
1637 611.526 and 611.531.
1638
1639 Method 9222 B, Membrane Filter Technique for Members
1640 of the Coliform Group, Standard Total Coliform Membrane
1641 Filter Procedure, referenced in Sections 611.526, 611.531,
1642 and 611.1052.
1643
1644 Method 9222 C, Membrane Filter Technique for Members
1645 of the Coliform Group, Delayed-Incubation Total Coliform
1646 Procedure, referenced in Sections 611.526 and 611.531.
1647
1648 Method 9222 D, Membrane Filter Technique for Members
1649 of the Coliform Group, Fecal Coliform Membrane Filter
1650 Procedure, referenced in Section 611.531.
1651
1652 Method 9222 G, Membrane Filter Technique for Members
1653 of the Coliform Group, MF Partition Procedures,
1654 referenced in Section 611.526.
1655
1656 Method 9223, Chromogenic Substrate Coliform Test (also
1657 referred to as the variations "Autoanalysis-Colilert® Test
1658 System" and "ColisureTM Test"), referenced in Sections
1659 611.526 and 611.531.
1660
1661 Method 9223 B, Chromogenic Substrate Coliform Test
1662 (also referred to as the variations "Autoanalysis-Colilert®
1663 Test System" and "ColisureTM Test"), referenced in
1664 Sections 611.526, 611.802, 611.1004, and 611.1052.
1665
1666 Method 9230 B, Fecal Streptococcus and Enterococcus
1667 Groups, Multiple Tube Techniques, referenced in Section
1668 611.802.

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1671	Method 9230 C, Fecal Streptococcus and Enterococcus
1672	Groups, Membrane Filter Techniques, referenced in
1673	Section 611.802.
1674	
1675	"Standard Methods for the Examination of Water and
1676	Wastewater," 21 st Edition, 2005 (referred to as "Standard Methods,
1677	21 st ed.").
1678	
1679	Method 2130 B, Turbidity, Nephelometric Method,
1680	referenced in Section 611.531.
1681	
1682	Method 2320 B, Alkalinity, Titration Method, referenced in
1683	Section 611.611.
1684	
1685	Method 2510 B, Conductivity, Laboratory Method,
1686	referenced in Section 611.611.
1687	
1688	Method 2550, Temperature, Laboratory, and Field
1689	Methods, referenced in Section 611.611.
1690	
1691	Method 3111 B, Metals by Flame Atomic Absorption
1692	Spectrometry, Direct Air-Acetylene Flame Method,
1693	referenced in Sections 611.611 and 611.612.
1694	
1695	Method 3111 D, Metals by Flame Atomic Absorption
1696	Spectrometry, Direct Nitrous Oxide-Acetylene Flame
1697	Method, referenced in Section 611.611.
1698	
1699	Method 3112 B, Metals by Cold-Vapor Atomic Absorption
1700	Spectrometry, Cold-Vapor Atomic Absorption
1701	Spectrometric Method, referenced in Section 611.611.
1702	
1703	Method 3113 B, Metals by Electrothermal Atomic
1704	Absorption Spectrometry, Electrothermal Atomic
1705	Absorption Spectrometric Method, referenced in Sections
1706	611.611 and 611.612.
1707	
1708	Method 3114 B, Metals by Hydride Generation/Atomic
1709	Absorption Spectrometry, Manual Hydride
1710	Generation/Atomic Absorption Spectrometric Method,
1711	referenced in Section 611.611.

1712	Method 3120 B, Metals by Plasma Emission Spectroscopy, Inductively Coupled Plasma (ICP) Method, referenced in Sections 611.611 and 611.612.
1713	
1714	
1715	Method 3125, Metals by Inductively Coupled Plasma/Mass Spectrometry, referenced in Section 611.720.
1716	
1717	
1718	Method 3500-Ca B, Calcium, EDTA Titrimetric Method, referenced in Section 611.611.
1719	
1720	
1721	Method 3500-Mg B, Magnesium, Calculation Method, referenced in Section 611.611.
1722	
1723	
1724	Method 4110 B, Determination of Anions by Ion Chromatography, Ion Chromatography with Chemical Suppression of Eluent Conductivity, referenced in Section 611.611.
1725	
1726	
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1728	
1729	Method 4500-Cl D, Chlorine, Amperometric Titration Method, referenced in Section 611.381.
1730	
1731	
1732	Method 4500-Cl E, Chlorine, Low-Level Amperometric Titration Method, referenced in Section 611.381.
1733	
1734	
1735	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric Method, referenced in Section 611.381.
1736	
1737	
1738	Method 4500-Cl G, Chlorine, DPD Colorimetric Method, referenced in Section 611.381.
1739	
1740	
1741	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS) Method, referenced in Section 611.381.
1742	
1743	
1744	Method 4500-Cl I, Chlorine, Iodometric Electrode Method, referenced in Section 611.381.
1745	
1746	
1747	Method 4500-ClO ₂ C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.
1748	
1749	
1750	Method 4500-ClO ₂ E, Chlorine Dioxide, Amperometric Method II (Proposed), referenced in Section 611.381.
1751	
1752	
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1754	Method 4500-CN ⁻ E, Cyanide, Colorimetric Method,
1755	referenced in Section 611.611.
1756	
1757	Method 4500-CN ⁻ F, Cyanide, Cyanide-Selective Electrode
1758	Method, referenced in Section 611.611.
1759	
1760	Method 4500-CN ⁻ G, Cyanide, Cyanides Amenable to
1761	Chlorination after Distillation, referenced in Section
1762	611.611.
1763	
1764	Method 4500-F ⁻ B, Fluoride, Preliminary Distillation Step,
1765	referenced in Section 611.611.
1766	
1767	Method 4500-F ⁻ C, Fluoride, Ion-Selective Electrode
1768	Method, referenced in Section 611.611.
1769	
1770	Method 4500-F ⁻ D, Fluoride, SPADNS Method, referenced
1771	in Section 611.611.
1772	
1773	Method 4500-F ⁻ E, Fluoride, Complexone Method,
1774	referenced in Section 611.611.
1775	
1776	Method 4500-H ⁺ B, pH Value, Electrometric Method,
1777	referenced in Section 611.611.
1778	
1779	Method 4500-NO ₂ ⁻ B, Nitrogen (Nitrite), Colorimetric
1780	Method, referenced in Section 611.611.
1781	
1782	Method 4500-NO ₃ ⁻ D, Nitrogen (Nitrate), Nitrate Electrode
1783	Method, referenced in Section 611.611.
1784	
1785	Method 4500-NO ₃ ⁻ E, Nitrogen (Nitrate), Cadmium
1786	Reduction Method, referenced in Section 611.611.
1787	
1788	Method 4500-NO ₃ ⁻ F, Nitrogen (Nitrate), Automated
1789	Cadmium Reduction Method, referenced in Section
1790	611.611.
1791	
1792	Method 4500-O ₃ B, Ozone (Residual) (Proposed), Indigo
1793	Colorimetric Method, referenced in Section 611.531.
1794	
1795	Method 4500-P E, Phosphorus, Ascorbic Acid Method,
1796	referenced in Section 611.611.

1797	
1798	Method 4500-P F, Phosphorus, Automated Ascorbic Acid
1799	Reduction Method, referenced in Section 611.611.
1800	
1801	Method 4500-SiO ₂ C, Silica, Molybdosilicate Method,
1802	referenced in Section 611.611.
1803	
1804	Method 4500-SiO ₂ D, Silica, Heteropoly Blue Method,
1805	referenced in Section 611.611.
1806	
1807	Method 4500-SiO ₂ E, Silica, Automated Method for
1808	Molybdate-Reactive Silica, referenced in Section 611.611.
1809	
1810	Method 5310 B, TOC, Combustion-Infrared Method,
1811	referenced in Section 611.381.
1812	
1813	Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation
1814	Method, referenced in Section 611.381.
1815	
1816	Method 5310 D, TOC, Wet-Oxidation Method, referenced
1817	in Section 611.381.
1818	
1819	Method 5910 B, UV-Absorbing Organic Constituents,
1820	Ultraviolet Absorption Method, referenced in Sections
1821	611.381 and 611.382.
1822	
1823	Method 6251 B, Disinfection By-Products: Haloacetic
1824	Acids and Trichlorophenol, Micro Liquid-Liquid
1825	Extraction Gas Chromatography Method, referenced in
1826	Section 611.381.
1827	
1828	Method 6610 B, Carbamate Pesticide Method, High-
1829	Performance Liquid Chromatographic Method, referenced
1830	in Section 611.645.
1831	
1832	Method 6640 B, Acidic Herbicide Compounds, Micro
1833	Liquid-Liquid Extraction Gas Chromatographic Method,
1834	referenced in Section 611.645.
1835	
1836	Method 6651 B, Glyphosate Herbicide, Liquid
1837	Chromatographic Post-Column Fluorescence Method,
1838	referenced in Section 611.645.
1839	

1840	Method 7110 B, Gross Alpha and Gross Beta
1841	Radioactivity, Evaporation Method for Gross Alpha-Beta,
1842	referenced in Section 611.720.
1843	
1844	Method 7110 C, Gross Alpha and Beta Radioactivity
1845	(Total, Suspended, and Dissolved), Coprecipitation Method
1846	for Gross Alpha Radioactivity in Drinking Water
1847	(Proposed), referenced in Section 611.720.
1848	
1849	Method 7120, Gamma-Emitting Radionuclides, referenced
1850	in Section 611.720.
1851	
1852	Method 7500-Cs B, Radioactive Cesium, Precipitation
1853	Method, referenced in Section 611.720.
1854	
1855	Method 7500- ³ H B, Tritium, Liquid Scintillation
1856	Spectrometric Method, referenced in Section 611.720.
1857	
1858	Method 7500-I B, Radioactive Iodine, Precipitation
1859	Method, referenced in Section 611.720.
1860	
1861	Method 7500-I C, Radioactive Iodine, Ion-Exchange
1862	Method, referenced in Section 611.720.
1863	
1864	Method 7500-I D, Radioactive Iodine, Distillation Method,
1865	referenced in Section 611.720.
1866	
1867	Method 7500-Ra B, Radium, Precipitation Method,
1868	referenced in Section 611.720.
1869	
1870	Method 7500-Ra C, Radium, Emanation Method,
1871	referenced in Section 611.720.
1872	
1873	Method 7500-Ra D, Radium, Sequential Precipitation
1874	Method, referenced in Section 611.720.
1875	
1876	Method 7500-Sr B, Total Radioactive Strontium and
1877	Strontium 90, Precipitation Method, referenced in Section
1878	611.720.
1879	
1880	Method 7500-U B, Uranium, Radiochemical Method,
1881	referenced in Section 611.720.
1882	

1883	Method 7500-U C, Uranium, Isotopic Method, referenced
1884	in Section 611.720.
1885	
1886	Method 9060 A, Samples, Collection, referenced in Section
1887	611.1052.
1888	
1889	Method 9215 B, Heterotrophic Plate Count, Pour Plate
1890	Method, referenced in Section 611.531.
1891	
1892	Method 9221 A, Multiple-Tube Fermentation Technique
1893	for Members of the Coliform Group, Introduction,
1894	referenced in Sections 611.526 and 611.531.
1895	
1896	Method 9221 B, Multiple-Tube Fermentation Technique
1897	for Members of the Coliform Group, Standard Total
1898	Coliform Fermentation Technique, referenced in Sections
1899	611.526, 611.531, and 611.1052.
1900	
1901	Method 9221 C, Multiple-Tube Fermentation Technique
1902	for Members of the Coliform Group, Estimation of
1903	Bacterial Density, referenced in Sections 611.526, 611.531,
1904	and 611.1052.
1905	
1906	Method 9221 D, Multiple-Tube Fermentation Technique
1907	for Members of the Coliform Group, Presence-Absence (P-
1908	A) Coliform Test, referenced in Section 611.526 and
1909	611.1052.
1910	
1911	Method 9221 E, Multiple-Tube Fermentation Technique
1912	for Members of the Coliform Group, Fecal Coliform
1913	Procedure, referenced in Sections 611.526 and 611.531.
1914	
1915	Method 9221 F, Multiple-Tube Fermentation Technique for
1916	Members of the Coliform Group, Escherichia Coli
1917	Procedure (Proposed), referenced in Section 611.802.
1918	
1919	Method 9222 A, Membrane Filter Technique for Members
1920	of the Coliform Group, Introduction, referenced in Sections
1921	611.526 and 611.531.
1922	
1923	Method 9222 B, Membrane Filter Technique for Members
1924	of the Coliform Group, Standard Total Coliform Membrane

1925	Filter Procedure, referenced in Sections 611.526, 611.531,
1926	and 611.1052.
1927	
1928	Method 9222 C, Membrane Filter Technique for Members
1929	of the Coliform Group, Delayed-Incubation Total Coliform
1930	Procedure, referenced in Sections 611.526 and 611.531.
1931	
1932	Method 9222 D, Membrane Filter Technique for Members
1933	of the Coliform Group, Fecal Coliform Membrane Filter
1934	Procedure, referenced in Section 611.531.
1935	
1936	Method 9222 G, Membrane Filter Technique for Members
1937	of the Coliform Group, MF Partition Procedures,
1938	referenced in Section 611.526.
1939	
1940	Method 9223, Chromogenic Substrate Coliform Test (also
1941	referred to as the variations "Autoanalysis-Colilert® Test
1942	System" and "Colisure™ Test"), referenced in Sections
1943	611.526 and 611.531.
1944	
1945	Method 9223 B, Chromogenic Substrate Coliform Test
1946	(also referred to as the variations "AutoanalysisColilert®
1947	<u>Test System</u> " and "Colisure™ Test," and "Colilert-18®
1948	<u>Test", based on the particular medium used, available from</u>
1949	<u>IDEXX Laboratories, Inc.</u>), referenced in Sections 611.526,
1950	611.802, 611.1004, and 611.1052.
1951	
1952	BOARD NOTE: See the Board note appended to Standard
1953	Methods Online in this Section about methods that appear in
1954	Standard Methods, 21 st ed. which USEPA has cited as available
1955	from Standard Methods Online.
1956	
1957	"Standard Methods for the Examination of Water and
1958	Wastewater," 22 nd Edition, 2012 (referred to as "Standard
1959	Methods, 22 nd ed."). See the methods listed separately for the
1960	same references under American Waterworks Association.
1961	
1962	Method 2130 B, Turbidity, Nephelometric Method,
1963	referenced in Section 611.531.
1964	
1965	Method 2320 B, Alkalinity, Titration Method, referenced in
1966	Section 611.611.
1967	

1968	Method 2510 B, Conductivity, Laboratory Method,
1969	referenced in Section 611.611.
1970	
1971	Method 2550, Temperature, Laboratory, and Field
1972	Methods, referenced in Section 611.611.
1973	
1974	Method 3111 B, Metals by Flame Atomic Absorption
1975	Spectrometry, Direct Air-Acetylene Flame Method,
1976	referenced in Sections 611.611 and 611.612.
1977	
1978	Method 3111 D, Metals by Flame Atomic Absorption
1979	Spectrometry, Direct Nitrous Oxide-Acetylene Flame
1980	Method, referenced in Section 611.611.
1981	
1982	Method 3112 B, Metals by Cold-Vapor Atomic Absorption
1983	Spectrometry, Cold-Vapor Atomic Absorption
1984	Spectrometric Method, referenced in Section 611.611.
1985	
1986	Method 3113 B, Metals by Electrothermal Atomic
1987	Absorption Spectrometry, Electrothermal Atomic
1988	Absorption Spectrometric Method, referenced in Sections
1989	611.611 and 611.612.
1990	
1991	Method 3114 B, Metals by Hydride Generation/Atomic
1992	Absorption Spectrometry, Manual Hydride
1993	Generation/Atomic Absorption Spectrometric Method,
1994	referenced in Section 611.611.
1995	
1996	Method 3120 B, Metals by Plasma Emission Spectroscopy,
1997	Inductively Coupled Plasma (ICP) Method, referenced in
1998	Sections 611.611 and 611.612.
1999	
2000	Method 3500-Ca B, Calcium, EDTA Titrimetric Method,
2001	referenced in Section 611.611.
2002	
2003	Method 3500-Mg B, Magnesium, Calculation Method,
2004	referenced in Section 611.611.
2005	
2006	Method 4110 B, Determination of Anions by Ion
2007	Chromatography, Ion Chromatography with Chemical
2008	Suppression of Eluent Conductivity, referenced in Section
2009	611.611.
2010	

2011	Method 4500-Cl D, Chlorine, Amperometric Titration
2012	Method, referenced in Section 611.381.
2013	
2014	Method 4500-Cl E, Chlorine, Low-Level Amperometric
2015	Titration Method, referenced in Section 611.381.
2016	
2017	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric
2018	Method, referenced in Section 611.381.
2019	
2020	Method 4500-Cl G, Chlorine, DPD Colorimetric Method,
2021	referenced in Section 611.381.
2022	
2023	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS)
2024	Method, referenced in Section 611.381.
2025	
2026	Method 4500-Cl I, Chlorine, Iodometric Electrode Method,
2027	referenced in Section 611.381.
2028	
2029	Method 4500-ClO ₂ C, Chlorine Dioxide, Amperometric
2030	Method I, referenced in Section 611.531.
2031	
2032	Method 4500-ClO ₂ E, Chlorine Dioxide, Amperometric
2033	Method II (Proposed), referenced in Section 611.381.
2034	
2035	Method 4500-CN ⁻ E, Cyanide, Colorimetric Method,
2036	referenced in Section 611.611.
2037	
2038	Method 4500-CN ⁻ F, Cyanide, Cyanide-Selective Electrode
2039	Method, referenced in Section 611.611.
2040	
2041	Method 4500-CN ⁻ G, Cyanide, Cyanides Amenable to
2042	Chlorination after Distillation, referenced in Section
2043	611.611.
2044	
2045	Method 4500-F ⁻ B, Fluoride, Preliminary Distillation Step,
2046	referenced in Section 611.611.
2047	
2048	Method 4500-F ⁻ C, Fluoride, Ion-Selective Electrode
2049	Method, referenced in Section 611.611.
2050	
2051	Method 4500-F ⁻ D, Fluoride, SPADNS Method, referenced
2052	in Section 611.611.
2053	

2054	Method 4500-F ⁻ E, Fluoride, Complexone Method, referenced in Section 611.611.
2055	
2056	
2057	Method 4500-H ⁺ B, pH Value, Electrometric Method, referenced in Section 611.611.
2058	
2059	
2060	Method 4500-NO ₂ ⁻ B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.
2061	
2062	
2063	Method 4500-NO ₃ ⁻ D, Nitrogen (Nitrate), Nitrate Electrode Method, referenced in Section 611.611.
2064	
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2066	Method 4500-NO ₃ ⁻ E, Nitrogen (Nitrate), Cadmium Reduction Method, referenced in Section 611.611.
2067	
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2069	Method 4500-NO ₃ ⁻ F, Nitrogen (Nitrate), Automated Cadmium Reduction Method, referenced in Section 611.611.
2070	
2071	
2072	
2073	Method 4500-O ₃ B, Ozone (Residual) (Proposed), Indigo Colorimetric Method, referenced in Section 611.531.
2074	
2075	
2076	Method 4500-P E, Phosphorus, Ascorbic Acid Method, referenced in Section 611.611.
2077	
2078	
2079	Method 4500-P F, Phosphorus, Automated Ascorbic Acid Reduction Method, referenced in Section 611.611.
2080	
2081	
2082	Method 4500-SiO ₂ C, Silica, Molybdosilicate Method, referenced in Section 611.611.
2083	
2084	
2085	Method 4500-SiO ₂ D, Silica, Heteropoly Blue Method, referenced in Section 611.611.
2086	
2087	
2088	Method 4500-SiO ₂ E, Silica, Automated Method for Molybdate-Reactive Silica, referenced in Section 611.611.
2089	
2090	
2091	Method 5310 B, TOC, Combustion-Infrared Method, referenced in Section 611.381.
2092	
2093	Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation Method, referenced in Section 611.381.
2094	
2095	
2096	

2097	Method 5310 D, TOC, Wet-Oxidation Method, referenced
2098	in Section 611.381.
2099	
2100	Method 5910 B, UV-Absorbing Organic Constituents,
2101	Ultraviolet Absorption Method, referenced in Sections
2102	611.381 and 611.382.
2103	
2104	Method 6251 B, Disinfection By-Products: Haloacetic
2105	Acids and Trichlorophenol, referenced in Section 611.381.
2106	
2107	Method 6610 B, Carbamate Pesticide Method, High-
2108	Performance Liquid Chromatographic Method, referenced
2109	in Section 611.645.
2110	
2111	Method 6640 B, Acidic Herbicide Compounds, Micro
2112	Liquid-Liquid Extraction Gas Chromatographic Method,
2113	referenced in Section 611.645.
2114	
2115	Method 6651 B, Glyphosate Herbicide, Liquid
2116	Chromatographic Post-Column Fluorescence Method,
2117	referenced in Section 611.645.
2118	
2119	Method 7110 B, Gross Alpha and Gross Beta
2120	Radioactivity, Evaporation Method for Gross Alpha-Beta,
2121	referenced in Section 611.720.
2122	
2123	Method 7110 C, Gross Alpha and Beta Radioactivity
2124	(Total, Suspended, and Dissolved), Coprecipitation Method
2125	for Gross Alpha Radioactivity in Drinking Water
2126	(Proposed), referenced in Section 611.720.
2127	
2128	Method 7120, Gamma-Emitting Radionuclides, referenced
2129	in Section 611.720.
2130	
2131	Method 7500-Cs B, Radioactive Cesium, Precipitation
2132	Method, referenced in Section 611.720.
2133	
2134	Method 7500-H ³ B, Tritium, Liquid Scintillation
2135	Spectrometric Method, referenced in Section 611.720.
2136	
2137	Method 7500-I B, Radioactive Iodine, Precipitation
2138	Method, referenced in Section 611.720.
2139	

2140	Method 7500-I C, Radioactive Iodine, Ion-Exchange
2141	Method, referenced in Section 611.720.
2142	
2143	Method 7500-I D, Radioactive Iodine, Distillation Method,
2144	referenced in Section 611.720.
2145	
2146	Method 7500-Ra B, Radium, Precipitation Method,
2147	referenced in Section 611.720.
2148	
2149	Method 7500-Ra C, Radium, Emanation Method,
2150	referenced in Section 611.720.
2151	
2152	Method 7500-Ra D, Radium, Sequential Precipitation
2153	Method, referenced in Section 611.720.
2154	
2155	Method 7500-Sr B, Total Radioactive Strontium and
2156	Strontium 90, Precipitation Method, referenced in Section
2157	611.720.
2158	
2159	Method 7500-U B, Uranium, Radiochemical Method,
2160	referenced in Section 611.720.
2161	
2162	Method 7500-U C, Uranium, Isotopic Method, referenced
2163	in Section 611.720.
2164	
2165	Method 9060 A, Samples, Collection, referenced in Section
2166	611.1052.
2167	
2168	Method 9215 B, Heterotrophic Plate Count, Pour Plate
2169	Method, referenced in Section 611.531.
2170	
2171	Method 9221 A, Multiple-Tube Fermentation Technique
2172	for Members of the Coliform Group, Introduction,
2173	referenced in Sections 611.526 and 611.531.
2174	
2175	Method 9221 B, Multiple-Tube Fermentation Technique
2176	for Members of the Coliform Group, Standard Total
2177	Coliform Fermentation Technique, referenced in Sections
2178	611.526, 611.531, and 611.1052.
2179	
2180	Method 9221 C, Multiple-Tube Fermentation Technique
2181	for Members of the Coliform Group, Estimation of

- 2182 Bacterial Density, referenced in Sections 611.526 and
2183 611.531.
2184
2185 Method 9221 E, Multiple-Tube Fermentation Technique
2186 for Members of the Coliform Group, Fecal Coliform
2187 Procedure, referenced in Sections 611.526 and 611.531.
2188
2189 Method 9221 F, Multiple-Tube Fermentation Technique for
2190 Members of the Coliform Group, Escherichia Coli
2191 Procedure (Proposed), referenced in Section 611.802 and
2192 611.1052.
2193
2194 Method 9222 A, Membrane Filter Technique for Members
2195 of the Coliform Group, Introduction, referenced in Sections
2196 611.526 and 611.531.
2197
2198 Method 9222 B, Membrane Filter Technique for Members
2199 of the Coliform Group, Standard Total Coliform Membrane
2200 Filter Procedure, referenced in Sections 611.526 and
2201 611.531.
2202
2203 Method 9222 C, Membrane Filter Technique for Members
2204 of the Coliform Group, Delayed-Incubation Total Coliform
2205 Procedure, referenced in Sections 611.526 and 611.531.
2206
2207 Method 9222 D, Membrane Filter Technique for Members
2208 of the Coliform Group, Fecal Coliform Membrane Filter
2209 Procedure, referenced in Section 611.531.
2210
2211 Method 9223 B, Chromogenic Substrate Coliform Test
2212 (also referred to as the variations "Autoanalysis-Colilert®
2213 Test, System" and "Colisure™ Test," and "Colilert-18®
2214 Test", based on the particular medium used, available from
2215 IDEXX Laboratories, Inc.), referenced in Sections 611.526,
2216 611.802, 611.1004, and 611.1052.
2217
2218 BOARD NOTE: See the Board note appended to Standard
2219 Methods Online in this Section about methods that appear in
2220 Standard Methods, 22nd ed., which USEPA has cited as available
2221 from Standard Methods Online.
2222
2223 BOARD NOTE: Individual Methods from Standard Methods are
2224 available online from Standard Methods Online.

2225
2226 ASTM. American Society for Testing and Materials, 100 Barr Harbor
2227 Drive, West Conshohocken, PA 19428-2959 (610-832-9585).
2228
2229 ASTM Method D511-93 A and B, "Standard Test Methods for
2230 Calcium and Magnesium in Water," "Test Method A –
2231 Complexometric Titration" & "Test Method B – Atomic
2232 Absorption Spectrophotometric," approved 1993, referenced in
2233 Section 611.611.
2234
2235 ASTM Method D511-03 A and B, "Standard Test Methods for
2236 Calcium and Magnesium in Water," "Test Method A –
2237 Complexometric Titration" & "Test Method B – Atomic
2238 Absorption Spectrophotometric," approved 2003, referenced in
2239 Section 611.611.
2240
2241 ASTM Method D511-09 A and B, "Standard Test Methods for
2242 Calcium and Magnesium in Water," "Test Method A –
2243 Complexometric Titration" & "Test Method B – Atomic
2244 Absorption Spectrophotometric," approved 2009, referenced in
2245 Section 611.611.
2246
2247 ASTM Method D515-88 A, "Standard Test Methods for
2248 Phosphorus in Water," "Test Method A – Colorimetric Ascorbic
2249 Acid Reduction," approved August 19, 1988, referenced in Section
2250 611.611.
2251
2252 ASTM Method D859-94, "Standard Test Method for Silica in
2253 Water," approved 1994, referenced in Section 611.611.
2254
2255 ASTM Method D859-00, "Standard Test Method for Silica in
2256 Water," approved 2000, referenced in Section 611.611.
2257
2258 ASTM Method D859-05, "Standard Test Method for Silica in
2259 Water," approved 2005, referenced in Section 611.611.
2260
2261 ASTM Method D859-10, "Standard Test Method for Silica in
2262 Water," approved 2010, referenced in Section 611.611.
2263
2264 ASTM Method D1067-92 B, "Standard Test Methods for Acidity
2265 or Alkalinity in Water," "Test Method B – Electrometric or Color-
2266 Change Titration," approved May 15, 1992, referenced in Section
2267 611.611.

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ASTM Method D1067-02 B, "Standard Test Methods for Acidity or Alkalinity in Water," "Test Method B – Electrometric or Color-Change Titration," approved in 2002, referenced in Section 611.611.

ASTM Method D1067-06 B, "Standard Test Methods for Acidity or Alkalinity in Water," "Test Method B – Electrometric or Color-Change Titration," approved in 2006, referenced in Section 611.611.

ASTM Method D1067-11 B, "Standard Test Methods for Acidity or Alkalinity in Water," "Test Method B – Electrometric or Color-Change Titration," approved in 2011, referenced in Section 611.611.

ASTM Method D1125-95 (1999) 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 1995, reapproved 1999, referenced in Section 611.611.

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

ASTM Method D1179-99 B, "Standard Test Methods for Fluoride in Water," "Test Method B – Ion Selective Electrode," approved 1999, referenced in Section 611.611.

ASTM Method D1179-04 B, "Standard Test Methods for Fluoride in Water," "Test Method B – Ion Selective Electrode," approved 2004, referenced in Section 611.611.

ASTM Method D1179-10 B, "Standard Test Methods for Fluoride in Water," "Test Method B – Ion Selective Electrode," approved 2010, referenced in Section 611.611.

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

2310	ASTM Method D1253-96, "Standard Test Method for Residual Chlorine in Water," approved 1996, referenced in Section 611.381.
2311	
2312	
2313	ASTM Method D1253-03, "Standard Test Method for Residual Chlorine in Water," approved 2003, referenced in Sections 611.381 and 611.531.
2314	
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2317	ASTM Method D1253-08, "Standard Test Method for Residual Chlorine in Water," approved 2008, referenced in Sections 611.381 and 611.531.
2318	
2319	
2320	
2321	ASTM Method D1293-95 A or B, "Standard Test Methods for pH of Water," "Test Method A – Precise Laboratory Measurement" & "Test Method B – Routine or Continuous Measurement," approved 1995, referenced in Section 611.611.
2322	
2323	
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2325	
2326	ASTM Method D1293-99 A or B, "Standard Test Methods for pH of Water," "Test Method A – Precise Laboratory Measurement" & "Test Method B – Routine or Continuous Measurement," approved 1999, referenced in Section 611.611.
2327	
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2330	
2331	ASTM Method D1293-12, "Standard Test Methods for pH of Water," approved 2012, referenced in Section 611.611.
2332	
2333	
2334	ASTM Method D1688-95 A or C, "Standard Test Methods for Copper in Water," "Test Method A – Atomic Absorption, Direct" & "Test Method C – Atomic Absorption, Graphite Furnace," approved 1995, referenced in Section 611.611.
2335	
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2338	
2339	ASTM Method D1688-02 A or C, "Standard Test Methods for Copper in Water," "Test Method A – Atomic Absorption, Direct" & "Test Method C – Atomic Absorption, Graphite Furnace," approved 2002, referenced in Section 611.611.
2340	
2341	
2342	
2343	
2344	ASTM Method D1688-07 A or C, "Standard Test Methods for Copper in Water," "Test Method A – Atomic Absorption, Direct" & "Test Method C – Atomic Absorption, Graphite Furnace," approved 2007, referenced in Section 611.611.
2345	
2346	
2347	
2348	
2349	ASTM Method D2036-98 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 1998, referenced in Section
2350	
2351	
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2353 611.611.
2354

2355 ASTM Method D2036-06 A or B, "Standard Test Methods for
2356 Cyanide in Water," "Test Method A – Total Cyanides after
2357 Distillation" & "Test Method B – Cyanides Amenable to
2358 Chlorination by Difference," approved 2006, referenced in Section
2359 611.611.
2360

2361 ASTM Method D2459-72, "Standard Test Method for Gamma
2362 Spectrometry in Water," approved July 28, 1972, discontinued
2363 1988, referenced in Section 611.720.
2364

2365 ASTM Method D2460-97, "Standard Test Method for
2366 Radionuclides of Radium in Water," approved 1997, referenced in
2367 Section 611.720.
2368

2369 ASTM Method D2460-07, "Standard Test Method for
2370 Radionuclides of Radium in Water," approved 2007, referenced in
2371 Section 611.720.
2372

2373 ASTM Method D2907-97, "Standard Test Methods for
2374 Microquantities of Uranium in Water by Fluorometry, approved
2375 1997/1991, referenced in Section 611.720.
2376

2377 ASTM Method D2972-97 B or C, "Standard Test Methods for
2378 Arsenic in Water," "Test Method B – Atomic Absorption, Hydride
2379 Generation" & "Test Method C – Atomic Absorption, Graphite
2380 Furnace," approved 1997, referenced in Section 611.611.
2381

2382 ASTM Method D2972-03 B or C, "Standard Test Methods for
2383 Arsenic in Water," "Test Method B – Atomic Absorption, Hydride
2384 Generation" & "Test Method C – Atomic Absorption, Graphite
2385 Furnace," approved 2003, referenced in Section 611.611.
2386

2387 ASTM Method D2972-08 B or C, "Standard Test Methods for
2388 Arsenic in Water," "Test Method B – Atomic Absorption, Hydride
2389 Generation" & "Test Method C – Atomic Absorption, Graphite
2390 Furnace," approved 2008, referenced in Section 611.611.
2391

2392 ASTM Method D3223-97, "Standard Test Method for Total
2393 Mercury in Water," approved 1997, referenced in Section 611.611.
2394

2395 ASTM Method D3223-02, "Standard Test Method for Total
2396 Mercury in Water," approved 2002, referenced in Section 611.611.
2397
2398 ASTM Method D3223-12, "Standard Test Method for Total
2399 Mercury in Water," approved 2012, referenced in Section 611.611.
2400
2401 ASTM Method D3454-97, "Standard Test Method for Radium-226
2402 in Water," approved 1997, referenced in Section 611.720.
2403
2404 ASTM Method D3454-05, "Standard Test Method for Radium-226
2405 in Water," approved 2005, referenced in Section 611.720.
2406
2407 ASTM Method D3559-96 D, "Standard Test Methods for Lead in
2408 Water," "Test Method D – Atomic Absorption, Graphite Furnace,"
2409 approved August 6, 1990, referenced in Section 611.611.
2410
2411 ASTM Method D3559-03 D, "Standard Test Methods for Lead in
2412 Water," "Test Method D – Atomic Absorption, Graphite Furnace,"
2413 approved 2003, referenced in Section 611.611.
2414
2415 ASTM Method D3559-08 D, "Standard Test Methods for Lead in
2416 Water," "Test Method D – Atomic Absorption, Graphite Furnace,"
2417 approved 2008, referenced in Section 611.611.
2418
2419 ASTM Method D3645-97 B, "Standard Test Methods for
2420 Beryllium in Water," "Method B – Atomic Absorption, Graphite
2421 Furnace," approved 1997, referenced in Section 611.611.
2422
2423 ASTM Method D3645-03 B, "Standard Test Methods for
2424 Beryllium in Water," "Method B – Atomic Absorption, Graphite
2425 Furnace," approved 2003, referenced in Section 611.611.
2426
2427 ASTM Method D3645-08 B, "Standard Test Methods for
2428 Beryllium in Water," "Method B – Atomic Absorption, Graphite
2429 Furnace," approved 2008, referenced in Section 611.611.
2430
2431 ASTM Method D3649-91, "Standard Test Method for High-
2432 Resolution Gamma-Ray Spectrometry of Water," approved 1991,
2433 referenced in Section 611.720.
2434
2435 ASTM Method D3649-98a, "Standard Test Method for High-
2436 Resolution Gamma-Ray Spectrometry of Water," approved 1998,
2437 referenced in Section 611.720.

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ASTM Method D3649-06, "Standard Test Method for High-Resolution Gamma-Ray Spectrometry of Water," approved 2006, referenced in Section 611.720.

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

ASTM Method D3697-02, "Standard Test Method for Antimony in Water," approved 2002, referenced in Section 611.611.

ASTM Method D3697-07, "Standard Test Method for Antimony in Water," approved 2007, referenced in Section 611.611.

ASTM Method D3859-98 A and B, "Standard Test Methods for Selenium in Water" "Method A – Atomic Absorption, Hydride Method" & "Method B – Atomic Absorbtion, Graphite Furnace," approved 1998, referenced in Section 611.611.

ASTM Method D3859-03 A and B, "Standard Test Methods for Selenium in Water," "Method A – Atomic Absorption, Hydride Method" & "Method B – Atomic Absorbtion, Graphite Furnace," approved 2003, referenced in Section 611.611.

ASTM Method D3859-08 A and B, "Standard Test Methods for Selenium in Water," "Method A – Atomic Absorption, Hydride Method" & "Method B – Atomic Absorbtion, Graphite Furnace," approved 2008, referenced in Section 611.611.

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

ASTM Method D3972-97, "Standard Test Method for Isotopic Uranium in Water by Radiochemistry," approved 1997, referenced in Section 611.720.

ASTM Method D3972-02, "Standard Test Method for Isotopic Uranium in Water by Radiochemistry," approved 2002, referenced in Section 611.720.

2480	ASTM Method D3972-09, "Standard Test Method for Isotopic
2481	Uranium in Water by Radiochemistry," approved 2009, referenced
2482	in Section 611.720.
2483	
2484	ASTM Method D4107-91, "Standard Test Method for Tritium in
2485	Drinking Water," approved 1991, referenced in Section 611.720.
2486	
2487	ASTM Method D4107-98, "Standard Test Method for Tritium in
2488	Drinking Water," approved 1998, referenced in Section 611.720.
2489	
2490	ASTM Method D4107-08, "Standard Test Method for Tritium in
2491	Drinking Water," approved 2008, referenced in Section 611.720.
2492	
2493	ASTM Method D4327-97, "Standard Test Method for Anions in
2494	Water by Ion Chromatography," approved 1997, referenced in
2495	Section 611.611.
2496	
2497	ASTM Method D4327-03, "Standard Test Method for Anions in
2498	Water by Ion Chromatography," approved 2003, referenced in
2499	Section 611.611.
2500	
2501	<u>ASTM Method D4327-11, "Standard Test Method for Anions in</u>
2502	<u>Water by Ion Chromatography," approved 2011, referenced in</u>
2503	<u>Section 611.611.</u>
2504	
2505	ASTM Method D4785-93, "Standard Test Method for Low-Level
2506	Iodine-131 in Water," approved 1993, referenced in Section
2507	611.720.
2508	
2509	ASTM Method D4785-98, "Standard Test Method for Low-Level
2510	Iodine-131 in Water," approved 1998, referenced in Section
2511	611.720.
2512	
2513	ASTM Method D4785-08, "Standard Test Method for Low-Level
2514	Iodine-131 in Water," approved 2008, referenced in Section
2515	611.720.
2516	
2517	ASTM Method D5174-97, "Standard Test Method for Trace
2518	Uranium in Water by Pulsed-Laser Phosphorimetry," approved
2519	1997, referenced in Section 611.720.
2520	

2521 ASTM Method D5174-02, "Standard Test Method for Trace
2522 Uranium in Water by Pulsed-Laser Phosphorimetry," approved
2523 2002, referenced in Section 611.720.

2524
2525 ASTM Method D5174-07, "Standard Test Method for Trace
2526 Uranium in Water by Pulsed-Laser Phosphorimetry," approved
2527 2007, referenced in Section 611.720.

2528
2529 ASTM Method D5317-93, "Standard Test Method for
2530 Determination of Chlorinated Organic Acid Compounds in Water
2531 by Gas Chromatography with an Electron Capture Detector,"
2532 approved 1993, referenced in Section 611.645.

2533
2534 ASTM Method D5317-98 (2003), "Standard Test Method for
2535 Determination of Chlorinated Organic Acid Compounds in Water
2536 by Gas Chromatography with an Electron Capture Detector,"
2537 approved 1998 (reapproved 2003), referenced in Section 611.645.

2538
2539 ASTM Method D5673-03, "Standard Test Method for Elements in
2540 Water by Inductively Coupled Plasma – Mass Spectrometry,"
2541 approved 2003, referenced in Section 611.720.

2542
2543 ASTM Method D5673-05, "Standard Test Method for Elements in
2544 Water by Inductively Coupled Plasma – Mass Spectrometry,"
2545 approved 2005, referenced in Section 611.720.

2546
2547 ASTM Method D5673-10, "Standard Test Method for Elements in
2548 Water by Inductively Coupled Plasma – Mass Spectrometry,"
2549 approved 2010, referenced in Section 611.720.

2550
2551 ASTM Method D6239-09, "Standard Test Method for Uranium in
2552 Drinking Water by High-Resolution Alpha-Liquid-Scintillation
2553 Spectrometry," approved 2009, referenced in Section 611.720.

2554
2555 ASTM Method D6508-00(2005), "Standard Test Method for
2556 Determination of Dissolved Inorganic Anions in Aqueous Matrices
2557 Using Capillary Ion Electrophoresis and Chromate Electrolyte,"
2558 approved 2000 (revised 2005), referenced in Section 611.611.

2559
2560 ASTM Method D6581-00, "Standard Test Method for Bromate,
2561 Bromide, Chlorate, and Chlorite in Drinking Water by Chemically
2562 Suppressed Ion Chromatography," approved 2000, referenced in
2563 Section 611.381.

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ASTM Method D6581-08 A and B, "Standard Test Method for Bromate, Bromide, Chlorate, and Chlorite in Drinking Water by Suppressed Ion Chromatography," "Test Method A – Chemically Suppressed Ion Chromatography" & "Test Method B – Electrolytically Suppressed Ion Chromatography," approved 2008, referenced in Section 611.381.

ASTM Method D6919-03, "Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography," approved 2003, referenced in Section 611.611.

ASTM Method D6919-09, "Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography," approved 2009, referenced in Section 611.611.

ASTM Method D6888-04, "Standard Test Method for Available Cyanide with Ligand Displacement and Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection," approved 2004, referenced in Section 611.611.

BOARD NOTE: The most recent version of ASTM methods are available for paid download from the ASTM at www.astm.org. Note that the most recent version of an ASTM method may not be the version approved for use by USEPA and incorporated by reference in subsection (b) of this Section.

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

"Fluoride in Water and Wastewater," Industrial Method #129-71W, December 1972 (referred to as "Technicon Methods, Method #129-71W"). See 40 CFR 141.23(k)(1), footnote 11 (2014)(2012), referenced in Section 611.611.

"Fluoride in Water and Wastewater," #380-75WE, February 1976 (referred to as "Technicon Methods, Method #380-75WE"). See 40 CFR 141.23(k)(1), footnote 11 (2014)(2012), referenced in Section 611.611.

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

2607 "Charm E*Colite Presence/Absence Test for Detection and
2608 Identification of Coliform Bacteria and Escherichia coli in
2609 Drinking Water," January 9, 1998 (referred to as "E*Colite Test"),
2610 referenced in Section 611.802 and 611.1052 (also available from
2611 USEPA, Water Resource Center).

2612
2613 "Fast Phage Test Procedure. Presence/Absence for Coliphage in
2614 Ground Water with Same Day Positive Prediction," version 009
2615 (Nov. 2012) (referred to as "Charm Fast Phage Test"), referenced
2616 in Section 611.802.

2617
2618 CPI International, Inc., 5580 Skylane Blvd., Santa Rosa, CA 95403 (800-
2619 878-7654 /fax: 707-545-7901/Internet address:
2620 www.cpiinternational.com).

2621
2622 "Colitag® Product as a Test for Detection and Identification of
2623 Coliforms and E. coli Bacteria in Drinking Water and Source
2624 Water as Required in National Primary Drinking Water
2625 Regulations," August 2001, referenced in Section 611.526.

2626
2627 "Modified Colitag™ Test Method for Simultaneous Detection of
2628 E. coli and other Total Coliforms in Water (ATP D05-0035),"
2629 August 2009 (referred to as "Modified Colitag™ TestMethod"),
2630 referenced in Sections 611.526 and 611.802. See also NEMI.

2631
2632 EMD Millipore (division of Merck KGgA, Darmstadt, Germany), 290
2633 Concord Road, Billerica, MA 01821 (800-645-5476 or 781-533-6000).

2634
2635 "Chromocult® Coliform Agar Presence/Absence Membrane Filter
2636 Test Method for Detection and Identification of Coliform Bacteria
2637 and Escherichia coli in Finished Waters," November 2000
2638 (referred to as "Chromocult® Method, Version 1.0"), referenced in
2639 Sections 611.526, 611.802, and 611.1052.

2640
2641 "Readycult Coliforms 100 Presence/Absence Test for Detection
2642 and Identification of Coliform Bacteria and Escherichia coli in
2643 Finished Waters," November 2000 (referred to as "Readycult®
2644 2000"), Version 1.0, referenced in Section 611.526.

2645
2646 "Readycult Coliforms 100 Presence/Absence Test for Detection
2647 and Identification of Coliform Bacteria and Escherichia coli in
2648 Finished Waters," Version 1.1, January 2007 (referred to as
2649 "Readycult® 2007"), referenced in Section 611.802 and 611.1052.

2650
2651 Georgia Tech Research Institute, Robert Rosson, 925 Dalney Road,
2652 Atlanta, GA 30332 (404-407-6339).
2653
2654 "The Determination of Radium-226 and Radium-228 in Drinking
2655 Water by Gamma-ray Spectrometry Using HPGE or Ge(Li)
2656 Detectors," Revision 1.2, December 2004 (called "Georgia Radium
2657 Method"), referenced in Section 611.720.
2658
2659 Great Lakes Instruments, Inc., 8855 North 55th Street, Milwaukee, WI
2660 53223.
2661
2662 GLI Method 2, "Turbidity," Nov. 2, 1992, referenced in Section
2663 611.531.
2664
2665 H&E Testing Laboratory, 221 State Street, Augusta, ME 04333 (207-287-
2666 2727).
2667
2668 Method ME355.01, Revision 1, "Determination of Cyanide in
2669 Drinking Water by GC/MS Headspace Analysis," May 2009,
2670 referenced in Section 611.611. See also NEMI.
2671
2672 The Hach Company, P.O. Box 389, Loveland, CO 80539-0389 (800-227-
2673 4224/Internet address: www.hach.com).
2674
2675 "Lead in Drinking Water by Differential Pulse Anodic Stripping
2676 Voltammetry," Method 1001, August 1999, referenced in Section
2677 611.611.
2678
2679 "Determination of Turbidity by Laser Nephelometry," January
2680 2000, Revision 2.0 (referred to as "Hach FilterTrak Method
2681 10133"), referenced in Section 611.531.
2682
2683 "Total Coliforms and E. coli Membrane Filtration Method with m-
2684 ColiBlue24® Broth," Method No. 10029, Revision 2, August 17,
2685 1999 (referred to as "m-ColiBlue24 Test"), referenced in Sections
2686 611.802 and 611.1052 (also available from USEPA, Water
2687 Resource Center).
2688
2689 "Fluoride, USEPA SPADNS 2 Method 10225," revision 2.0,
2690 January 2011 (referred to as "Hach SPADNS 2 Method 10225"),
2691 referenced in Section 611.611.
2692

2693 "Hach Company TNTplus 835/836 Nitrate Method 10206 –
2694 Spectrophotometric Measurement of Nitrate in Water and
2695 Wastewater," revision 2.0, January 2011 (referred to as "Hach
2696 TNTplus 835/836 Method 10206"), referenced in Section 611.611.

2697
2698 "Hach Method 10260 – Determination of Chlorinated Oxidants
2699 (Free and Total) in Water Using Disposable Planar Reagent-filled
2700 Cuvettes and Mesofluic Channel Colorimetry," April 2013
2701 (referred to as "Hach Method 10260"), referenced in Sections
2702 611.381 and 611.531.

2703
2704 IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092
2705 (800-321-0207).

2706
2707 "Colisure Presence/Absence Test for Detection and Identification
2708 of Coliform Bacteria and Escherichia Coli in Drinking Water,"
2709 February 28, 1994 (referred to as "ColisureTM Test"), referenced in
2710 Section 611.526.

2711
2712 "IDEXX SimPlate TM HPC Test Method for Heterotrophs in
2713 Water," November 2000 (referred to as "SimPlate method"),
2714 referenced in Section 611.531.

2715
2716 Industrial Test Systems, Inc., 1875 Langston St., Rock Hill, SC 29730.

2717
2718 Method D99-003, Revision 3.0, "Free Chlorine Species
2719 (HOCl and OCl⁻) by Test Strip," November 21, 2003 (referred to
2720 as "ITS Method D99-003"), referenced in Section 611.381.

2721
2722 Lachat Instruments, 6645 W. Mill Rd., Milwaukee, WI 53218 (414-358-
2723 4200).

2724
2725 "Digestion and distillation of total cyanide in drinking and
2726 wastewaters using MICRO DIST and determination of cyanide by
2727 flow injection analysis," Revision 2.1, November 30, 2000
2728 (referred to as "QuikChem Method 10-204-00-1-X"), referenced in
2729 Section 611.611.

2730
2731 Leck Mitchell, PhD, PE, 656 Independence Valley Dr., Grand Junction,
2732 CO 81507. See also NEMI.

2733
2734 Mitchell Method M5271, "Determination of Turbidity by Laser
2735 Nephelometry," March 2009, referenced in Section 611.531.

2736	
2737	
2738	Mitchell Method M5331, "Determination of Turbidity by LED
2739	Nephelometry," March 2009, referenced in Section 611.531.
2740	
2741	NCRP. National Council on Radiation Protection, 7910 Woodmont Ave.,
2742	Bethesda, MD (301-657-2652).
2743	
2744	NCRP Report Number 22, "Maximum Permissible Body Burdens
2745	and Maximum Permissible Concentrations of Radionuclides in Air
2746	and in Water for Occupational Exposure," NCRP Report Number
2747	22, June 5, 1959, referenced in Section 611.101.
2748	
2749	NEMI. National Environmental Method Index (on-line at
2750	www.nemi.gov).
2751	
2752	AMI Turbiwell Method, "Continuous Measurement of Turbidity
2753	Using a SWAN AMI Turbiwell Turbidimeter," August 2009. See
2754	also SWAN Analytische Instrumente AG.
2755	
2756	Method ME355.01, Revision 1, "Determination of Cyanide in
2757	Drinking Water by GC/MS Headspace Analysis," May 2009,
2758	referenced in Section 611.611. See also H&E Testing Laboratory.
2759	
2760	Mitchell Method M5271, "Determination of Turbidity by Laser
2761	Nephelometry," March 2009, referenced in Section 611.531. See
2762	also Leck Mitchell, PhD, PE.
2763	
2764	Mitchell Method M5331, "Determination of Turbidity by LED
2765	Nephelometry," March 2009, referenced in Section 611.531. See
2766	also Leck Mitchell, PhD, PE
2767	
2768	Modified Colitag™ Method, "Modified Colitag™ Test Method for
2769	Simultaneous Detection of E. coli and other Total Coliforms in
2770	Water (ATP D05-0035)," August 2009, referenced in Sections
2771	611.526 and 611.802. See also CPI International, Inc.
2772	
2773	Orion Method AQ4500, "Determination of Turbidity by LED
2774	Nephelometry," May 2009, referenced in Section 611.531. See
2775	also Thermo Scientific.
2776	
2777	Palintest ChloroSense, "Measurement of Free and Total Chlorine
	in Drinking Water by Palintest ChloroSense," September 2009

2778 (referred to as "Palintest ChloroSense"), referenced in Sections
2779 611.381 and 611.531. See also Palintest.
2780
2781 "Systea Easy (1-Reagent) Nitrate Method," February 2009,
2782 referenced in Section 611.611. See also Systea Scientific, LLC.
2783
2784 NSF. National Sanitation Foundation International, 3475 Plymouth Road,
2785 PO Box 130140, Ann Arbor, Michigan 48113-0140 (734-769-8010).
2786
2787 NSF Standard 61, section 9, November 1998, referenced in
2788 Sections 611.126 and 611.356.
2789
2790 NTIS. National Technical Information Service, U.S. Department of
2791 Commerce, 5301 Shawnee Road, Alexandria, VA 22312 (703-605-6000
2792 or 800-553-6847, www.ntis.gov).
2793
2794 Dioxin and Furan Method 1613, Revision B, "Tetra- through Octa-
2795 Chlorinated Dioxins and Furans by Isotope Dilution
2796 HRGC/HRMS," October 1994, Revision B, EPA 821/B-94/005,
2797 Doc. No. 94-104774, referenced in Section 611.645. See also
2798 USEPA, NSCEP.
2799
2800 Kelada 01, "Kelada Automated Test Methods for Total Cyanide,
2801 Acid Dissociable Cyanide, and Thiocyanate," Revision 1.2, August
2802 2001, EPA 821/B-01-009, referenced in Section 611.611.
2803
2804 "Maximum Permissible Body Burdens and Maximum Permissible
2805 Concentrations of Radionuclides in Air and in Water for
2806 Occupational Exposure," NBS (National Bureau of Standards)
2807 Handbook 69, as amended August 1963, U.S. Department of
2808 Commerce, referenced in Section 611.330.
2809
2810 "Procedures for Radiochemical Analysis of Nuclear Reactor
2811 Aqueous Solutions," H.L. Krieger and S. Gold, EPA-R4-73-014,
2812 May 1973, Doc. No. PB222-154/7BA, referenced in Section
2813 611.720.
2814
2815 USEPA Asbestos Method 100.1, "Analytical Method for
2816 Determination of Asbestos Fibers in Water," EPA 600/4-83-043,
2817 September 1983, Doc. No. PB83-260471, referenced in Section
2818 611.611. See also USEPA, NSCEP.
2819

2820 USEPA Asbestos Method 100.2, "Determination of Asbestos
 2821 Structures over 10-mm in Length in Drinking Water," EPA 600/R-
 2822 94-134, June 1994, Doc. No. PB94-201902, referenced in Section
 2823 611.611. See also USEPA, NSCEP.

2824
 2825 USEPA Environmental Inorganic Methods, "Methods for the
 2826 Determination of Inorganic Substances in Environmental
 2827 Samples," August 1993, EPA 600/R-93-100, Doc. No. PB94-
 2828 121811, referenced in Sections 611.381, 611.531, and 611.611.
 2829 (Methods 180.1 (rev. 2.0), 300.0 (rev. 2.1), 335.4 (rev. 1.0), 353.2
 2830 (rev. 2.0), and 365.1 (rev. 2.0) only.) See also USEPA, NSCEP.

2831
 2832 USEPA Environmental Metals Methods, "Methods for the
 2833 Determination of Metals in Environmental Samples – Supplement
 2834 I," May 1994, EPA 600/R-94-111, Doc. No. PB95-125472,
 2835 referenced in Sections 611.611, 611.612, and 611.720. (Methods
 2836 200.7 (rev. 4.4), 200.8 (rev. 5.3), 200.9 (rev. 2.2), and 245.1 (rev.
 2837 3.0) only.) See also USEPA, NSCEP.

2838
 2839 USEPA Inorganic Methods, "Methods for Chemical Analysis of
 2840 Water and Wastes," March 1983, EPA 600/4-79-020, Doc. No.
 2841 PB84-128677, referenced in Section 611.611. (Methods 150.1,
 2842 150.2, and 245.2 only.) See also USEPA, NSCEP.

2843
 2844 USEPA Interim Radiochemical Methods, "Interim Radiochemical
 2845 Methodology for Drinking Water," EPA 600/4-75-008 (revised),
 2846 Doc. No. PB253258, March 1976, referenced in Section 611.720.

2847
 2848 USEPA OGWDW Methods, Method 326.0, Revision 1.0,
 2849 "Determination of Inorganic Oxyhalide Disinfection By-Products
 2850 in Drinking Water Using Ion Chromatography Incorporating the
 2851 Addition of a Suppressor Acidified Postcolumn Reagent for Trace
 2852 Bromate Analysis," June 2002, EPA 815/R-03/007, Doc. No.
 2853 PB2003-107402, referenced in Sections 611.381 and 611.382. See
 2854 also USEPA, NSCEP and USEPA, OGWDW.

2855
 2856 USEPA Organic and Inorganic Methods, "Methods for the
 2857 Determination of Organic and Inorganic Compounds in Drinking
 2858 Water, Volume 1," August 2000, EPA 815/R-00/014, Doc. No.
 2859 PB2000-106981, referenced in Section 611.381. (For methods
 2860 300.1 (rev. 1.0), 321.8 (rev. 1.0), and 515.3 (rev. 1.0).) See also
 2861 USEPA, NSCEP.

2862

2863 USEPA Organic Methods, "Methods for the Determination of
 2864 Organic Compounds in Drinking Water," December 1988 (revised
 2865 July 1991), EPA 600/4-88/039, Doc. No. PB91-231480, referenced
 2866 in Sections 611.645 and 611.648 (Methods 508A (rev. 1.0) and
 2867 515.1 (rev. 4.0) only); "Methods for the Determination of Organic
 2868 Compounds in Drinking Water – Supplement I," July 1990, EPA
 2869 600/4-90/020, Doc. No. PB91-146027, referenced in Section
 2870 611.645 (Methods 547, 550, and 550.1 only); "Methods for the
 2871 Determination of Organic Compounds in Drinking Water –
 2872 Supplement II," August 1992, EPA 600/R-92/129, Doc. No. PB92-
 2873 207703, referenced in Sections 611.381 and 611.645. (Methods
 2874 548.1 (rev. 1.0), 552.1 (rev. 1.0), and 555 (rev. 1.0) only); and
 2875 "Methods for the Determination of Organic Compounds in Drinking
 2876 Water – Supplement III," August 1995, EPA 600/R-95/131, Doc.
 2877 No. PB95-261616, referenced in Sections 611.381, 611.645, and
 2878 611.648 (Methods 502.2 (rev. 2.1), 504.1 (rev. 1.1), 505 (rev. 2.1),
 2879 506 (rev. 1.1), 507 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 515.2
 2880 (rev. 1.1), 524.2 (rev. 4.1), 525.2 (rev. 2.0), 531.1 (rev. 3.1), 551.1
 2881 (rev. 1.0), and 552.2 (rev. 1.0) only.) See also USEPA, EMSL and
 2882 USEPA, NSCEP.
 2883
 2884 USEPA Radioactivity Methods, "Prescribed Procedures for
 2885 Measurement of Radioactivity in Drinking Water," EPA 600/4-
 2886 80/032, August 1980, Doc. No. PB80-224744, referenced in
 2887 Section 611.720 (Methods 900.0, 901.0, 901.1, 902.0, 903.0,
 2888 903.1, 904.0, 905.0, 906.0, 908.0, 908.1). See also USEPA,
 2889 NSCEP.
 2890
 2891 USEPA Radiochemical Analyses, "Radiochemical Analytical
 2892 Procedures for Analysis of Environmental Samples," March 1979,
 2893 Doc. No. EMSL LV 053917, referenced in Section 611.720.
 2894 (Pages 1-5, 19-32, 33-48, 65-73, 87-91, and 92-95 only.)
 2895
 2896 USEPA Radiochemistry Procedures, "Radiochemistry Procedures
 2897 Manual," EPA 520/5-84-006, August 1984, Doc. No. PB84-
 2898 215581, referenced in Section 611.720. (Methods 00-01, 00-02,
 2899 00-07, H-02, Ra-03, Ra-04, Ra-05, Sr-04 only.)
 2900
 2901 USEPA Technical Notes, "Technical Notes on Drinking Water
 2902 Methods," EPA 600/R-94/173, October 1994, Doc. No. PB95-
 2903 104766, referenced in Sections 611.531, 611.611, and 611.645.
 2904 See also USEPA, NSCEP.
 2905

2906 BOARD NOTE: USEPA made the following assertion with
2907 regard to this reference at 40 CFR 141.23(k)(1) and 141.24(e) and
2908 (n)(11) (2014)(2012): "This document contains other analytical
2909 test procedures and approved analytical methods that remain
2910 available for compliance monitoring until July 1, 1996." Also
2911 available online at
2912 <http://nepis.epa.gov/EPA/html/Pubs/pubtitleORD.htm> under the
2913 document designation "600R94173."
2914

2915 New Jersey Department of Environment, Division of Environmental
2916 Quality, Bureau of Radiation and Inorganic Analytical Services, 9 Ewing
2917 Street, Trenton, NJ 08625.
2918

2919 "Determination of Radium 228 in Drinking Water," August 1990
2920 (referred to as "New Jersey Radium Method"), referenced in
2921 Section 611.720.
2922

2923 New York Department of Health, Radiological Sciences Institute, Center
2924 for Laboratories and Research, Empire State Plaza, Albany, NY 12201.
2925

2926 "Determination of Ra-226 and Ra-228 (Ra-02)," January 1980,
2927 Revised June 1982 (referred to as "New York Radium Method"),
2928 referenced in Section 611.720.
2929

2930 Palintest, Ltd., 1455 Jamike Avenue, Suite 10021 Kenton Lands Road,
2931 P.O. Box 18395, Erlanger, KY (800-835-9629).
2932

2933 ChlordioX Plus Test, "Chlorine Dioxide and Chlorite in Drinking
2934 Water by Amperometry using Disposable Sensors," November
2935 2013, referenced in Sections 611.381 and 611.531.
2936

2937 Palintest Method 1001, "Lead in Drinking Water by Differential
2938 Pulse Anodic Stripping Voltammetry," Method 1001, August
2939 1999, referenced in Section 611.611.
2940

2941 Palintest ChloroSense, "Measurement of Free and Total Chlorine
2942 in Drinking Water by Palintest ChloroSense," September 2009
2943 (referred to as "Palintest ChloroSense"), referenced in Sections
2944 611.381 and 611.531. See also NEMI.
2945

2946 Standard Methods Online, available online from the Standard Methods
2947 Organization at www.standardmethods.org.
2948

2949 Method 3113 B-04, Metals by Electrothermal Atomic Absorption
2950 Spectrometry, Electrothermal Atomic Absorption Spectrometric
2951 Method, referenced in Sections 611.611 and 611.612.
2952

2953 Method 9230 B-04, Fecal Streptococcus and Enterococcus Groups,
2954 Multiple Tube Techniques, referenced in Section 611.802.
2955

2956 BOARD NOTE: Where, in appendix A to subpart C of 40 CFR
2957 141 (2014)(~~2012~~), USEPA has authorized use of an approved
2958 alternative method from Standard Methods Online, and that
2959 version of the method appears also in Standard Methods, 21st or
2960 22nd ed., the Board cites only to Standard Methods, 21st or 22nd ed.
2961 for that method. The methods that USEPA listed as available from
2962 Standard Methods Online, and which are listed above as in
2963 Standard Methods, 21st or 22nd edition, are the following: 2320 B-
2964 97 (for alkalinity), 3112 B-09 (for mercury), 3114 B-09 (for
2965 arsenic and selenium), 4500-P E-99 and 4500-P F-99; (for
2966 orthophosphate); 4500-SO₄⁻² C-97, 4500-SO₄⁻² D-97, 4500-SO₄⁻²
2967 E-97, and 4500-SO₄⁻² F-97 (for sulfate); 6640 B-01 (for 2,4-D,
2968 2,4,5-TP (silvex), (dalapon, dinoseb, pentachlorophenol, and
2969 picloram); 5561 B-00 (for glyphosate); and 9223 B-97 (for E. coli).
2970 Since each method is the same version from both sources, the
2971 Board views a copy from Standard Methods Online as equivalent
2972 to a copy from Standard Methods Online, even though the Board
2973 does not also cite to Standard Methods Online. The Board intends
2974 that use of the version of the method that is incorporated by
2975 reference is acceptable from either source.
2976

2977 SWAN Analytische Instrumente AG, Studbachstrasse 13, CH-8340,
2978 Hinwil, Switzerland.
2979

2980 AMI Turbiwell Method, "Continuous Measurement of Turbidity
2981 Using a SWAN AMI Turbiwell Turbidimeter," August 2009,
2982 referenced in Section 611.531. See also NEMI.
2983

2984 Syngenta Crop Protection, Inc., 410 Swing Road, Post Office Box 18300,
2985 Greensboro, NC 27419 (336-632-6000).
2986

2987 "Atrazine in Drinking Water by Immunoassay," February 2001
2988 (referred to as "Syngenta AG-625"), referenced in Section
2989 611.645.
2990

2991 Systea Scientific LLC, 900 Jorie Blvd., Suite 35, Oak Brook, IL 60523.

3035 USEPA Organic Methods, "Methods for the Determination of
 3036 Organic Compounds in Drinking Water," December 1988 (revised
 3037 July 1991), EPA 600/4-88/039, referenced in Sections 611.645 and
 3038 611.648 (Methods 508A (rev. 1.0) and 515.1 (rev. 4.0) only);
 3039 "Methods for the Determination of Organic Compounds in
 3040 Drinking Water – Supplement I," July 1990, EPA 600/4-90/020,
 3041 referenced in Sections 611.645 and 611.648 (Methods 547, 550,
 3042 and 550.1 only); "Methods for the Determination of Organic
 3043 Compounds in Drinking Water – Supplement II," August 1992,
 3044 EPA 600/R-92/129, referenced in Sections 611.381 and 611.645
 3045 (Methods 548.1 (rev. 1.0), 552.1 (rev. 1.0), and 555 (rev. 1.0)
 3046 only); "Methods for the Determination of Organic Compounds in
 3047 Drinking Water – Supplement III," August 1995, EPA 600/R-
 3048 95/131, referenced in Sections 611.381, 611.645, and 611.648
 3049 (Methods 502.2 (rev. 2.1), 504.1 (rev. 1.1), 505 (rev. 2.1), 506 (rev.
 3050 1.1), 507 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 515.2 (rev.
 3051 4.1), 524.2 (rev. 4.1), 525.2 (rev. 2.0), 551.1 (rev. 1.0), and 552.2
 3052 (rev. 1.0) only). See also NTIS and USEPA, NSCEP.
 3053
 3054 "Procedures for Radiochemical Analysis of Nuclear Reactor
 3055 Aqueous Solutions," EPA-R4-73-014, May 1973, referenced in
 3056 Section 611.720. See also NTIS.
 3057
 3058 USEPA, NSCEP. United States Environmental Protection Agency,
 3059 National Service Center for Environmental Publications, P.O. Box 42419,
 3060 Cincinnati, OH 45242-0419 (accessible on-line and available by download
 3061 from <http://www.epa.gov/nscep/>).
 3062
 3063 Dioxin and Furan Method 1613, Revision B, "Tetra- through Octa-
 3064 Chlorinated Dioxins and Furans by Isotope Dilution
 3065 HRGC/HRMS," October 1994, EPA 821/B-94/005, referenced in
 3066 Section 611.645. See also NTIS.
 3067
 3068 Guidance Manual for Filtration and Disinfection, "Guidance
 3069 Manual for Compliance with the Filtration and Disinfection
 3070 Requirements for Public Water Systems Using Surface Water
 3071 Sources," March 1991, EPA 570/3-91-001, referenced in Section
 3072 611.111.
 3073
 3074 USEPA Asbestos Method 100.1, "Analytical Method for
 3075 Determination of Asbestos Fibers in Water," September 1983, EPA
 3076 600/4-83-043, referenced in Section 611.611. See also NTIS.
 3077

3078 USEPA Asbestos Method 100.2, "Determination of Asbestos
 3079 Structures over 10-mm in Length in Drinking Water," June 1994,
 3080 EPA 600/R-94-134, referenced in Section 611.611. See also
 3081 NTIS.
 3082
 3083 USEPA Environmental Inorganic Methods, "Methods for the
 3084 Determination of Inorganic Substances in Environmental
 3085 Samples," August 1993, EPA 600/R-93-100, referenced in Sections
 3086 611.381, 611.531, and 611.611. (Methods 180.1 (rev. 2.0), 300.0
 3087 (rev. 2.1), 335.4 (rev. 1.0), 353.2 (rev. 2.0), and 365.1 (rev. 2.0)
 3088 only.) See also NTIS.
 3089
 3090 USEPA Environmental Metals Methods, "Methods for the
 3091 Determination of Metals in Environmental Samples – Supplement
 3092 I," May 1994, EPA 600/R-94-111, referenced in Sections 611.611,
 3093 611.612, and 611.720. (Methods 200.7 (rev. 4.4), 200.8 (rev. 5.3),
 3094 200.9 (rev. 2.2), and 245.1 (rev. 3.0) only.) See also NTIS.
 3095
 3096 USEPA Inorganic Methods, "Methods for Chemical Analysis of
 3097 Water and Wastes," March 1983, EPA 600/4-79-020, referenced in
 3098 Section 611.611. (Methods 150.1, 150.2, and 245.2 only.) See
 3099 also NTIS.
 3100
 3101 USEPA OGWDW Methods, Method 302.0, "Determination of
 3102 Bromate in Drinking Water Using Two-Dimensional Ion
 3103 Chromatography with Suppressed Conductivity Detection,"
 3104 September 2009, EPA 815/B-09/014, referenced in Sections
 3105 611.381 and 611.382. See also USEPA, OGWDW.
 3106
 3107 USEPA OGWDW Methods, Method 317.0, rev. 2.0,
 3108 "Determination of Inorganic Oxyhalide Disinfection By-Products
 3109 in Drinking Water Using Ion Chromatography with the Addition of
 3110 a Postcolumn Reagent for Trace Bromate Analysis," July 2001,
 3111 EPA 815/B-01/001, referenced in Sections 611.381 and 611.382.
 3112 See also USEPA, OGWDW.
 3113
 3114 USEPA OGWDW Methods, Method 326.0, rev. 1.0,
 3115 "Determination of Inorganic Oxyhalide Disinfection By-Products
 3116 in Drinking Water Using Ion Chromatography Incorporating the
 3117 Addition of a Suppressor Acidified Postcolumn Reagent for Trace
 3118 Bromate Analysis," June 2002, EPA 815/R-03/007, referenced in
 3119 Sections 611.381 and 611.382. See also NTIS and USEPA,
 3120 OGWDW.

3121
 3122 USEPA OGWDW Methods, Method 327.0, rev. 1.1,
 3123 "Determination of Chlorine Dioxide and Chlorite Ion in Drinking
 3124 Water Using Lissamine Green B and Horseradish Peroxidase with
 3125 Detection by Visible Spectrophotometry," May 2005, EPA 815/R-
 3126 05/008, referenced in Sections 611.381 and 611.531. See also
 3127 USEPA, OGWDW.
 3128
 3129 USEPA OGWDW Methods, Method 334.0, "Determination of
 3130 Residual in Drinking Water Using an On-line Chlorine Analyzer,"
 3131 August 2009, EPA 815/B-09/013, referenced in Section 611.531.
 3132 See also USEPA, OGWDW.
 3133
 3134 USEPA OGWDW Methods, Method 523, ver. 1.0, "Determination
 3135 of Triazine Pesticides and Other Degradates in Drinking Water by
 3136 Gas Chromatography/Mass Spectrometry (GC/MS)," February
 3137 2011, EPA 815/R-11/002, referenced in Section 611.645. See also
 3138 USEPA, OGWDW.
 3139
 3140 USEPA OGWDW Methods, Method 531.2, rev. 1.0,
 3141 "Measurement of N-methylcarbamoyloximes and N-
 3142 methylcarbamates in Water by Direct Aqueous Injection HPLC
 3143 with Postcolumn Derivatization," September 2001, EPA 815/B-
 3144 01/002 (document file name "met531_2.pdf"), referenced in
 3145 Section 611.645. See also USEPA, OGWDW.
 3146
 3147 USEPA OGWDW Methods, Method 536, ver. 1.0, "Determination
 3148 of Triazine Pesticides and Other Degradates in Drinking Water by
 3149 Liquid Chromatography Electrospray Ionization Tandem Mass
 3150 Spectrometry (LC/ESI-MS/MS)," October 2007, EPA 815/R-
 3151 07/002, referenced in Section 611.645.
 3152
 3153 USEPA OGWDW Methods, Method 552.3, rev. 1.0,
 3154 "Determination of Haloacetic Acids and Dalapon in Drinking
 3155 Water by Liquid-Liquid Microextraction, Derivatization, and Gas
 3156 Chromatography with Electron Capture Detection," July 2003,
 3157 EPA 815/B-03/002, referenced in Sections 611.381 and 611.645.
 3158
 3159 USEPA OGWDW Methods, Method 557, "Determination of
 3160 Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion
 3161 Chromatography Electrospray Ionization Tandem Mass
 3162 Spectrometry," July 2003, EPA 815/B-03/002, referenced in

3163 Sections 611.381, 611.382, and 611.645. See also USEPA,
 3164 OGWDW.
 3165
 3166 USEPA OGWDW Methods, Method 1622 (01), "Cryptosporidium
 3167 in Water by Filtration/IMS/FA," April 2001, EPA 821/R-01/026,
 3168 referenced in Section 611.1007. See also USEPA, OGWDW.
 3169
 3170 USEPA Organic and Inorganic Methods, "Methods for the
 3171 Determination of Organic and Inorganic Compounds in Drinking
 3172 Water, Volume 1," August 2000, EPA 815/R-00/014, referenced in
 3173 Section 611.381. (Methods 300.1 (rev. 1.0), 321.8 (rev. 1.0), and
 3174 515.3 (rev. 1.0) only.) See also NTIS.
 3175
 3176 USEPA Organic Methods, "Methods for the Determination of
 3177 Organic Compounds in Drinking Water," December 1988, revised
 3178 July 1991, EPA 600/4-88/039, referenced in Sections 611.645 and
 3179 611.648 (Methods 508A (rev. 1.0) and 515.1 (rev. 4.0) only);
 3180 "Methods for the Determination of Organic Compounds in
 3181 Drinking Water – Supplement I," July 1990, EPA 600/4-90/020,
 3182 referenced in Section 611.645 and 611.648 (Methods 547, 550, and
 3183 550.1 only); "Methods for the Determination of Organic
 3184 Compounds in Drinking Water – Supplement II," August 1992,
 3185 EPA 600/R-92/129, referenced in Sections 611.381 and 611.645
 3186 (Methods 548.1 (rev. 1.0), 552.1 (rev. 1.0), and 555 (rev. 1.0)
 3187 only); "Methods for the Determination of Organic Compounds in
 3188 Drinking Water – Supplement III," August 1995, EPA 600/R-
 3189 95/131, referenced in Sections 611.381, 611.645, and 611.648
 3190 (Methods 502.2 (rev. 2.1), 504.1 (rev. 1.1), 505 (rev. 2.1), 506 (rev.
 3191 1.1), 507 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 515.2 (rev.
 3192 4.1), 524.2 (rev. 4.1), 525.2 (rev. 2.0), 531.1 (rev. 3.1), 551.1 (rev.
 3193 1.0), and 552.2 (rev. 1.0) only). See also NTIS and USEPA,
 3194 EMSL.
 3195
 3196 USEPA Radioactivity Methods, "Prescribed Procedures for
 3197 Measurement of Radioactivity in Drinking Water," August 1980,
 3198 EPA 600/4-80/032, referenced in Section 611.720. (For methods
 3199 900.0, 901, 901.1, 902, 903, 903.1, 904, 905, 906, 908, 908.1
 3200 only.) See also NTIS.
 3201
 3202 USEPA Technical Notes, "Technical Notes on Drinking Water
 3203 Methods," October 1994, EPA 600/R-94/173, referenced in
 3204 Sections 611.531, 611.611, and 611.645. See also NTIS.
 3205

3206 BOARD NOTE: USEPA made the following assertion with
3207 regard to this reference at 40 CFR 141.23(k)(1) and 141.24(e) and
3208 (n)(11) (2014)(2012): "This document contains other analytical
3209 test procedures and approved analytical methods that remain
3210 available for compliance monitoring until July 1, 1996." Also
3211 available online at
3212 <http://nepis.epa.gov/EPA/html/Pubs/pubtitleORD.htm> under the
3213 document designation "600R94173."

3214
3215 USEPA, OGWDW. United States Environmental Protection Agency,
3216 Office of Ground Water and Drinking Water (accessible on-line and
3217 available by download from <http://www.epa.gov/safewater/methods/>).

3218
3219 USEPA OGWDW Methods, Method 302.0, "Determination of
3220 Bromate in Drinking Water Using Two-Dimensional Ion
3221 Chromatography with Suppressed Conductivity Detection,"
3222 September 2009, EPA 815/B-09/014, referenced in Section
3223 611.381. See also USEPA, NSCEP.

3224
3225 USEPA OGWDW Methods, Method 317.0, rev. 2.0,
3226 "Determination of Inorganic Oxyhalide Disinfection By-Products
3227 in Drinking Water Using Ion Chromatography with the Addition of
3228 a Postcolumn Reagent for Trace Bromate Analysis," USEPA, July
3229 2001, EPA 815/B-01/001, referenced in Section 611.381. See also
3230 USEPA, NSCEP.

3231
3232 USEPA OGWDW Methods, Method 326.0, rev. 1.0,
3233 "Determination of Inorganic Oxyhalide Disinfection By-Products
3234 in Drinking Water Using Ion Chromatography Incorporating the
3235 Addition of a Suppressor Acidified Postcolumn Reagent for Trace
3236 Bromate Analysis," USEPA, June 2002, EPA 815/R-03/007,
3237 referenced in Section 611.381. See also NTIS and USEPA,
3238 NSCEP.

3239
3240 USEPA OGWDW Methods, Method 327.0, rev. 1.1,
3241 "Determination of Chlorine Dioxide and Chlorite Ion in Drinking
3242 Water Using Lissamine Green B and Horseradish Peroxidase with
3243 Detection by Visible Spectrophotometry," USEPA, May 2005,
3244 EPA 815/R-05/008, referenced in Sections 611.381 and 611.531.
3245 See also USEPA, NSCEP.

3246
3247 USEPA OGWDW Methods, Method 334.0, "Determination of
3248 Residual in Drinking Water Using an On-line Chlorine Analyzer,"

3249 USEPA, August 2009, EPA 815/B-09/013, referenced in Section
 3250 611.531. See also USEPA, NSCEP.

3251
 3252 USEPA OGWDW Methods, Method 515.4, rev. 1.0,
 3253 "Determination of Chlorinated Acids in Drinking Water by Liquid-
 3254 Liquid Microextraction, Derivatization and Fast Gas
 3255 Chromatography with Electron Capture Detection," April 2000,
 3256 EPA 815/B-00/001 (document file name "met515_4.pdf"),
 3257 referenced in Section 611.645.

3258
 3259 USEPA OGWDW Methods, Method 523, ver. 1.0, "Determination
 3260 of Triazine Pesticides and Other Degradates in Drinking Water by
 3261 Gas Chromatography/Mass Spectrometry (GC/MS)," February
 3262 2011, EPA 815/R-11/002, referenced in Section 611.645. See also
 3263 USEPA, NSCEP.

3264
 3265 USEPA OGWDW Methods, Method 524.3, rev. 1.0,
 3266 "Measurement of Purgeable Organic Compounds in Water by
 3267 Capillary Column Gas Chromatography/Mass Spectrometry," June
 3268 2009, EPA 815/B-09/009, referenced in Sections 611.381 and
 3269 611.645.

3270
 3271 USEPA OGWDW Methods, Method 524.4, "Measurement of
 3272 Purgeable Organic Compounds in Water by Gas
 3273 Chromatography/Mass Spectrometry Using Nitrogen Purge Gas,"
 3274 May 2013, EPA 815/R-13/002, referenced in Sections 611.381 and
 3275 611.645.

3276
 3277 USEPA OGWDW Methods, Method 531.2, rev. 1.0,
 3278 "Measurement of N-methylcarbamoyloximes and N-
 3279 methylcarbamates in Water by Direct Aqueous Injection HPLC
 3280 with Postcolumn Derivatization," September 2001, EPA 815/B-
 3281 01/002 (document file name "met531_2.pdf"), referenced in
 3282 Section 611.645. See also USEPA, NSCEP.

3283
 3284 USEPA OGWDW Methods, Method 536, ver. 1.0, "Determination
 3285 of Triazine Pesticides and Other Degradates in Drinking Water by
 3286 Liquid Chromatography Electrospray Ionization Tandem Mass
 3287 Spectrometry (LC/ESI-MS/MS)," October 2007, EPA 815/R-
 3288 07/002, referenced in Section 611.645.

3289
 3290 USEPA OGWDW Methods, Method 552.3, rev. 1.0,
 3291 "Determination of Haloacetic Acids and Dalapon in Drinking

3292 Water by Liquid-liquid Microextraction, Derivatization, and Gas
3293 Chromatography with Electron Capture Detection," USEPA, July
3294 2003, EPA 815/B-03/002, referenced in Sections 611.381 and
3295 611.645.
3296
3297 USEPA OGWDW Methods, Method 557, "Determination of
3298 Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion
3299 Chromatography Electrospray Ionization Tandem Mass
3300 Spectrometry," July 2003, EPA 815/B-03/002, referenced in
3301 Sections 611.381 and 611.645. See also USEPA, NSCEP.
3302
3303 USEPA OGWDW Methods, Method 1622 (05), "Method 1622:
3304 Cryptosporidium in Water by Filtration/IMS/FA," December 2005,
3305 EPA 815/R-05/001, referenced in Sections 611.1004 and
3306 611.1007.
3307
3308 USEPA OGWDW Methods, Method 1622 (01), "Method 1622:
3309 Cryptosporidium in Water by Filtration/IMS/FA," April 2001,
3310 EPA 821/R-01/026, referenced in Section 611.1007. See also
3311 USEPA, NSCEP.
3312
3313 USEPA OGWDW Methods, Method 1622 (99), "Method 1622:
3314 Cryptosporidium in Water by Filtration/IMS/FA," April 1999,
3315 EPA 821/R-99/001, referenced in Section 611.1007.
3316
3317 USEPA OGWDW Methods, Method 1623 (05), "Method 1623:
3318 Cryptosporidium and Giardia in Water by Filtration/IMS/FA,"
3319 December 2005, EPA 815/R-05/002, referenced in Sections
3320 611.1004 and 611.1007.
3321
3322 USEPA OGWDW Methods, Method 1623 (01), "Method 1623:
3323 Cryptosporidium and Giardia in Water by Filtration/IMS/FA,"
3324 April 2001, EPA 821/R-01/025, referenced in Section 611.1007.
3325
3326 USEPA OGWDW Methods, Method 1623 (99), "Method 1623:
3327 Cryptosporidium and Giardia in Water by Filtration/IMS/FA,"
3328 January 1999, EPA 821/R-99/006, referenced in Section 611.1007.
3329
3330 USEPA OGWDW Methods, Method 1623.1, "Method 1623.1:
3331 Cryptosporidium and Giardia in Water by Filtration/IMS/FA,"
3332 January 2012, EPA 816/R-12/001, referenced in Section 611.1004.
3333

3334 BOARD NOTE: Many of the above-listed documents available
3335 from the USEPA, Office of Ground Water and Drinking Water are
3336 also listed as available from NTIS.

3337
3338 USEPA, ORD. USEPA, Office of Research and Development, National
3339 Exposure Research Laboratory, Microbiological & Chemical Exposure
3340 Assessment Research Division (accessible on-line and available by
3341 download from <http://www.epa.gov/nerlcwww/ordmeth.htm>).

3342
3343 USEPA NERL Method 200.5, rev. 4.2, "Determination of Trace
3344 Elements in Drinking Water by Axially Viewed Inductively
3345 Coupled Plasma – Atomic Emission Spectrometry," October 2003,
3346 EPA 600/R-06/115, referenced in Sections 611.611 and 611.612.

3347
3348 USEPA NERL Method 415.3, rev. 1.1, "Determination of Total
3349 Organic Carbon and Specific UV Absorbance at 254 nm in Source
3350 Water and Drinking Water," February 2005, EPA 600/R-05/055,
3351 referenced in Section 611.381.

3352
3353 USEPA NERL Method 415.3, rev. 1.2, "Determination of Total
3354 Organic Carbon and Specific UV Absorbance at 254 nm in Source
3355 Water and Drinking Water," September 2009, EPA 600/R-09/122,
3356 referenced in Section 611.381.

3357
3358 USEPA NERL Method 525.3, ver. 1.0, "Method 525.3, Version
3359 1.0: Determination of Total Semivolatile Organic Chemicals in
3360 Drinking Water by Solid Phase Extraction and Capillary Column
3361 Gas Chromatography/Mass Spectrometry (GC/MS)," February
3362 2012, EPA 600/R-12/010, referenced in Section 611.645.

3363
3364 USEPA NERL Method 549.2, rev. 1.0, "Determination of Diquat
3365 and Paraquat in Drinking Water by Liquid-Solid Extraction and
3366 High Performance Liquid Chromatography with Ultraviolet
3367 Detection," June 1997, referenced in Section 611.645.

3368
3369 USEPA, Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue,
3370 NW, Washington, DC 20460:

3371
3372 E*Colite Test, "Charm E*Colite Presence/Absence Test for
3373 Detection and Identification of Coliform Bacteria and Escherichia
3374 coli in Drinking Water," January 9, 1998, referenced in Sections
3375 611.802 and 611.1052. See also Charm Sciences, Inc.

3376

3377 m-ColiBlue24 Test, "Total Coliforms and E. coli Membrane
3378 Filtration Method with m-ColiBlue24® Broth," Method No.
3379 10029, rev. 2, August 17, 1999, referenced in Sections 611.802 and
3380 611.1052. See also The Hach Company.
3381
3382 USEPA Method 1600, "EPA Method 1600: Enterococci in Water
3383 by Membrane Filtration Using Membrane-Enterococcus Indoxyl-
3384 b-D-Glucoside Agar (mEI)," September 2002, EPA 821/R-02/022
3385 is an approved variation of Standard Methods, Method 9230 C,
3386 "Fecal Streptococcus and Enterococcus Groups, Membrane Filter
3387 Techniques" (which has not itself been approved for use by
3388 USEPA) (accessible on-line and available by download from
3389 <http://www.epa.gov/nerlcwww/1600sp02.pdf>), referenced in
3390 Section 611.802.
3391
3392 USEPA Method 1601, "Method 1601: Male-specific (F⁺) and
3393 Somatic Coliphage in Water by Two-step Enrichment Procedure,"
3394 April 2001, EPA 821/R-01/030 (accessible on-line and available
3395 by download from <http://www.epa.gov/nerlcwww/1601ap01.pdf>),
3396 referenced in Section 611.802.
3397
3398 USEPA Method 1602, "Method 1602: Male-specific (F⁺) and
3399 Somatic Coliphage in Water by Single Agar Layer (SAL)
3400 Procedure," April 2001, EPA 821/R-01/029 (accessible on-line and
3401 available by download from
3402 <http://www.epa.gov/nerlcwww/1602ap01.pdf>), referenced in
3403 Section 611.802.
3404
3405 USEPA Method 1604, "Method 1604: Total Coliforms and
3406 Escherichia coli in Water by Membrane Filtration Using a
3407 Simultaneous Detection Technique (MI Medium)," September
3408 2002, EPA 821/R-02/024 (accessible on-line and available by
3409 download from <http://www.epa.gov/nerlcwww/1604sp02.pdf>),
3410 referenced in Sections 611.802 and 611.1052.
3411
3412 USGS. United States Geological Survey, Federal Center, Box 25286,
3413 Denver, CO 80225-0425.
3414
3415 Method available upon request by method number from "Methods
3416 for Analysis by the U.S. Geological Survey National Water
3417 Quality Laboratory – Determination of Inorganic and Organic
3418 Constituents in Water and Fluvial Sediments," Open File Report
3419 93-125, 1993 (referred to as "USGS Methods").

3420	
3421	I-2601-90, referenced in Section 611.611.
3422	
3423	Methods available upon request by method number from Book 5,
3424	Chapter A-1, "Methods for Determination of Inorganic Substances
3425	in Water and Fluvial Sediments," 3 rd ed., USGS Techniques of
3426	Water-Resource Investigation: 05-A1, 1989 (referred to as :USGS
3427	Methods").
3428	
3429	I-1030-85, referenced in Section 611.611.
3430	
3431	I-1601-85, referenced in Section 611.611.
3432	
3433	I-1700-85, referenced in Section 611.611.
3434	
3435	I-2598-85, referenced in Section 611.611.
3436	
3437	I-2700-85, referenced in Section 611.611.
3438	
3439	I-3300-85, referenced in Section 611.611.
3440	
3441	Methods available upon request by method number from "Methods
3442	for Determination of Radioactive Substances in Water and Fluvial
3443	Sediments," Chapter A5 in Book 5 of "Techniques of Water-
3444	Resources Investigations of the United States Geological Survey,"
3445	1977.
3446	
3447	R-1110-76, referenced in Section 611.720.
3448	
3449	R-1111-76, referenced in Section 611.720.
3450	
3451	R-1120-76, referenced in Section 611.720.
3452	
3453	R-1140-76, referenced in Section 611.720.
3454	
3455	R-1141-76, referenced in Section 611.720.
3456	
3457	R-1142-76, referenced in Section 611.720.
3458	
3459	R-1160-76, referenced in Section 611.720.
3460	
3461	R-1171-76, referenced in Section 611.720.
3462	

3463 R-1180-76, referenced in Section 611.720.

3464
3465 R-1181-76, referenced in Section 611.720.

3466
3467 R-1182-76, referenced in Section 611.720.

3468
3469 BOARD NOTE: USGS methods are freely available for download
3470 in an electronic format from the USGS Publications Warehouse, at
3471 pubs.er.usgs.gov/. Sections 611.611 and 611.720 do not
3472 distinguish the volume in which each USGS method appears. The
3473 distinction as to which volume where a particular method appears
3474 is made in this incorporation by reference.

3475
3476 Veolia Water Solutions and Technologies, Suite 4697, Biosciences
3477 Complex, 116 Barrie Street, Kingston, Ontario, Canada K7L 3N6.

3478
3479 "Tecta EC/TC P-A Test, "Presence/Absence Method for
3480 Simultaneous Detection of Total Coliforms and Escherichia coli
3481 (E. coli) in Drinking Water," April 2014, referenced in Section
3482 611.526.

3483
3484 Waters Corporation, Technical Services Division, 34 Maple St., Milford,
3485 MA 01757 (800-252-4752 or 508-478-2000, www.waters.com).

3486
3487 "Waters Test Method for Determination of Nitrite/Nitrate in Water
3488 Using Single Column Ion Chromatography," Method B-1011,
3489 August 1987 (referred to as "Waters Method B-1011"), referenced
3490 in Section 611.611.

3491
3492 c) The Board incorporates the following federal regulations by reference:

3493
3494 40 CFR 3.2 (2014)(2013) (How Does This Part Provide for Electronic
3495 Reporting?), referenced in Section 611.105.

3496
3497 40 CFR 3.3 (2014)(2013) (What Definitions Are Applicable to This
3498 Part?), referenced in Section 611.105.

3499
3500 40 CFR 3.10 (2014)(2013) (What Are the Requirements for Electronic
3501 Reporting to EPA?), referenced in Section 611.105.

3502
3503 40 CFR 3.2000 (2014)(2013) (What Are the Requirements Authorized
3504 State, Tribe, and Local Programs' Reporting Systems Must Meet?),
3505 referenced in Section 611.105.

- 3506
- 3507 40 CFR 136.3(a) (2014)~~(2013)~~, referenced in Section 611.1004.
- 3508
- 3509 Appendix B to 40 CFR 136 (2014)~~(2012)~~, referenced in Sections 611.359,
- 3510 611.609, and 611.646.
- 3511
- 3512 40 CFR 142.20(b)(1) (2014)~~(2013)~~, referenced in Section 611.112.
- 3513
- 3514 Subpart G of 40 CFR 142 (2014)~~(2013)~~, referenced in Section 611.113.
- 3515

3516 d) This Part incorporates no later amendments or editions.

3517 (Source: Amended at 39 Ill. Reg. _____, effective _____)

3520 SUBPART I: DISINFECTANT RESIDUALS, DISINFECTION
3521 BYPRODUCTS, AND DISINFECTION BYPRODUCT PRECURSORS
3522

3523 **Section 611.381 Analytical Requirements**

- 3524
- 3525 a) A supplier must use only the analytical methods specified in this Section, each of
- 3526 which is incorporated by reference in Section 611.102, or alternative methods
- 3527 approved by the Agency pursuant to Section 611.480 to demonstrate compliance
- 3528 with the requirements of this Subpart I and with the requirements of Subparts W
- 3529 and Y of this Part.
- 3530
- 3531 b) Disinfection byproducts (DBPs).
- 3532
- 3533 1) A supplier must measure disinfection byproducts (DBPs) by the appropriate
- 3534 of the following methods:
- 3535
- 3536 A) TTHM:
- 3537
- 3538 i) By purge and trap, gas chromatography, electrolytic
- 3539 conductivity detector, and photoionization detector:
- 3540 USEPA Organic Methods, Method 502.2 (rev. 2.1). If
- 3541 TTHMs are the only analytes being measured in the
- 3542 sample, then a photoionization detector is not required.
- 3543
- 3544 ii) By purge and trap, gas chromatography, mass
- 3545 spectrometer: USEPA Organic Methods, Method 524.2
- 3546 (rev. 4.1).
- 3547

- 3548
3549
3550
3551
3552
3553
3554
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- iii) By liquid-liquid extraction, gas chromatography, electron capture detector: USEPA Organic Methods, Method 551.1 (rev. 1.0).
 - iv) By purge and trap, gas chromatography, mass spectrometry: USEPA OGWDW Methods, Method 524.3 (rev. 1.0) and 524.4.

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BOARD NOTE: USEPA added USEPA OGWDW Methods, Method 524.3 (rev. 1.0) as an approved alternative method for TTHM in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA added USEPA OGWDW Methods, Method 524.4 as approved alternative methods for total trihalomethanes in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

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B) HAA5:

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- i) By liquid-liquid extraction (diazomethane), gas chromatography, electron capture detector: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 6251 B.
 - ii) By solid phase extractor (acidic methanol), gas chromatography, electron capture detector: USEPA Organic Methods, Method 552.1 (rev. 1.0).
 - iii) By liquid-liquid extraction (acidic methanol), gas chromatography, electron capture detector: USEPA Organic Methods, Method 552.2 (rev. 1.0) or USEPA OGWDW Methods, Method 552.3 (rev. 1.0).
 - iv) By ion chromatography, electrospray ionization, tandem mass spectrometry: USEPA OGWDW Methods, Method 557.

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BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 6251 B as an approved alternative method for HAA5 in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added USEPA OGWDW Methods, Method 557 as approved alternative methods for HAA5 in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Method 6251 B as an approved alternative methods for HAA5 in

3591 appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78
 3592 Fed. Reg. 32558). USEPA added Standard Methods Online,
 3593 Method 6251 B-07 as an approved alternative method for HAA5 in
 3594 appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79
 3595 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method
 3596 6251 B is the same version as Standard Methods Online, Method
 3597 9221 B-07, the Board has not listed the Standard Methods Online
 3598 versions separately.

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 3600 C) Bromate:

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- 3602 i) By ion chromatography: USEPA Organic and Inorganic
 - 3603 Methods, Method 300.1 (rev. 1.0).
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 - 3605 ii) By ion chromatography and post-column reaction: USEPA
 - 3606 OGWDW Methods, Method 317.0 (rev. 2.0) or 326.0 (rev.
 - 3607 1.0).
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 - 3609 iii) By inductively coupled plasma-mass spectrometer:
 - 3610 USEPA Organic and Inorganic Methods, Method 321.8
 - 3611 (rev. 1.0).
 - 3612
 - 3613 iv) By two-dimensional ion chromatography: USEPA
 - 3614 OGWDW Methods, Method 302.0.
 - 3615
 - 3616 v) By ion chromatography, electrospray ionization, tandem
 - 3617 mass spectrometry: USEPA OGWDW Methods, Method
 - 3618 557.
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 - 3620 vi) By chemically suppressed chromatography: ASTM
 - 3621 Method D6581-08 A.
 - 3622
 - 3623 vii) By electrolytically suppressed chromatography: ASTM
 - 3624 Method D6581-08 B.
 - 3625

3626 BOARD NOTE: Ion chromatography and post column reaction or
 3627 inductively coupled plasma-mass spectrometry must be used for
 3628 monitoring of bromate for purposes of demonstrating eligibility of
 3629 reduced monitoring, as prescribed in Section 611.382(b)(3)(B).
 3630 For inductively coupled plasma-mass spectrometry, samples must
 3631 be preserved at the time of sampling with 50 mg ethylenediamine
 3632 (EDA) per liter of sample, and the samples must be analyzed
 3633 within 28 days.

BOARD NOTE: USEPA added USEPA OGWDW Methods, Methods 302.0 and 557 and ASTM Methods D6581-08 A and B as approved alternative methods for bromate in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908).

D) Chlorite:

- i) By amperometric titration for daily monitoring pursuant to Section 611.382(b)(2)(A)(i): Standard Methods, 19th, 21st, or 22nd ed., Method 4500-ClO₂ E.
- ii) By amperometric sensor for daily monitoring pursuant to Section 611.382(b)(2)(A)(i): ChlordioX Plus Test.
- iii) By spectrophotometry: USEPA OGWDW Methods, Method 327.0 (rev. 1.1).
- iv) By ion chromatography: USEPA Environmental Inorganic Methods, Method 300.0 (rev. 2.1); USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0); USEPA OGWDW Methods, Method 317.0 (rev. 2.0), or 326.0 (rev. 1.0); or ASTM Method D6581-00.
- v) By chemically suppressed chromatography: ASTM Method D6581-08 A.
- vi) By electrolytically suppressed chromatography: ASTM Method D6581-08 B.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 4500-ClO₂ E as an approved alternative method for daily chlorite in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Methods D6581-08 A and B as approved alternative methods for chlorite in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Method 4500-ClO₂ E as an approved alternative method for chlorite in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added ChlordioX Plus Test as an approved alternative method for chlorite in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

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

- 2) Analyses under this Section for DBPs must be conducted by a certified laboratory in one of the categories listed in Section 611.490(a) except as specified under subsection (b)(3) of this Section. To receive certification to conduct analyses for the DBP contaminants listed in Sections 611.312 and 611.381 and Subparts W and Y of this Part, the laboratory must fulfill the requirements of subsections (b)(2)(A), (b)(2)(C), and (b)(2)(D) of this Section.
 - A) The laboratory must analyze performance evaluation (PE) samples that are acceptable to USEPA or the Agency at least once during each consecutive 12-month period by each method for which the laboratory desires certification.
 - B) This subsection corresponds with 40 CFR 141.131(b)(2)(ii), which has expired by its own terms. This statement maintains structural consistency with the corresponding federal rule.
 - C) The laboratory must achieve quantitative results on the PE sample analyses that are within the acceptance limits set forth in subsections (b)(2)(C)(i) through (b)(2)(B)(xi) of this Section, subject to the conditions of subsections (b)(2)(C)(xii) and (b)(2)(C)(xiii) of this Section:
 - i) Chloroform (a THM): $\pm 20\%$ of true value;
 - ii) Bromodichloromethane (a THM): $\pm 20\%$ of true value;
 - iii) Dibromochloromethane (a THM): $\pm 20\%$ of true value;
 - iv) Bromoform (a THM): $\pm 20\%$ of true value;
 - v) Monochloroacetic Acid (an HAA5): $\pm 40\%$ of true value;
 - vi) Dichloroacetic Acid (an HAA5): $\pm 40\%$ of true value;

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- vii) Trichloroacetic Acid (an HAA5): $\pm 40\%$ of true value;
 - viii) Monobromoacetic Acid (an HAA5): $\pm 40\%$ of true value;
 - ix) Dibromoacetic Acid (an HAA5): $\pm 40\%$ of true value;
 - x) Chlorite: $\pm 30\%$ of true value; and
 - xi) Bromate: $\pm 30\%$ of true value.
 - xii) The laboratory must meet all four of the individual THM acceptance limits set forth in subsections (b)(2)(B)(i) through (b)(2)(B)(iv) of this Section in order to successfully pass a PE sample for TTHM.
 - xiii) The laboratory must meet the acceptance limits for four out of the five HAA5 compounds set forth in subsections (b)(2)(B)(v) through (b)(2)(B)(ix) of this Section in order to successfully pass a PE sample for HAA5.
- D) The laboratory must report quantitative data for concentrations at least as low as the minimum reporting levels (MRLs) listed in subsections (b)(2)(D)(i) through (b)(2)(D)(xi) of this Section, subject to the limitations of subsections (b)(2)(D)(xii) and (b)(2)(D)(xiii) of this Section, for all DBP samples analyzed for compliance with Sections 611.312 and 611.385 and Subparts W and Y of this Part:
- i) Chloroform (a THM): 0.0010 mg/l;
 - ii) Bromodichloromethane (a THM): 0.0010 mg/l;
 - iii) Dibromochloromethane (a THM): 0.0010 mg/l;
 - iv) Bromoform (a THM): 0.0010 mg/l;
 - v) Monochloroacetic Acid (an HAA5): 0.0020 mg/l;
 - vi) Dichloroacetic Acid (an HAA5): 0.0010 mg/l;
 - vii) Trichloroacetic Acid (an HAA5): 0.0010 mg/l;

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- viii) Monobromoacetic Acid (an HAA5): 0.0010 mg/ℓ;
 - ix) Dibromoacetic Acid (an HAA5): 0.0010 mg/ℓ;
 - x) Chlorite: 0.020 mg/ℓ, applicable to monitoring as required by Section 611.382(b)(2)(A)(ii) and (b)(2)(B); and
 - xi) Bromate: 0.0050, or 0.0010 mg/ℓ if the laboratory uses USEPA OGWDW Methods, Method 317.0 or 326.0 or USEPA Organic and Inorganic Methods, Method 321.8.
 - xii) The calibration curve must encompass the regulatory MRL concentration. Data may be reported for concentrations lower than the regulatory MRL as long as the precision and accuracy criteria are met by analyzing an MRL check standard at the lowest reporting limit chosen by the laboratory. The laboratory must verify the accuracy of the calibration curve at the MRL concentration by analyzing an MRL check standard with a concentration less than or equal to 110% of the MRL with each batch of samples. The measured concentration for the MRL check standard must be ±50% of the expected value, if any field sample in the batch has a concentration less than five times the regulatory MRL. Method requirements to analyze higher concentration check standards and meet tighter acceptance criteria for them must be met in addition to the MRL check standard requirement.
 - xiii) When adding the individual trihalomethane or haloacetic acid concentrations, for the compounds listed in subsections (b)(2)(D)(v) through (b)(2)(D)(ix) of this Section, to calculate the TTHM or HAA5 concentrations, respectively, a zero is used for any analytical result that is less than the MRL concentration for that DBP, unless otherwise specified by the Agency.
- 3) A party approved by USEPA or the Agency must measure daily chlorite samples at the entrance to the distribution system.
- c) Disinfectant residuals.
- 1) A supplier must measure residual disinfectant concentrations for free chlorine, combined chlorine (chloramines), and chlorine dioxide by the appropriate of the methods listed in subsections (c)(1)(A) through (c)(1)(D)

3807 of this Section, subject to the provisions of subsection (c)(1)(E) of this
 3808 Section:

3809 A) Free Chlorine:

- 3810 i) Amperometric titration: Standard Methods, 19th, 20th, 21st,
 3811 or 22nd ed., Method 4500-Cl D, or ASTM Method D1253-
 3812 86, D1253-96, D1253-03, or D1253-08;
- 3813 ii) DPD ferrous titration: Standard Methods, 19th, 20th, 21st, or
 3814 22nd ed., Method 4500-Cl F;
- 3815 iii) DPD colorimetric: Standard Methods, 19th, 20th, 21st, or
 3816 22nd ed., Method 4500-Cl G or Hach Method 10260;
- 3817 iv) Syringaldazine (FACTS): Standard Methods, 19th, 20th,
 3818 21st, or 22nd ed., Method 4500-Cl H;
- 3819 v) Test strips: ITS Method D99-003 if approved by the
 3820 Agency pursuant to subsection (c)(2) of this Section;
- 3821 vi) Amperometric sensor: Palintest ChloroSense; or
- 3822 vii) On-line chlorine analyzer: USEPA OGWDW Methods,
 3823 Method 334.0;

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 3830 BOARD NOTE: USEPA added Standard Methods, 21st ed.,
 3831 Methods 4500-Cl D, F, G, and H as approved alternative methods
 3832 for free chlorine in appendix A to subpart C of 40 CFR 141 on
 3833 June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM
 3834 Method D1253-08, USEPA OGWDW Methods, Method 334.0,
 3835 and Palintest ChloroSense as approved alternative methods for free
 3836 chlorine in appendix A to subpart C of 40 CFR 141 on November
 3837 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard
 3838 Methods, 22nd ed., Methods 4500-Cl D, F, G, and H as approved
 3839 alternative methods for free chlorine in appendix A to subpart C of
 3840 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA
 3841 added Hach Method 10260 as an approved alternative method for
 3842 free chlorine in appendix A to subpart C of 40 CFR 141 on June
 3843 19, 2014 (at 79 Fed. Reg. 35081).

3844 B) Combined Chlorine:

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- 3850 i) Amperometric titration: Standard Methods, 19th, 20th, 21st,
3851 or 22nd ed., Method 4500-Cl D, or ASTM Method D1253-
3852 86, D1253-96, D1253-03, or D1253-08;
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- 3854 ii) DPD ferrous titration: Standard Methods, 19th, 20th, 21st, or
3855 22nd ed., Method 4500-Cl F; or
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- 3857 iii) DPD colorimetric: Standard Methods, 19th, 20th, 21st, or
3858 22nd ed., Method 4500-Cl G or Hach Method 10260.
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3860 BOARD NOTE: USEPA added Standard Methods, Methods
3861 4500-Cl D, F, and G as approved alternative methods for free
3862 chlorine in appendix A to subpart C of 40 CFR 141 on June 3,
3863 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method
3864 D1253-08 as an approved alternative method for combined
3865 chlorine in appendix A to subpart C of 40 CFR 141 on November
3866 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard
3867 Methods, 22nd ed., Methods 4500-Cl D, F, and G as approved
3868 alternative methods for combined chlorine in appendix A to
3869 subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg.
3870 37463). USEPA added Hach Method 10260 as an approved
3871 alternative method for combined chlorine in appendix A to subpart
3872 C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).
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3874 C) Total Chlorine:

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- 3876 i) Amperometric titration: Standard Methods, 19th, 20th, 21st,
3877 or 22nd ed., Method 4500-Cl D, or ASTM Method D1253-
3878 86, D1253-96, D1253-03, or D1253-08;
- 3879
- 3880 ii) Low-level amperometric titration: Standard Methods, 19th,
3881 20th, 21st, or 22nd ed., Method 4500-Cl E;
- 3882
- 3883 iii) DPD ferrous titration: Standard Methods, 19th, 20th, 21st, or
3884 22nd ed., Method 4500-Cl F;
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- 3886 iv) DPD colorimetric: Standard Methods, 19th, 20th, 21st, or
3887 22nd ed., Method 4500-Cl G or Hach Method 10260;
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- 3889 v) Iodometric electrode: Standard Methods, 19th, 20th, 21st, or
3890 22nd ed., Method 4500-Cl I;
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- 3892 vi) Amperometric sensor: Palintest ChloroSense; or

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- vii) On-line chlorine analyzer: USEPA OGWDW Methods, Method 334.0.

BOARD NOTE: USEPA added Standard Methods, Methods 4500-Cl D, E, F, G, and I as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D1253-08, USEPA OGWDW Methods, Method 334.0, and Palintest ChloroSense as approved alternative methods for total chlorine in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 4500-Cl D, E, F, G, and I as approved alternative methods for total chlorine in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Hach Method 10260 as an approved alternative method for total chlorine in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

3912 D) Chlorine Dioxide:

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- i) DPD: Standard Methods, 19th, 20th, or 21st ed., Method 4500-ClO₂ D;
 - ii) Amperometric Method II: Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 4500-ClO₂ E; ~~or~~
 - iii) Amperometric sensor: ChlordioX Plus Test; or
 - iv) ~~iii~~) Lissamine Green spectrophotometric: USEPA OGWDW Method 327.0 (rev. 1.1).

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BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4500-ClO₂ D and E as approved alternative methods for chlorine dioxide in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Method 4500-ClO₂ E as an approved alternative method for chlorine dioxide in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added ChlordioX Plus Test as an approved alternative method for chlorine dioxide in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

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- E) The methods listed are approved for measuring the specified disinfectant residual. The supplier may measure free chlorine or total chlorine for demonstrating compliance with the chlorine MRDL and combined chlorine, or total chlorine may be measured for demonstrating compliance with the chloramine MRDL.
 - 2) Alternative methods available only upon specific approval by the Agency.
 - A) Test strips: ITS Method D99-003.

BOARD NOTE: USEPA added ITS Method D99-003 as an approved alternative method for free chlorine in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616), contingent upon specific state approval. The Board has opted to provide that the Agency can grant such approvals on a case-by-case basis using the SEP mechanism.
 - B) If approved by the Agency, by an SEP issued pursuant to Section 611.110, a supplier may also measure residual disinfectant concentrations for chlorine, chloramines, and chlorine dioxide by using DPD colorimetric test kits.
 - 3) A party approved by USEPA or the Agency must measure residual disinfectant concentration.
 - d) A supplier required to analyze parameters not included in subsections (b) and (c) of this Section must use the methods listed below. A party approved by USEPA or the Agency must measure the following parameters:
 - 1) Alkalinity. All methods allowed in Section 611.611(a)(21) for measuring alkalinity.
 - 2) Bromide:
 - A) USEPA Inorganic Methods, Method 300.0 (rev. 2.1);
 - B) USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0);
 - C) USEPA OGWDW Methods, Method 317.0 (rev. 2.0) or Method 326.0 (rev. 1.0); or
 - D) ASTM Method D6581-00.

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- 3) Total Organic Carbon (TOC), by any of the methods listed in subsection (d)(3)(A)(i), (d)(3)(A)(ii), (d)(3)(A)(iii), or (d)(3)(B) of this Section, subject to the limitations of subsection (d)(3)(C) of this Section:
 - A) High-temperature combustion:
 - i) Standard Methods, 19th (Supplement), 20th, 21st, or 22nd ed., Method 5310 B; or
 - ii) USEPA NERL Method 415.3 (rev. 1.2).
 - B) Persulfate-ultraviolet or heated-persulfate oxidation:
 - i) Standard Methods, 19th (Supplement), 20th, 21st, or 22nd ed., Method 5310 C; or
 - ii) USEPA NERL Method 415.3 (rev. 1.2).
 - C) Wet oxidation method:
 - i) Standard Methods, 19th (Supplement), 20th, 21st, or 22nd ed., Method 5310 D; or
 - ii) USEPA NERL Method 415.3 (rev. 1.2).
 - D) Specific UV₂₅₄ absorbance: USEPA NERL Method 415.3 (rev. 1.1) or 415.3 (rev. 1.2).
 - E) Inorganic carbon must be removed from the samples prior to analysis. TOC samples may not be filtered prior to analysis. TOC samples must be acidified at the time of sample collection to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified TOC samples must be analyzed within 28 days.

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BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 5310 B, C, and D as approved alternative methods for total organic carbon in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added USEPA NERL Method 415.3 (rev. 1.2) as an approved alternative method for total organic carbon in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 5310 B, C, and D as

4021 approved alternative methods for total organic carbon in appendix A to
 4022 subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463).
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4024 4) Specific Ultraviolet Absorbance (SUVA). SUVA is equal to the UV
 4025 absorption at 254 nm (UV_{254}) (measured in m^{-1}) divided by the dissolved
 4026 organic carbon (DOC) concentration (measured as mg/l). In order to
 4027 determine SUVA, it is necessary to separately measure UV_{254} and DOC.
 4028 When determining SUVA, a supplier must use the methods stipulated in
 4029 subsection (d)(4)(A) of this Section to measure DOC and the method
 4030 stipulated in subsection (d)(4)(B) of this Section to measure UV_{254} . SUVA
 4031 must be determined on water prior to the addition of disinfectants/oxidants
 4032 by the supplier. DOC and UV_{254} samples used to determine a SUVA value
 4033 must be taken at the same time and at the same location.
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4035 A) Dissolved Organic Carbon (DOC). Prior to analysis, DOC samples
 4036 must be filtered through the 0.45 μm pore-diameter filter as soon as
 4037 practical after sampling, not to exceed 48 hours. After filtration,
 4038 DOC samples must be acidified to achieve pH less than or equal to
 4039 2 with minimal addition of the acid specified in the method or by
 4040 the instrument manufacturer. Acidified DOC samples must be
 4041 analyzed within 28 days after sample collection. Inorganic carbon
 4042 must be removed from the samples prior to analysis. Water passed
 4043 through the filter prior to filtration of the sample must serve as the
 4044 filtered blank. This filtered blank must be analyzed using
 4045 procedures identical to those used for analysis of the samples and
 4046 must meet the following standards: DOC less than 0.5 mg/l .
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- 4048 i) High-Temperature Combustion Method: Standard
 4049 Methods, 19th (Supplement), 20th, 21st, or 22nd ed., Method
 4050 5310 B or USEPA NERL Methods 415.3 (rev. 1.1) or
 4051 415.3 (rev. 1.2).
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- 4053 ii) Persulfate-Ultraviolet or Heated-Persulfate Oxidation
 4054 Method, Standard Methods, 19th (Supplement), 20th, 21st, or
 4055 22nd ed., Method 5310 C or USEPA NERL Methods 415.3
 4056 (rev. 1.1) or 415.3 (rev. 1.2).
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- 4058 iii) Wet-Oxidation Method: Standard Methods, 19th
 4059 (Supplement), 20th, 21st, or 22nd ed., Method 5310 D or
 4060 USEPA NERL Methods 415.3 (rev. 1.1) or 415.3 (rev. 1.2).
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4062 BOARD NOTE: USEPA added Standard Methods, Methods 5310
 4063 B, C, and D as approved alternative methods for dissolved organic

4064 carbon in appendix A to subpart C of 40 CFR 141 on June 3, 2008
 4065 (at 73 Fed. Reg. 31616). USEPA added USEPA NERL Method
 4066 415.3 (rev. 1.2) as an approved alternative method for dissolved
 4067 organic carbon in appendix A to subpart C of 40 CFR 141 on
 4068 November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added
 4069 Standard Methods, 22nd ed., Methods 5310 B, C, and D as
 4070 approved alternative methods for dissolved organic carbon in
 4071 appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78
 4072 Fed. Reg. 37463).

- 4073
- 4074 B) Ultraviolet Absorption at 254 nm (UV₂₅₄) by spectrometry:
 4075 Standard Methods, 19th, 20th, 21st, or 22nd ed., Method 5910 B or
 4076 USEPA NERL Method 415.3 (rev. 1.1) or 415.3 (rev. 1.2). UV
 4077 absorption must be measured at 253.7 nm (may be rounded off to
 4078 254 nm). Prior to analysis, UV₂₅₄ samples must be filtered through
 4079 a 0.45 µm pore-diameter filter. The pH of UV₂₅₄ samples may not
 4080 be adjusted. Samples must be analyzed as soon as practical after
 4081 sampling, not to exceed 48 hours; and

4082

4083 BOARD NOTE: USEPA added Standard Methods, 21st ed.,
 4084 Method 5910 B as an approved alternative method for ultraviolet
 4085 absorption at 254 nm in appendix A to subpart C of 40 CFR 141 on
 4086 June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added USEPA
 4087 NERL Method 415.3 (rev. 1.2) as an approved alternative method
 4088 for ultraviolet absorbance in appendix A to subpart C of 40 CFR
 4089 141 on November (at 74 Fed. Reg. 57908). USEPA added
 4090 Standard Methods, 22nd ed., Method 5910 B as an approved
 4091 alternative method for ultraviolet absorption at 254 nm in appendix
 4092 A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg.
 4093 37463). USEPA added Standard Methods Online, Method 5910
 4094 B-11 as an approved alternative method for ultraviolet absorbtion
 4095 at 254 nm in appendix A to subpart C of 40 CFR 141 on June 19,
 4096 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd
 4097 ed., Methods 5910 B is the same version as Standard Methods
 4098 Online, Method 5910 B-11, the Board has not listed the Standard
 4099 Methods Online versions separately.

- 4100
- 4101 5) pH. All methods allowed in Section 611.611(a)(17) for measuring pH.
 4102
- 4103 6) Magnesium. All methods allowed in Section 611.611(a) for measuring
 4104 magnesium.
 4105

4106 BOARD NOTE: Derived from 40 CFR 141.131 and appendix A to 40 CFR 141 (2013).
 4107

(Source: Amended at 39 Ill. Reg. _____, effective _____)

SUBPART L: MICROBIOLOGICAL MONITORING
AND ANALYTICAL REQUIREMENTS

Section 611.526 Analytical Methodology

- a) The standard sample volume required for total coliform analysis, regardless of analytical method used, is 100 mL.
- b) Suppliers need only determine the presence or absence of total coliforms; a determination of total coliform density is not required.
- c) Suppliers must conduct total coliform analyses in accordance with one of the following analytical methods, incorporated by reference in Section 611.102, or in accordance with an alternative method approved by the Agency pursuant to Section 611.480 (the time from sample collection to initiation of analysis may not exceed 30 hours, and the supplier is encouraged but not required to hold samples below 10° C during transit):
 - 1) Total Coliform Fermentation Technique, as set forth in Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Methods 9221 A and B, as follows:
 - A) Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth if the supplier conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested and this comparison demonstrates that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than 10 percent;
 - B) If inverted tubes are used to detect gas production, the media should cover these tubes at least one-half to two-thirds after the sample is added; and
 - C) No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes.
 - 2) Total Coliform Membrane Filter Technique, as set forth in Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Methods 9222 A, B, and C.
 - 3) Presence-Absence (P-A) Coliform Test, as set forth in: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9221 D, as follows:

- 4151 A) No requirement exists to run the completed phase on 10 percent of
 4152 all total coliform-positive confirmed tubes; and
 4153
 4154 B) Six-times formulation strength may be used if the medium is filter-
 4155 sterilized rather than autoclaved.
 4156

- 4157 4) ONPG-MUG test: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed.,
 4158 Method 9223. (The ONPG-MUG test is also known as the Autoanalysis
 4159 Colilert® Test System.)
 4160
 4161 5) Colisure™ Test (Autoanalysis-Colilert® Test System). (The Colisure™
 4162 Test may be read after an incubation time of 24 hours.)
 4163

4164 BOARD NOTE: USEPA included the P-A Coliform and Colisure™ Tests
 4165 for testing finished water under the coliform rule, but did not include them
 4166 for the purposes of the surface water treatment rule, under Section
 4167 611.531, for which quantitation of total coliforms is necessary. For these
 4168 reasons, USEPA included Standard Methods, Method 9221 C for the
 4169 surface water treatment rule, but did not include it for the purposes of the
 4170 total coliform rule, under this Section.
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- 4172 6) E*Colite® Test (Charm Sciences, Inc.).
 4173
 4174 7) m-ColiBlue24® Test (Hatch Company).
 4175
 4176 8) ReadyCult® 2000.
 4177
 4178 9) Chromocult® Method.
 4179
 4180 10) Colitag® Test.
 4181
 4182 11) Modified Colitag™ Method.
 4183
 4184 12) Tecta EC/TC P-A Test.
 4185

4186 BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 9221 A, B,
 4187 and D; 9222 A, B, and C; and 9223 as approved alternative methods in appendix A
 4188 to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA
 4189 added Modified Colitag™ Method as an approved alternative method in appendix
 4190 A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908).
 4191 USEPA added Standard Methods, 22nd ed., Methods 9221 A and B and 9223 B as
 4192 approved alternative methods for total coliforms in appendix A to subpart C of 40
 4193 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard

4194 Methods Online, Methods 9221 A and B-06 and 9223 B-04 as approved alternative
 4195 methods for total coliforms in appendix A to subpart C of 40 CFR 141 on June 19,
 4196 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Methods 9221
 4197 A and B and 9223 B are the same version as Standard Methods Online, Methods
 4198 9221 A and B-06 and 9223 B-04, the Board has not listed the Standard Methods
 4199 Online versions separately. USEPA added Tecta EC/TC P-A Test as an approved
 4200 alternative method for total coliforms in appendix A to subpart C of 40 CFR 141
 4201 on June 19, 2014 (at 79 Fed. Reg. 35081).
 4202

- 4203 d) This subsection corresponds with 40 CFR 141.21(f)(4), which USEPA has
 4204 marked "reserved." This statement maintains structural consistency with the
 4205 federal regulations.
 4206
- 4207 e) Suppliers must conduct fecal coliform analysis in accordance with the following
 4208 procedure:
 4209
- 4210 1) When the MTF Technique or P-A Coliform Test is used to test for total
 4211 coliforms, shake the lactose-positive presumptive tube or P-A vigorously
 4212 and transfer the growth with a sterile 3-mm loop or sterile applicator stick
 4213 into brilliant green lactose bile broth and EC medium, defined below, to
 4214 determine the presence of total and fecal coliforms, respectively.
 4215
 - 4216 2) For approved methods that use a membrane filter, transfer the total
 4217 coliform-positive culture by one of the following methods: remove the
 4218 membrane containing the total coliform colonies from the substrate with
 4219 sterile forceps and carefully curl and insert the membrane into a tube of
 4220 EC medium; (the laboratory may first remove a small portion of selected
 4221 colonies for verification); swab the entire membrane filter surface with a
 4222 sterile cotton swab and transfer the inoculum to EC medium (do not leave
 4223 the cotton swab in the EC medium); or inoculate individual total coliform-
 4224 positive colonies into EC medium. Gently shake the inoculated tubes of
 4225 EC medium to insure adequate mixing and incubate in a waterbath at 44.5
 4226 $\pm 0.2^\circ$ C for 24 ± 2 hours. Gas production of any amount in the inner
 4227 fermentation tube of the EC medium indicates a positive fecal coliform
 4228 test.
 4229
 - 4230 3) EC medium is described in Standard Methods, 18th ed., 19th ed., 20th, or
 4231 22nd ed., Method 9221E.
 4232
 - 4233 4) Suppliers need only determine the presence or absence of fecal coliforms;
 4234 a determination of fecal coliform density is not required.
 4235

BOARD NOTE: USEPA added Standard Methods, 22nd ed., Method 9221 E as an approved alternative method for fecal coliforms in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 9221 E-06 as an approved alternative method for fecal coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9221 E is the same version as Standard Methods Online, Method 9221 E-06, the Board has not listed the Standard Methods Online version separately.

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

- 1) EC medium supplemented with 50 µg/ℓ of MUG (final concentration). EC medium is as described in subsection (e) of this Section. MUG may be added to EC medium before autoclaving. EC medium supplemented with 50 µg/ℓ MUG is commercially available. At least 10 mL of EC medium supplemented with MUG must be used. The inner inverted fermentation tube may be omitted. The procedure for transferring a total coliform-positive culture to EC medium supplemented with MUG is as in subsection (e) of this Section for transferring a total coliform-positive culture to EC medium. Observe fluorescence with an ultraviolet light (366 nm) in the dark after incubating tube at 44.5 ±2° C for 24 ±2 hours; or
- 2) Nutrient agar supplemented with 100 µg/ℓ MUG (final concentration), as described in Standard Methods, 19th ed., 20th, or 22nd ed., Method 9222 G. This test is used to determine if a total coliform-positive sample, as determined by the MF technique, contains E. coli. Alternatively, Standard Methods, 18th ed., Method 9221 B may be used if the membrane filter containing a total coliform-positive colony or colonies is transferred to nutrient agar, as described in Method 9221 B (paragraph 3), supplemented with 100 µg/ℓ MUG. If Method 9221 B is used, incubate the agar plate at 35° Celsius for four hours, then observe the colony or colonies under ultraviolet light (366-nm) in the dark for fluorescence. If fluorescence is visible, E. coli are present.
- 3) Minimal Medium ONPG-MUG (MMO-MUG) Test, as set forth in Appendix D of this Part. (The Autoanalysis-Colilert® Test System (Colisure™ Test) is a MMO-MUG test.) If the MMO-MUG test is total coliform positive after a 24-hour incubation, test the medium for fluorescence with a 366-nm ultraviolet light (preferably with a six-watt lamp) in the dark. If fluorescence is observed, the sample is E. coli-positive. If fluorescence is questionable (cannot be definitively read) after 24 hours incubation, incubate the culture for an additional four hours (but

4279 not to exceed 28 hours total), and again test the medium for fluorescence.
 4280 The MMO-MUG test with hepes buffer is the only approved formulation
 4281 for the detection of E. coli.

- 4282
- 4283 4) The Colisure™ Test (Autoanalysis-Colilert® Test-System).
- 4284
- 4285 5) The membrane filter method with MI agar.
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- 4287 6) The E*Colite® Test.
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- 4289 7) The m-ColiBlue24® Test.
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- 4291 8) ReadyCult® 2000.
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- 4293 9) Chromocult® Method.
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- 4295 10) Colitag® Test.
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- 4297 11) ONPG-MUG Test: Standard Methods, 20th, 21st, or 22nd ed., Method 9223
- 4298 B.
- 4299
- 4300 12) Modified Colitag™ Method.
- 4301
- 4302 13) Tecta EC/TC P-A Test.
- 4303

4304 BOARD NOTE: USEPA added Standard Methods, 20th or 21st ed., Method 9223
 4305 B and Standard Methods Online, Method 9223 B-97 as approved alternative
 4306 methods for E. coli in appendix A to subpart C of 40 CFR 141 on November 10,
 4307 2009 (at 74 Fed. Reg. 57908). Because Standard Methods, 21st ed., Method 9223
 4308 B is the same version as Standard Methods Online, Method 9223 B-97, the Board
 4309 has not listed the Standard Methods Online version separately. USEPA added
 4310 Standard Methods, 22nd ed., Method 9223 B as an approved alternative method for
 4311 E. coli in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed.
 4312 Reg. 32558). USEPA added Standard Methods Online, Method 9223 B-04 as an
 4313 approved alternative method for E. coli in appendix A to subpart C of 40 CFR 141
 4314 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed.,
 4315 Method 9223 B is the same version as Standard Methods Online, Method 9223 B-
 4316 04, the Board has not listed the Standard Methods Online versions separately.
 4317 USEPA added Tecta EC/TC P-A Test as an approved alternative method for total
 4318 coliforms in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed.
 4319 Reg. 35081).

4320

4321 g) As an option to the method set forth in subsection (f)(3) of this Section, a supplier

4322 with a total coliform-positive, MUG-negative, MMO-MUG test may further
4323 analyze the culture for the presence of E. coli by transferring a 0.1 mL, 28-hour
4324 MMO-MUG culture to EC medium + MUG with a pipet. The formulation and
4325 incubation conditions of the EC medium + MUG, and observation of the results,
4326 are described in subsection (f)(1) of this Section.
4327

- 4328 h) This subsection corresponds with 40 CFR 141.21(f)(8), a central listing of all
4329 documents incorporated by reference into the federal microbiological analytical
4330 methods. The corresponding Illinois incorporations by reference are located at
4331 Section 611.102. This statement maintains structural parity with USEPA
4332 regulations.
4333

4334 BOARD NOTE: Derived from 40 CFR 141.21(f) and appendix A to 40 CFR 141
4335 (2014)(2013).

4336 (Source: Amended at 39 Ill. Reg. _____, effective _____)
4337
4338

4339 **Section 611.531 Analytical Requirements**
4340

4341 The analytical methods specified in this Section, or alternative methods approved by the Agency
4342 pursuant to Section 611.480, must be used to demonstrate compliance with the requirements of
4343 only 611.Subpart B; they do not apply to analyses performed for the purposes of Sections
4344 611.521 through 611.527 of this Subpart L. Measurements for pH, temperature, turbidity, and
4345 RDCs must be conducted under the supervision of a certified operator. Measurements for total
4346 coliforms, fecal coliforms and HPC must be conducted by a certified laboratory in one of the
4347 categories listed in Section 611.490(a). The following procedures must be performed by the
4348 following methods, incorporated by reference in Section 611.102:
4349

- 4350 a) A supplier must conduct analyses as follows:
4351
 - 4352 1) The supplier must conduct analyses for pH in accordance with one of the
4353 methods listed at Section 611.611; and
4354
 - 4355 2) The supplier must conduct analyses for total coliforms, fecal coliforms,
4356 heterotrophic bacteria, and turbidity in accordance with one of the
4357 following methods, and by using analytical test procedures contained in
4358 USEPA Technical Notes, incorporated by reference in Section 611.102, as
4359 follows:
4360
 - 4361 A) Total Coliforms.

4362
4363 BOARD NOTE: The time from sample collection to initiation of
4364 analysis for source (raw) water samples required by Sections

611.521 and 611.532 and Subpart B of this Part only must not exceed eight hours. The supplier is encouraged but not required to hold samples below 10° C during transit.

- i) Total coliform fermentation technique: Standard Methods, 18th, 19th, 20th, 21st or 22nd ed., Method 9221 A, B, and C.

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

- ii) Total coliform membrane filter technique: Standard Methods, 18th, 19th, 20th, 21st or 22nd ed., Method 9222 A, B, and C.

- iii) ONPG-MUG test (also known as the ~~Autoanalysis Colilert® Test System~~): Standard Methods, 18th, 19th, 20th, 21st or 22nd ed., Method 9223.

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

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 9221 A, B, and C; 9222 A, B, and C; and 9223 as approved alternative methods for total coliform in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added standard Methods, 22nd ed., Methods 8221 A, B, and C and 9223 B as approved alternative methods for total

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4408 coliform in appendix A to subpart C of 40 CFR 141 on June 21,
 4409 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods
 4410 Online, Methods 9221 A, B, and C-06 and 9223 B-04 as approved
 4411 alternative methods for total coliform in appendix A to subpart C
 4412 of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because
 4413 Standard Methods, 22nd ed., Methods 9221 A, B, and C and 9223
 4414 B are the same versions as Standard Methods Online, Methods
 4415 9221 A, B, and C-06 and 9223 B-04, the Board has not listed the
 4416 Standard Methods Online versions separately.

4417
 4418 B) Fecal Coliforms.

4419
 4420 BOARD NOTE: The time from sample collection to initiation of
 4421 analysis for source (raw) water samples required by Sections
 4422 611.521 and 611.532 and Subpart B of this Part only must not
 4423 exceed eight hours. The supplier is encouraged but not required to
 4424 hold samples below 10° C during transit.

4425
 4426 i) Fecal coliform procedure: Standard Methods, 18th, 19th,
 4427 20th, 21st or 22nd ed., Method 9221 E.

4428
 4429 BOARD NOTE: A-1 broth may be held up to seven days in
 4430 a tightly closed screwcap tube at 4° C (39° F).

4431
 4432 ii) Fecal Coliform Membrane Filter Procedure: Standard
 4433 Methods, 18th, 19th, 20th, 21st or 22nd ed., Method 9222 D.

4434
 4435 BOARD NOTE: USEPA added Standard Methods, 21st ed.,
 4436 Methods 9221 E and 9222 D as approved alternative methods for
 4437 fecal coliforms in appendix A to subpart C of 40 CFR 141 on June
 4438 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard
 4439 Methods, 22nd ed., Methods 9221 E and 9222 D as approved
 4440 alternative methods for fecal coliforms in appendix A to subpart C
 4441 of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA
 4442 added Standard Methods Online, Methods 9221 E-06 and 9222 D-
 4443 06 as approved alternative methods for fecal coliforms in appendix
 4444 A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg.
 4445 35081). Because Standard Methods, 22nd ed., Methods 9221 E and
 4446 9222 D are the same versions as Standard Methods Online,
 4447 Methods 9222 E-06 and 9222 D-06, the Board has not listed the
 4448 Standard Methods Online versions separately.

4449
 4450 C) Heterotrophic bacteria.

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- i) Pour plate method: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 9215 B.

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

- ii) SimPlate method.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 9215 B as an approved alternative method for heterotrophic bacteria in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Methods 9215 B as approved alternative method for heterotrophic bacteria in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods Online, Method 9215 B-04 as an approved alternative method for heterotrophic bacteria in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9215 B is the same version as Standard Methods Online, Method 9215 B-04, the Board has not listed the Standard Methods Online versions separately.

- D) Turbidity.

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

- i) Nephelometric method: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 2130 B.
- ii) Nephelometric method: USEPA Environmental Inorganic Methods, Method 180.1 (rev.2.0).
- iii) GLI Method 2.
- iv) Hach FilterTrak Method 10133.
- v) Laser nephelometry (on-line): Mitchell Method M5271.

4494 vi) LED nephelometry (on-line): Mitchell Method M5331 or
 4495 AMI Turbiwell Method.

4496
 4497 vii) LED nephelometry (portable): Orion Method AQ4500.
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4499 BOARD NOTE: USEPA added Standard Methods, 21st ed.,
 4500 Method 9130 B as an approved alternative method for turbidity in
 4501 appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73
 4502 Fed. Reg. 31616). USEPA added Mitchell Method M5271 and
 4503 Orion Method AQ4500 as approved alternative methods for
 4504 turbidity in appendix A to subpart C of 40 CFR 141 on August 3,
 4505 2009 (at 74 Fed. Reg. 38348). USEPA added AMI Turbiwell
 4506 Method as an approved alternative method for turbidity in
 4507 appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at
 4508 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed.,
 4509 Method 2130 B as an approved alternative method for turbidity in
 4510 appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78
 4511 Fed. Reg. 37463).
 4512

4513 E) Temperature: Standard Methods, 18th, 19th, 20th, or 21st ed.,
 4514 Method 2550.
 4515

4516 b) A supplier must measure residual disinfectant concentrations with one of the
 4517 following analytical methods:

4518 1) Free chlorine.

4519 A) Amperometric Titration.

4520 i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 4521 4500-CI D.
 4522

4523 ii) ASTM Method D1253-03 or D1253-08.
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4525 B) DPD Ferrous Titrimetric: Standard Methods, 18th, 19th, 20th, 21st,
 4526 or 22nd ed., Method 4500-CI F.
 4527

4528 C) ~~DPD Colimetric: Standard Methods, 18th, 19th, 20th, 21st or 22nd~~
 4529 ~~ed., Method 4500-CI G.~~
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4531 i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 4532 4500-CI G; or
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- 4537 ii) Hach Method 10260.
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- 4539 D) Syringaldazine (FACTS): Standard Methods, 18th, 19th, 20th, 21st,
- 4540 or 22nd ed., Method 4500-C1 H.
- 4541
- 4542 E) On-line chlorine analyzer: USEPA OGWDW Methods, Method
- 4543 334.0.
- 4544
- 4545 F) Amperometric sensor: Palintest ChloroSense.
- 4546

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4500-C1 D, F, G, and H; Method 4500-C1O₂ C and E as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D1253-08, USEPA OGWDW Methods, Method 334.0, and Palintest ChloroSense as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 4500-C1 B, F, G and H as approved alternative methods for free chlorine in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Hach Method 10260 as an approved alternative method for total chlorine in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

2) Total chlorine.

- 4563 A) Amperometric Titration:
 - 4565 i) Standard Methods, 18th, 19th, 20th, 21st or 22nd ed., Method
 - 4566 4500-C1 D.
 - 4567
 - 4568 ii) ASTM Method D1253-03 or D1253-08.
 - 4569
- 4570 B) Amperometric Titration (low level measurement): Standard
- 4571 Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-C1 E.
- 4572
- 4573 C) DPD Ferrous Titrimetric: Standard Methods, 18th, 19th, 20th, 21st,
- 4574 or 22nd ed., Method 4500-C1 F.
- 4575
- 4576 D) DPD Colimetric: ~~Standard Methods, 18th, 19th, 20th, 21st or 22nd~~
- 4577 ~~ed., Method 4500-C1 G.~~
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- 4579 i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed.,

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Method 4500-Cl G; or

ii) Hach Method 10260.

- E) Iodometric Electrode: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-Cl I.
- F) On-line chlorine analyzer: USEPA OGWDW Methods, Method 334.0.
- G) Amperometric sensor: Palintest ChloroSense.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 4500-Cl D, E, F, G, and I as approved alternative methods for total chlorine in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D1253-08, USEPA OGWDW Methods, Method 334.0, and Palintest ChloroSense as approved alternative methods for total chlorine in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods, 22nd ed., Methods 4500-Cl D, E, F, G and I as approved alternative methods for total chlorine in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Hach Method 10260 as an approved alternative method for total chlorine in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).

3) Chlorine dioxide.

- A) ~~Amperometric Titration: Standard Methods, 18th, 19th, 20th, 21st or 22nd ed., Method 4500-ClO₂ C or E.~~
 - i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-ClO₂ C or E; or
 - ii) ChlordioX Plus Test.
- B) DPD Method: Standard Methods, 18th, 19th, or 20th ed., Method 4500-ClO₂ D.
- C) Spectrophotometric: USEPA OGWDW Methods, Method 327.0 (rev. 1.1).

4622 BOARD NOTE: USEPA added Standard Methods, 21st ed., Method
4623 4500-CIO₂ C, D, and E and Method 4500-O₃ B as approved alternative
4624 methods for chlorine dioxide in appendix A to subpart C of 40 CFR 141,
4625 added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard
4626 Methods, 22nd ed., Methods 4500-CIO₂ C and E as approved alternative
4627 methods for chlorine dioxide in appendix A to subpart C of 40 CFR 141
4628 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Hach Method
4629 10260 as an approved alternative method for free chlorine and total
4630 chlorine and ChlordioX Plus Test as an approved alternative method for
4631 chlorine dioxide in appendix A to subpart C of 40 CFR 141 on June 19,
4632 2014 (at 79 Fed. Reg. 35081).
4633

- 4634 4) Ozone: Indigo Method: Standard Methods, 18th, 19th, 20th, 21st, or 22nd
4635 ed, Method 4500-O₃ B.
4636

4637 BOARD NOTE: USEPA added Standard Methods, 21st ed., Method
4638 4500-O₃ B as an approved alternative method for ozone in appendix A to
4639 subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).
4640 USEPA added Standard Methods, 22nd ed., Method 4500-O₃ B as an
4641 approved alternative method for ozone in appendix A to subpart C of 40
4642 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).
4643

- 4644 5) Alternative test methods: The Agency may grant a SEP pursuant to
4645 Section 611.110 that allows a supplier to use alternative chlorine test
4646 methods as follows:
4647

4648 A) DPD colorimetric test kits: Residual disinfectant concentrations
4649 for free chlorine and combined chlorine may also be measured by
4650 using DPD colorimetric test kits.
4651

4652 B) Continuous monitoring for free and total chlorine: Free and total
4653 chlorine residuals may be measured continuously by adapting a
4654 specified chlorine residual method for use with a continuous
4655 monitoring instrument, provided the chemistry, accuracy, and
4656 precision remain the same. Instruments used for continuous
4657 monitoring must be calibrated with a grab sample measurement at
4658 least every five days or as otherwise provided by the Agency.
4659

4660 BOARD NOTE: Suppliers may use a five-tube test or a 10-tube
4661 test.
4662

4663 BOARD NOTE: Derived from 40 CFR 141.74(a) and appendix A to subpart C of 40
4664 CFR 141 (2014)(2009).
4665

(Source: Amended at 39 Ill. Reg. _____, effective _____)

SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS

Section 611.600 Applicability

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

- a) CWS suppliers.
- b) NTNCWS suppliers.
- c) Transient non-CWS suppliers to determine compliance with the nitrate and nitrite MCLs.
- d) Detection limits. The following are detection limits for purposes of this Subpart N (MCLs from Section 611.301 are set forth for information purposes only):

Contaminant	MCL (mg/ℓ, except asbestos)	Method	Detection Limit (mg/ℓ)
Antimony	0.006	Atomic absorption – furnace technique	0.003
		Atomic absorption – furnace technique (stabilized temperature)	0.0008 ⁵
		Inductively coupled plasma-mass spectrometry	0.0004
		Atomic absorption – gaseous hydride technique	0.001
Arsenic	0.010	Atomic absorption – furnace technique	0.001
		Atomic absorption – furnace technique (stabilized temperature)	0.00005 ⁶

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		Atomic absorption – gaseous hydride technique	0.001
		Inductively coupled plasma-mass spectrometry	0.0014 ⁷
Asbestos	7 MFL ¹	Transmission electron microscopy	0.01 MFL
Barium	2	Atomic absorption – furnace technique	0.002
		Atomic absorption – direct aspiration technique	0.1
		Inductively coupled plasma arc furnace	0.002
		Inductively coupled plasma	0.001
Beryllium	0.004	Atomic absorption – furnace technique	0.0002
		Atomic absorption – furnace technique (stabilized temperature)	0.00002 ⁵
		Inductively coupled plasma ²	0.0003
		Inductively coupled plasma-mass spectrometry	0.0003
Cadmium	0.005	Atomic absorption – furnace technique	0.0001
		Inductively coupled plasma	0.001
Chromium	0.1	Atomic absorption – furnace technique	0.001
		Inductively coupled plasma	0.007
		Inductively coupled plasma	0.001

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Cyanide	0.2	Distillation, spectrophotometric ³	0.02
		Automated distillation, spectrophotometric ³	0.005
		Distillation, selective electrode ³	0.05
		Distillation, amenable, spectrophotometric ⁴	0.02
		UV, distillation, spectrophotometric ⁸	0.0005
		Micro distillation, flow injection, spectrophotometric ³	0.0006
		Ligand exchange with amperometry ⁴	0.0005
Mercury	0.002	Manual cold vapor technique	0.0002
		Automated cold vapor technique	0.0002
Nickel	No MCL	Atomic absorption – furnace technique	0.001
		Atomic absorption – furnace technique (stabilized temperature)	0.0006 ⁵
		Inductively coupled plasma ²	0.005
		Inductively coupled plasma-mass spectrometry	0.0005
Nitrate (as N)	10	Manual cadmium reduction	0.01
		Automated hydrazine reduction	0.01

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		Automated cadmium reduction	0.05
		Ion-selective electrode	1
		Ion chromatography	0.01
		Capillary ion electrophoresis	0.076
Nitrite (as N)	1	Spectrophotometric	0.01
		Automated cadmium reduction	0.05
		Manual cadmium reduction	0.01
		Ion chromatography	0.004
		Capillary ion electrophoresis	0.103
Selenium	0.05	Atomic absorption – furnace technique	0.002
		Atomic absorption – gaseous hydride technique	0.002
Thallium	0.002	Atomic absorption – furnace technique	0.001
		Atomic absorption – furnace technique (stabilized temperature)	0.0007 ⁵
		Inductively coupled plasma-mass spectrometry	0.0003

Footnotes.

- ¹ "MFL" means millions of fibers per liter less than 10 µm.
- ² Using a 2x preconcentration step as noted in Method 200.7. Lower MDLs may be achieved when using a 4x preconcentration.
- ³ Screening method for total cyanides.
- ⁴ Measures "free" cyanides when distillation, digestion, or ligand exchange is omitted.
- ⁵ Lower MDLs are reported using stabilized temperature graphite furnace

atomic absorption.

- 6 The MDL reported for USEPA Method 200.9 (atomic absorption-platform furnace (stabilized temperature)) was determined using a 2x concentration step during sample digestion. The MDL determined for samples analyzed using direct analyses (i.e., no sample digestion) will be higher. Using multiple depositions, USEPA Method 200.9 is capable of obtaining an MDL of 0.0001 mg/ℓ.
- 7 Using selective ion monitoring, USEPA Method 200.8 (ICP-MS) is capable of obtaining an MDL of 0.0001 mg/ℓ.
- 8 Measures total cyanides when UV-digester is used, and "free" cyanides when UV-digester is bypassed.

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 4687 BOARD NOTE: Subsections (a) through (c) of this Section are derived from 40 CFR 141.23
 4688 preamble (2014)(2012), and subsection (d) of this Section is derived from 40 CFR 141.23
 4689 (a)(4)(i) and appendix A to subpart C of 40 CFR 141 (2014)(2012). See the Board Note at
 4690 Section 611.301(b) relating to the MCL for nickel.

4691 (Source: Amended at 39 Ill. Reg. _____, effective _____)

4692
 4693
 4694 **Section 611.611 Inorganic Analysis**

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 4696 Analytical methods are from documents incorporated by reference in Section 611.102. These are
 4697 mostly referenced by a short name defined by Section 611.102(a). Other abbreviations are
 4698 defined in Section 611.101.

- 4699 a) Analysis for the following contaminants must be conducted using the following
 4700 methods or an alternative method approved pursuant to Section 611.480. Criteria
 4701 for analyzing arsenic, chromium, copper, lead, nickel, selenium, sodium, and
 4702 thallium with digestion or directly without digestion, and other analytical
 4703 procedures, are contained in USEPA Technical Notes, incorporated by reference
 4704 in Section 611.102.

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 4707 BOARD NOTE: Because MDLs reported in USEPA Environmental Metals
 4708 Methods 200.7 and 200.9 were determined using a 2x preconcentration step
 4709 during sample digestion, MDLs determined when samples are analyzed by direct
 4710 analysis (i.e., no sample digestion) will be higher. For direct analysis of cadmium
 4711 and arsenic by USEPA Environmental Metals Method 200.7, and arsenic by
 4712 Standard Methods, Method 3120 B, sample preconcentration using pneumatic
 4713 nebulization may be required to achieve lower detection limits. Preconcentration
 4714 may also be required for direct analysis of antimony, lead, and thallium by
 4715 USEPA Environmental Metals Method 200.9; antimony and lead by Standard

Methods, 18th, 19th, or 21st ed., Method 3113 B; and lead by ASTM Method D3559-96 D or D3559-03 D unless multiple in-furnace depositions are made.

- 1) Alkalinity.
 - A) Titrimetric.
 - i) ASTM Method D1067-92 B, D1067-02 B, D1067-06 B, or D1067-11 B; or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 2320 B; ~~or~~
 - iii) ~~Standard Methods Online, Method 3113 B-04.~~
 - B) Electrometric titration: USGS Methods, Method I-1030-85.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 2320 B as an approved alternative method for alkalinity in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ~~ASTM Method D1067-06 B and Standard Methods Online, Method 3113 B-04 as approved alternative methods for alkalinity in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014).~~ USEPA added Standard Methods, 22nd ed., Method 2320 B and ASTM Method D1067-11 B as approved alternative methods for alkalinity in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- 2) Antimony.
 - A) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
 - B) Atomic absorption, hydride technique: ASTM Method D3697-92, D3697-02, or D3697-07.
 - C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
 - D) Atomic absorption, furnace technique:
 - i) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or

4760 ii) Standard Methods Online, Method 3113 B-04.
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4762 E) Axially viewed inductively coupled plasma-atomic emission
 4763 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
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4765 BOARD NOTE: USEPA added Standard Methods, 21st ed., Method
 4766 3113B and USEPA NERL Method 200.5 as approved alternative methods
 4767 for antimony in appendix A to subpart C of 40 CFR 141 on June 3, 2008
 4768 (at 73 Fed. Reg. 31616). USEPA added ASTM Method D3697-07 as an
 4769 approved alternative method for antimony in appendix A to subpart C of
 4770 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908. USEPA
 4771 added Standard Methods Online, Method 3113 B-04 as an approved
 4772 alternative method for antimony in appendix A to subpart C of 40 CFR
 4773 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard
 4774 Methods, 22nd ed., Method 3113 B as an approved alternative method for
 4775 antimony in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at
 4776 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method
 4777 3113 B-10 as an approved alternative method for antimony in appendix A
 4778 to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).
 4779 Because Standard Methods, 22nd ed., Method 3113 B is the same version
 4780 as Standard Methods Online, Method 9223 B-10, the Board has not listed
 4781 the Standard Methods Online versions separately.
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4783 3) Arsenic.
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4785 BOARD NOTE: If ultrasonic nebulization is used in the determination of
 4786 arsenic by Method 200.8, the arsenic must be in the pentavalent state to
 4787 provide uniform signal response. For direct analysis of arsenic with
 4788 Method 200.8 using ultrasonic nebulization, samples and standards must
 4789 contain one mg/ℓ of sodium hypochlorite.
 4790

4791 A) Inductively coupled plasma-mass spectrometry: USEPA
 4792 Environmental Metals Methods, Method 200.8 (rev. 5.3).
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4794 B) Atomic absorption, platform furnace technique: USEPA
 4795 Environmental Metals Methods, Method 200.9 (rev. 2.2).
 4796

4797 C) Atomic absorption, furnace technique.
 4798

4799 i) ASTM Method D2972-97 C, D2972-03 C, or D2972-08 C;
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4801 ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113
 4802 B; or

- 4803
 4804 iii) Standard Methods Online, Method 3113 B-04.
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 4806 D) Atomic absorption, hydride technique.
 4807
 4808 i) ASTM Method D2972-97 B, D2972-03 C, or D2972-08 B;
 4809
 4810 ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3114
 4811 B; or
 4812
 4813 iii) Standard Methods Online, Method 3114 B-04.
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 4815 E) Axially viewed inductively coupled plasma-atomic emission
 4816 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
 4817

4818 BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods
 4819 3113 B and 3114 B and USEPA NERL Method 200.5 as approved
 4820 alternative methods for arsenic in appendix A to subpart C of 40 CFR 141
 4821 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Methods
 4822 D2972-08 B and C as approved alternative methods for arsenic in
 4823 appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74
 4824 Fed. Reg. 57908). USEPA added Standard Methods Online, Method 3113
 4825 B-04 and Method 3114 B-09 as approved alternative methods for arsenic
 4826 in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed.
 4827 Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3113 B
 4828 and 3114 B as approved alternative methods for arsenic in appendix A to
 4829 subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).
 4830 Because Standard Methods, 22nd ed., Method 3114 B is the same version
 4831 as Standard Methods Online 3114 B-09, the Board has not listed the
 4832 Standard Methods Online version separately. USEPA added Standard
 4833 Methods Online, Method 3113 B-10 as an approved alternative method for
 4834 arsenic in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79
 4835 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is
 4836 the same version as Standard Methods Online, Method 9223 B-10, the
 4837 Board has not listed the Standard Methods Online versions separately.
 4838

- 4839 4) Asbestos: Transmission electron microscopy: USEPA Asbestos Method-
 4840 100.1 or USEPA Asbestos Method 100.2.
 4841
 4842 5) Barium.
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 4844 A) Inductively coupled plasma.
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- 4846 i) USEPA Environmental Metals Methods, Method 200.7
 4847 (rev. 4.4); or
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 4849 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 4850 3120 B.
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 4852 B) Inductively coupled plasma-mass spectrometry: USEPA
 4853 Environmental Metals Methods, Method 200.8 (rev. 5.3).
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 4855 C) Atomic absorption, direct aspiration technique: Standard Methods,
 4856 18th, 19th, 21st, or 22nd ed., Method 3111 D.
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 4858 D) Atomic absorption, furnace technique:
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 4860 i) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113
 4861 B; or
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 4863 ii) Standard Methods Online, Method 3113 B-04.
 4864
 4865 E) Axially viewed inductively coupled plasma-atomic emission
 4866 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
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4868 BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods
 4869 3111 D, 3113 B, and 3120 B and USEPA NERL Method 200.5 as
 4870 approved alternative methods for barium in appendix A to subpart C of 40
 4871 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added
 4872 Standard Methods Online, Method 3113 B-04 as an approved alternative
 4873 method for barium in appendix A to subpart C of 40 CFR 141 on June 24,
 4874 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed.,
 4875 Methods 3111 D, 3113 B, and 3120 B as approved alternative methods for
 4876 barium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78
 4877 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113
 4878 B-10 as an approved alternative method for barium in appendix A to
 4879 subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).
 4880 Because Standard Methods, 22nd ed., Method 3113 B is the same version
 4881 as Standard Methods Online, Method 9223 B-10, the Board has not listed
 4882 the Standard Methods Online versions separately.
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4884 6) Beryllium.

- 4885 A) Inductively coupled plasma.
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- 4888 i) USEPA Environmental Metals Methods, Method 200.7
 4889 (rev. 4.4); or
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 4891 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 4892 3120 B.
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 4894 B) Inductively coupled plasma-mass spectrometry: USEPA
 4895 Environmental Metals Methods, Method 200.8 (rev. 5.3).
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 4897 C) Atomic absorption, platform furnace technique: USEPA
 4898 Environmental Metals Methods, Method 200.9 (rev. 2.2).
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 4900 D) Atomic absorption, furnace technique.
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 4902 i) ASTM Method D3645-97 B, D3645-03 B, or D3645-08 B;
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 4904 ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113
 4905 B; or
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 4907 iii) Standard Methods Online, Method 3113 B-04.
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 4909 E) Axially viewed inductively coupled plasma-atomic emission
 4910 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
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4912 BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods
 4913 3113 B and 3120 B and USEPA NERL Method 200.5 as approved
 4914 alternative methods for beryllium in appendix A to subpart C of 40 CFR
 4915 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM
 4916 Method D3645-08 B as an approved alternative method for beryllium in
 4917 appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74
 4918 Fed. Reg. 57908). USEPA added Standard Methods Online, Method 3113
 4919 B-04 as an approved alternative method for beryllium in appendix A to
 4920 subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014).
 4921 USEPA added Standard Methods, 22nd ed., Methods 3113 B and 3120 B
 4922 as approved alternative methods for beryllium in appendix A to subpart C
 4923 of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added
 4924 Standard Methods Online, Method 3113 B-10 as an approved alternative
 4925 method for beryllium in appendix A to subpart C of 40 CFR 141 on June
 4926 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed.,
 4927 Method 3113 B is the same version as Standard Methods Online, Method
 4928 9223 B-10, the Board has not listed the Standard Methods Online versions
 4929 separately.
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- 4931 7) Cadmium.
- 4932
- 4933 A) Inductively coupled plasma arc furnace: USEPA Environmental
- 4934 Metals Methods, Method 200.7 (rev. 4.4).
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- 4936 B) Inductively coupled plasma-mass spectrometry: USEPA
- 4937 Environmental Metals Methods, Method 200.8 (rev. 5.3).
- 4938
- 4939 C) Atomic absorption, platform furnace technique: USEPA
- 4940 Environmental Metals Methods, Method 200.9 (rev. 2.2).
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- 4942 D) Atomic absorption, furnace technique:
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- 4944 i) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113
- 4945 B; or
- 4946
- 4947 ii) Standard Methods Online, Method 3113 B-04.
- 4948
- 4949 E) Axially viewed inductively coupled plasma-atomic emission
- 4950 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
- 4951
- 4952 BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 3113
- 4953 B and USEPA NERL Method 200.5 as approved alternative methods for
- 4954 cadmium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at
- 4955 73 Fed. Reg. 31616). USEPA added Standard Methods Online, Method
- 4956 3113 B-04 as an approved alternative method for cadmium in appendix A
- 4957 to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014).
- 4958 USEPA added Standard Methods, 22nd ed., Method 3113 B as an approved
- 4959 alternative method for cadmium in appendix A to subpart C of 40 CFR
- 4960 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard
- 4961 Methods Online, Method 3113 B-10 as an approved alternative method for
- 4962 cadmium in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at
- 4963 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113
- 4964 B is the same version as Standard Methods Online, Method 9223 B-10, the
- 4965 Board has not listed the Standard Methods Online versions separately.
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- 4967 8) Calcium.
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- 4969 A) EDTA titrimetric.
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- 4971 i) ASTM Method D511-93 A, D511-03 A, or D511-09 A; or
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- ii) Standard Methods, 18th or 19th ed., Method 3500-Ca D or Standard Methods, 20th, 21st, or 22nd ed., Method 3500-Ca B.
 - B) Atomic absorption, direct aspiration.
 - i) ASTM Method D511-93 B, D511-03 B, or D511-09 B; or
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3111 B.
 - C) Inductively coupled plasma.
 - i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
 - D) Ion chromatography: ASTM Method D6919-03 or D6919-09.
 - E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.
- BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3111 B, 3120 B, and 3500-Ca B and USEPA NERL Method 200.5 as approved alternative methods for calcium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Methods D511-09 A and B as approved alternative methods for calcium in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added ASTM Method D6919-09 as an approved alternative method for calcium in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3111 B, 3120 B, and 3500-Ca B as approved alternative methods for calcium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).
- 9) Chromium.
 - A) Inductively coupled plasma.
 - i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or

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- ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
 - B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
 - C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
 - D) Atomic absorption, furnace technique:
 - i) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - ii) Standard Methods Online, Method 3113 B-04.
 - E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.
- BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3113 B and 3120 B and USEPA NERL Method 200.5 as approved alternative methods for chromium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for chromium in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3113 B and 3120 B as approved alternative methods for chromium in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for chromium in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.
- 10) Copper.
 - A) Atomic absorption, furnace technique.
 - i) ASTM Method D1688-95 C, D1688-02 C, or D1688-07 C;

- 5058 ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113
- 5059 B; or
- 5060
- 5061 iii) Standard Methods Online, Method 3113 B-04.
- 5062
- 5063 B) Atomic absorption, direct aspiration.
- 5064
- 5065 i) ASTM Method D1688-95 A, D1688-02 A, or D1688-07 A;
- 5066 or
- 5067
- 5068 ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3111
- 5069 B.
- 5070
- 5071 C) Inductively coupled plasma.
- 5072
- 5073 i) USEPA Environmental Metals Methods, Method 200.7
- 5074 (rev. 4.4); or
- 5075
- 5076 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
- 5077 3120 B.
- 5078
- 5079 D) Inductively coupled plasma-mass spectrometry: USEPA
- 5080 Environmental Metals Methods, Method 200.8 (rev. 5.3).
- 5081
- 5082 E) Atomic absorption, platform furnace technique: USEPA
- 5083 Environmental Metals Methods, Method 200.9 (rev. 2.2).
- 5084
- 5085 F) Axially viewed inductively coupled plasma-atomic emission
- 5086 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
- 5087

5088 BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods

5089 3111 B, 3113 B, and 3120 B and USEPA NERL Method 200.5 as an

5090 approved alternative method for copper in appendix A to subpart C of 40

5091 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM

5092 Methods D1688-07 A and C as approved alternative methods for copper in

5093 appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74

5094 Fed. Reg. 57908). USEPA added Standard Methods Online, Method 3113

5095 B-04 as an approved alternative method for copper in appendix A to

5096 subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014).

5097 USEPA added Standard Methods, 22nd ed., Methods 3111 B, 3113 B, and

5098 3120 B as approved alternative methods for copper in appendix A to

5099 subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

5100 USEPA added Standard Methods Online, Method 3113 B-10 as an

5101 approved alternative method for copper in appendix A to subpart C of 40
 5102 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard
 5103 Methods, 22nd ed., Method 3113 B is the same version as Standard
 5104 Methods Online, Method 9223 B-10, the Board has not listed the Standard
 5105 Methods Online versions separately.

5106
 5107 11) Conductivity; Conductance.

5108
 5109 A) ASTM Method D1125-95(1999) A; or

5110
 5111 B) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 2510
 5112 B.

5113
 5114 BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 2510
 5115 B as an approved alternative method for conductivity in appendix A to
 5116 subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616).
 5117 USEPA added Standard Methods, 22nd ed., Method 2510 B as an approved
 5118 alternative method for conductivity in appendix A to subpart C of 40 CFR
 5119 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

5120
 5121 12) Cyanide.

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 5123 A) Manual distillation (ASTM Method D2036-98 A or Standard
 5124 Methods, 18th, 19th, or 20th ed., Method 4500-CN⁻ C), followed by
 5125 spectrophotometric, amenable.

5126
 5127 i) ASTM Method D2036-98 B or D2036-06 B; or

5128
 5129 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 5130 4500-CN⁻ G.

5131
 5132 B) Manual distillation (ASTM Method D2036-98 A or Standard
 5133 Methods, 18th, 19th, or 20th ed., Method 4500-CN⁻ C), followed by
 5134 spectrophotometric, manual.

5135
 5136 i) ASTM Method D2036-98 A or D2036-06 A;

5137
 5138 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 5139 4500-CN⁻ E; or

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 5141 iii) USGS Methods, Method I-3300-85.
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- C) Spectrophotometric, semiautomated: USEPA Environmental Inorganic Methods, Method 335.4 (rev. 1.0).
 - D) Selective electrode: Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-CN⁻ F.
 - E) UV/Distillation/Spectrophotometric: Kelada 01.
 - F) Microdistillation/Flow Injection/Spectrophotometric: QuikChem 10-204-00-1-X.
 - G) Ligand exchange and amperometry.
 - i) ASTM Method D6888-04.
 - ii) OI Analytical Method OIA-1677 DW.
 - H) Gas chromatography-mass spectrometry headspace: Method ME355.01.

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BOARD NOTE: USEPA added ASTM Method D2036-06 A and Standard Methods, 21st ed., Methods 4500-CN⁻E, F, and G as approved alternative methods for cyanide in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Method ME355.01 as an approved alternative method for cyanide in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA added Standard Methods, 22nd ed., Methods 4500-CN⁻E, F, and G as approved alternative methods for cyanide in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

5173 13) Fluoride.

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- A) Ion Chromatography.
 - i) USEPA Environmental Inorganic Methods, Method 300.0 (rev. 2.1) or USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0);
 - ii) ASTM Method D4327-97, ~~or~~ D4327-03, or D4327-11;
 - iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4110 B; or

- 5186 iv) Hach SPADNS 2 Method 10225.
- 5187
- 5188 B) Manual distillation, colorimetric SPADNS: Standard Methods,
- 5189 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-F⁻ B and D.
- 5190
- 5191 C) Manual electrode.
- 5192
- 5193 i) ASTM Method D1179-93 B, D1179-99 B, D1179-04 B, or
- 5194 D1179-10B; or
- 5195
- 5196 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
- 5197 4500-F⁻ C.
- 5198
- 5199 D) Automated electrode: Technicon Methods, Method 380-75WE.
- 5200
- 5201 E) Automated alizarin.
- 5202
- 5203 i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
- 5204 4500-F⁻ E; or
- 5205
- 5206 ii) Technicon Methods, Method 129-71W.
- 5207
- 5208 F) Capillary ion electrophoresis: ASTM Method D6508-00(2005).
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BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for fluoride to add capillary ion electrophoresis in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of "Waters Method D6508, Rev. 2." The Board attempt to locate a copy of the method disclosed that it is an ASTM method originally approved in 2000 and reapproved in 2005. The Board has cited to the ASTM Method D6508-00 (2005).

5210 BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods
 5211 4110 B and 4500-F⁻ B, C, D, and E and ASTM Method D1179-04 B as
 5212 approved alternative methods for fluoride in appendix A to subpart C of
 5213 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added
 5214 Hach SPADNS 2 Method 10225 as an approved alternative method for
 5215 fluoride in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at
 5216 76 Fed. Reg. 37014). USEPA added ASTM Method D1179-10 B as an
 5217 approved alternative method for fluoride in appendix A to subpart C of 40
 5218 CFR 141 on June 28, 2012 (at 77 Fed. Reg. 38523). USEPA added
 5219 Standard Methods, 22nd ed., Methods 4110 B and 4500-F⁻ B, C, D, and E
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5229 as approved alternative methods for fluoride in appendix A to subpart C of
 5230 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added
 5231 ASTM Method D4327-11 as an approved alternative method for fluoride
 5232 in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed.
 5233 Reg. 35081).
 5234

14) Lead.

A) Atomic absorption, furnace technique.

i) ASTM Method D3559-96 D, D3559-03 D, or D3559-08 D;

ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or

iii) Standard Methods Online, Method 3113 B-04.

B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).

C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).

D) Differential Pulse Anodic Stripping Voltammetry: Palintest Method 1001.

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

5258 BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 3113
 5259 B and USEPA NERL Method 200.5 as approved alternative methods for
 5260 lead in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73
 5261 Fed. Reg. 31616). USEPA added ASTM Method D3559-08 D as an
 5262 approved alternative method for lead in appendix A to subpart C of 40
 5263 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added
 5264 Standard Methods Online, Method 3113 B-04 as an approved alternative
 5265 method for lead in appendix A to subpart C of 40 CFR 141 on June 24,
 5266 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed.,
 5267 Method 3113 B as an approved alternative method for lead in appendix A
 5268 to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).
 5269 USEPA added Standard Methods Online, Method 3113 B-10 as an
 5270 approved alternative method for lead in appendix A to subpart C of 40
 5271 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard

5272 Methods, 22nd ed., Method 3113 B is the same version as Standard
 5273 Methods Online, Method 9223 B-10, the Board has not listed the Standard
 5274 Methods Online versions separately.

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 5276 15) Magnesium.
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 5278 A) Atomic absorption.
 5279
 5280 i) ASTM Method D511-93 B, D511-03 B, or D511-09 B; or
 5281
 5282 ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3111
 5283 B.
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 5285 B) Inductively coupled plasma.
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 5287 i) USEPA Environmental Metals Methods, Method 200.7
 5288 (rev. 4.4); or
 5289
 5290 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 5291 3120 B.
 5292
 5293 C) Complexation titrimetric.
 5294
 5295 i) ASTM Method D511-93 A, D511-03 A, or D511-09 A; or
 5296
 5297 ii) Standard Methods, 18th or 19th ed., Method 3500-Mg E or
 5298 Standard Methods, 20th, 21st, or 22nd ed., Method 3500-Mg
 5299 B.
 5300
 5301 D) Ion chromatography: ASTM Method D6919-03 or D6919-09.
 5302
 5303 E) Axially viewed inductively coupled plasma-atomic emission
 5304 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
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5306 BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods
 5307 3111 B, 3120 B, and 3500-Mg B and USEPA NERL Method 200.5 as
 5308 approved alternative methods for magnesium in appendix A to subpart C
 5309 of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added
 5310 ASTM Methods D511-09 A and B as approved alternative methods for
 5311 magnesium in appendix A to subpart C of 40 CFR 141 on November 10,
 5312 2009 (at 74 Fed. Reg. 57908). USEPA added ASTM Method D6919-09
 5313 as an approved alternative method for magnesium in appendix A to
 5314 subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014).

5315 USEPA added Standard Methods, 22nd ed., Methods 3111 B, 3120 B, and
 5316 3500-Mg B as approved alternative methods for magnesium in appendix A
 5317 to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).
 5318

16) Mercury.

- A) Manual cold vapor technique.
 - i) USEPA Environmental Metals Methods, Method 245.1 (rev. 3.0);
 - ii) ASTM Method D3223-97, ~~or~~ D3223-02, or D3223-12; or
 - iii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3112 B.
- B) Automated cold vapor technique: USEPA Inorganic Methods, Method 245.2.
- C) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).

5337 BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 3112
 5338 B as an approved alternative method for mercury in appendix A to subpart
 5339 C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added
 5340 Standard Methods Online, Method 3112 B-09 as an approved alternative
 5341 method for mercury in appendix A to subpart C of 40 CFR 141 on June
 5342 28, 2012 (at 77 Fed. Reg. 38523). USEPA added Standard Methods, 22nd
 5343 ed., Method 3112 B as an approved alternative method for mercury in
 5344 appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg.
 5345 32558). Because Standard Methods, 22nd ed., Method 3112 B is the same
 5346 version as Standard Methods Online 3112 B-09, the Board has not listed
 5347 the Standard Methods Online version separately. USEPA added ASTM
 5348 D3223 B-12 as an approved alternative method for mercury in appendix A
 5349 to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).
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17) Nickel.

- A) Inductively coupled plasma.
 - i) USEPA Environmental Metals Methods, Method 200.7 (rev. 4.4); or

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- ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 3120 B.
 - B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
 - C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
 - D) Atomic absorption, direct aspiration technique: Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3111 B.
 - E) Atomic absorption, furnace technique:
 - i) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - ii) Standard Methods Online, Method 3113 B-04.
 - F) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.
- BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3111 B, 3113 B, and 3120 B and USEPA NERL Method 200.5 as approved alternative methods for nickel in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods Online, Method 3113 B-04 as an approved alternative method for nickel in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3111 B, 3113 B, and 3120 B as approved alternative methods for nickel in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard Methods Online, Method 3113 B-10 as an approved alternative method for nickel in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113 B is the same version as Standard Methods Online, Method 9223 B-10, the Board has not listed the Standard Methods Online versions separately.
- 18) Nitrate.
 - A) Ion chromatography.

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- i) USEPA Environmental Inorganic Methods, Method 300.0 (rev. 2.1) or USEPA Organic and Inorganic Methods, Method 300.1 (rev. 1.0);
 - ii) ASTM Method D4327-97, ~~or D4327-03~~, or D4327-11;
 - iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4110 B; or
 - iv) Waters Test Method B-1011, available from Millipore Corporation.
- B) Automated cadmium reduction.
- i) USEPA Environmental Inorganic Methods, Method 353.2 (rev. 2.0);
 - ii) ASTM Method D3867-90 A; or
 - iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-NO₃⁻ F.
- C) Ion selective electrode.
- i) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-NO₃⁻ D; or
 - ii) Technical Bulletin 601.
- D) Manual cadmium reduction.
- i) ASTM Method D3867-90 B; or
 - ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-NO₃⁻ E.
- E) Capillary ion electrophoresis: ASTM Method D6508-00(2005).
- F) Reduction-colorimetric: Syssta Easy (1-Reagent).
- G) Direct colorimetric: Hach TNTplus 835/836 Method 10206.

5442 BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods
 5443 4110 B and 4500-NO₃⁻ D, E, and F as approved alternative methods for
 5444 nitrate in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73
 5445 Fed. Reg. 31616). USEPA added Syssta Easy (1-Reagent) as an approved
 5446 alternative method for nitrate in appendix A to subpart C of 40 CFR 141
 5447 on August 3, 2009 (at 73 Fed. Reg. 38348). USEPA added Hach TNTplus
 5448 835/836 Method 10206 as an approved alternative method for nitrate in
 5449 appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg.
 5450 37014). USEPA added Standard Methods, 22nd ed., Methods 4110 B and
 5451 4500-NO₃⁻ D, E, and F as approved alternative methods for nitrate in
 5452 appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg.
 5453 32558). USEPA added ASTM D4327-11 as an approved alternative
 5454 method for nitrate in appendix A to subpart C of 40 CFR 141 on June 19,
 5455 2014 (at 79 Fed. Reg. 35081).
 5456

5457 19) Nitrite.

5458 A) Ion chromatography.

- 5459 i) USEPA Environmental Inorganic Methods, Method 300.0
- 5460 (rev. 2.1) or USEPA Organic and Inorganic Methods,
- 5461 Method 300.1 (rev. 1.0);
- 5462
- 5463 ii) ASTM Method D4327-97, ~~or~~ D4327-03, or D4327-11;
- 5464
- 5465 iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
- 5466 4110 B; or
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- 5468 iv) Waters Test Method B-1011, available from Millipore
- 5469 Corporation.
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5473 B) Automated cadmium reduction.

- 5474
- 5475 i) USEPA Environmental Inorganic Methods, Method 353.2
- 5476 (rev. 2.0);
- 5477
- 5478 ii) ASTM Method D3867-90 A; or
- 5479
- 5480 iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
- 5481 4500-NO₃⁻ F.
- 5482

5483 C) Manual cadmium reduction.

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- 5485 i) ASTM Method D3867-90 B; or
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 5487 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 5488 4500-NO₃⁻ E.
 5489
 5490 D) Spectrophotometric: Standard Methods, 18th, 19th, 20th, 21st, or
 5491 22nd ed., Method 4500-NO₂⁻ B.
 5492
 5493 E) Capillary ion electrophoresis: ASTM Method D6508-00(2005).
 5494
 5495 F) Reduction-colorimetric: Systea Easy (1-Reagent).
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5497 BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods
 5498 4110 B, 4500-NO₃⁻ E and F; and 4500-NO₂⁻ B as approved alternative
 5499 methods for nitrite in appendix A to subpart C of 40 CFR 141 on June 3,
 5500 2008 (at 73 Fed. Reg. 31616). USEPA added Systea Easy (1-Reagent) as
 5501 an approved alternative method for nitrite in appendix A to subpart C of
 5502 40 CFR 141 on August 3, 2009 (at 73 Fed. Reg. 38348). USEPA added
 5503 Standard Methods, 22nd ed., Methods 4110 B, 4500-NO₃⁻ E and F, and
 5504 4500-NO₂⁻ B as approved alternative methods for nitrite in appendix A to
 5505 subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).
 5506 USEPA added ASTM D4327-11 as an approved alternative method for
 5507 nitrite in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79
 5508 Fed. Reg. 35081).
 5509

- 5510 20) Orthophosphate (unfiltered, without digestion or hydrolysis).
 5511
 5512 A) Automated colorimetric, ascorbic acid.
 5513
 5514 i) USEPA Environmental Inorganic Methods, Method 365.1
 5515 (rev. 2.0); or
 5516
 5517 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 5518 4500-P F.
 5519
 5520 B) Single reagent colorimetric, ascorbic acid.
 5521
 5522 i) ASTM Method D515-88 A; or
 5523
 5524 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 5525 4500-P E.
 5526

- 5527 C) Colorimetric, phosphomolybdate: USGS Methods, Method I-
5528 1601-85.
- 5529
- 5530 D) Colorimetric, phosphomolybdate, automated-segmented flow:
5531 USGS Methods, Method I-2601-90.
- 5532
- 5533 E) Colorimetric, phosphomolybdate, automated discrete: USGS
5534 Methods, Method I-2598-85.
- 5535
- 5536 F) Ion Chromatography.
- 5537
- 5538 i) USEPA Environmental Inorganic Methods, Method 300.0
5539 (rev. 2.1) or USEPA Organic and Inorganic Methods,
5540 Method 300.1 (rev. 1.0);
- 5541
- 5542 ii) ASTM Method D4327-97, ~~or~~ D4327-03, or D4327-11; or
- 5543
- 5544 iii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
5545 4110 B.
- 5546
- 5547 G) Capillary ion electrophoresis: ASTM Method D6508-00(2005).
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5549 BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods
5550 4110 B and 4500-P E and F as approved alternative methods for
5551 orthophosphate in appendix A to subpart C of 40 CFR 141 on June 3,
5552 2008 (at 73 Fed. Reg. 31616). Because Standard Methods, 21st ed.,
5553 Methods 4500-P E and F are the same versions as Standard Methods
5554 Online 4500-P E-99 and F-99, the Board has not listed the Standard
5555 Methods Online versions separately. USEPA added Standard Methods,
5556 22nd ed., Methods 4500-P E and F and 4110 B as approved alternative
5557 methods for orthophosphate in appendix A to subpart C of 40 CFR 141 on
5558 May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added ASTM D4327-11
5559 as an approved alternative method for orthophosphate in appendix A to
5560 subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081).
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- 5562 21) pH: electrometric.
- 5563
- 5564 A) USEPA Inorganic Methods, Method 150.1 or Method 150.2;
- 5565
- 5566 B) ASTM Method D1293-95, D1293-99, or D1293-12; or
- 5567
- 5568 C) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method 4500-
5569 H⁺ B.

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BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 4500-H⁺ B as an approved alternative method for pH in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods, 22nd ed., Method 4500-H⁺ B and ASTM Method D1293-12 as approved alternative methods for pH in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

22) Selenium.

- A) Atomic absorption, hydride.
 - i) ASTM Method D3859-98 A, D3859-03 A, or D3859-08 A; or
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3114 B.
- B) Inductively coupled plasma-mass spectrometry: USEPA Environmental Metals Methods, Method 200.8 (rev. 5.3).
- C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods, Method 200.9 (rev. 2.2).
- D) Atomic absorption, furnace technique.
 - i) ASTM Method D3859-98 B, D3859-03 B, or D3859-08 B;
 - ii) Standard Methods, 18th, 19th, 21st, or 22nd ed., Method 3113 B; or
 - iii) Standard Methods Online, Method 3113 B-04.
- E) Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP-AES): USEPA NERL Method 200.5.

BOARD NOTE: USEPA added Standard Methods, 21st ed., Methods 3113 B and 3114 B and USEPA NERL Method 200.5 as approved alternative methods for selenium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added ASTM Methods D3859-08 A and B as approved alternative methods for selenium in appendix A to subpart C of 40 CFR 141 on November 10, 2009 (at 74 Fed. Reg. 57908). USEPA added Standard Methods Online, Method 3113

5613 B-04 and Method 3114 B-09 as approved alternative methods for selenium
 5614 in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed.
 5615 Reg. 37014). USEPA added Standard Methods, 22nd ed., Methods 3113 B
 5616 and 3114 B as approved alternative methods for selenium in appendix A to
 5617 subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).
 5618 Because Standard Methods, 22nd ed., Method 3114 B is the same version
 5619 as Standard Methods Online 3114 B-09, the Board has not listed the
 5620 Standard Methods Online version separately. USEPA added Standard
 5621 Methods Online, Method 3113 B-10 as an approved alternative method for
 5622 selenium in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at
 5623 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 3113
 5624 B is the same version as Standard Methods Online, Method 9223 B-10, the
 5625 Board has not listed the Standard Methods Online versions separately.
 5626

23) Silica.

- 5627 A) Colorimetric, molybdate blue: USGS Methods, Method I-1700-
- 5628 85.
- 5629 B) Colorimetric, molybdate blue, automated-segmented flow: USGS
- 5630 Methods, Method I-2700-85.
- 5631
- 5632 C) Colorimetric: ASTM Method D859-94, D859-00, D859-05, or
- 5633 D859-10.
- 5634
- 5635 D) Molybdosilicate: Standard Methods, 18th or 19th ed., Method
- 5636 4500-Si D or Standard Methods, 20th, 21st, or 22nd ed., Method
- 5637 4500-SiO₂ C.
- 5638
- 5639 E) Heteropoly blue: Standard Methods, 18th or 19th ed., Method
- 5640 4500-Si E or Standard Methods, 20th, 21st, or 22nd ed., Method
- 5641 4500-SiO₂ D.
- 5642
- 5643 F) Automated method for molybdate-reactive silica: Standard
- 5644 Methods, 18th or 19th ed., Method 4500-Si F or Standard Methods,
- 5645 20th, 21st, or 22nd ed., Method 4500-SiO₂ E.
- 5646
- 5647 G) Inductively coupled plasma.
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- 5650 i) USEPA Environmental Metals Methods, Method 200.7
- 5651 (rev. 4.4); or
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5655 ii) Standard Methods, 18th, 19th, 20th, 21st, or 22nd ed., Method
 5656 3120 B.

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 5658 H) Axially viewed inductively coupled plasma-atomic emission
 5659 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
 5660

5661 BOARD NOTE: USEPA added ASTM Method D859-05, Standard
 5662 Methods, 21st ed.; Methods 3120 B and 4500-SiO₂ C, D, and E; and
 5663 USEPA NERL Method 200.5 as approved alternative methods for silica in
 5664 appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg.
 5665 31616). USEPA added ASTM Method D859-10 as an approved
 5666 alternative method for silica in appendix A to subpart C of 40 CFR 141 on
 5667 June 28, 2012 (at 77 Fed. Reg. 38523). USEPA added Standard Methods,
 5668 22nd ed., Methods 3120 B and 4500-SiO₂ C, D, and E as approved
 5669 alternative methods for silica in appendix A to subpart C of 40 CFR 141
 5670 on May 31, 2013 (at 78 Fed. Reg. 32558).
 5671

5672 24) Sodium.

5673
 5674 A) Inductively coupled plasma: USEPA Environmental Metals
 5675 Methods, Method 200.7 (rev. 4.4).
 5676

5677 B) Atomic absorption, direct aspiration: Standard Methods, 18th, 19th,
 5678 21st, or 22nd ed., Method 3111 B.
 5679

5680 C) Ion chromatography: ASTM Method D6919-03 or D6919-09.
 5681

5682 D) Axially viewed inductively coupled plasma-atomic emission
 5683 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
 5684

5685 BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 3113
 5686 B and USEPA NERL Method 200.5 as approved alternative methods for
 5687 sodium in appendix A to subpart C of 40 CFR 141 on June 3, 2008 (at 73
 5688 Fed. Reg. 31616). USEPA added ASTM Method D6919-09 as an
 5689 approved alternative method for sodium in appendix A to subpart C of 40
 5690 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added
 5691 Standard Methods, 22nd ed., Method 3111 B as an approved alternative
 5692 method for sodium in appendix A to subpart C of 40 CFR 141 on May 31,
 5693 2013 (at 78 Fed. Reg. 32558).
 5694

5695 25) Temperature; thermometric: Standard Methods, 18th, 19th, 20th, 21st, or
 5696 22nd ed., Method 2550.
 5697

5698 BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 2550
 5699 as an approved alternative method for temperature in appendix A to
 5700 subpart C of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616).
 5701 USEPA added Standard Methods, 22nd ed., Method 2550 as an approved
 5702 alternative method for temperature in appendix A to subpart C of 40 CFR
 5703 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA added Standard
 5704 Methods Online, Method 2550-10 as an approved alternative method for
 5705 temperature in appendix A to subpart C of 40 CFR 141 on June 19, 2014
 5706 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method
 5707 2550 is the same version as Standard Methods Online, Method 2550-10,
 5708 the Board has not listed the Standard Methods Online versions separately.
 5709

5710 26) Thallium.

- 5711
- 5712 A) Inductively coupled plasma-mass spectrometry: USEPA
- 5713 Environmental Metals Methods, Method 200.8 (rev. 5.3).
- 5714
- 5715 B) Atomic absorption, platform furnace technique: USEPA
- 5716 Environmental Metals Methods, Method 200.9 (rev. 2.2).
- 5717

5718 b) Sample collection for antimony, arsenic, asbestos, barium, beryllium, cadmium,
 5719 chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and
 5720 thallium pursuant to Sections 611.600 through 611.604 must be conducted using
 5721 the following sample preservation, container, and maximum holding time
 5722 procedures:
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5724 BOARD NOTE: For cyanide determinations samples must be adjusted with
 5725 sodium hydroxide to pH 12 at the time of collection. When chilling is indicated
 5726 the sample must be shipped and stored at 4° C or less. Acidification of nitrate or
 5727 metals samples may be with a concentrated acid or a dilute (50% by volume)
 5728 solution of the applicable concentrated acid. Acidification of samples for metals
 5729 analysis is encouraged and allowed at the laboratory rather than at the time of
 5730 sampling provided the shipping time and other instructions in Section 8.3 of
 5731 USEPA Environmental Metals Method 200.7, 200.8, or 200.9 are followed.
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5733 1) Antimony.

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- 5735 A) Preservative: Concentrated nitric acid to pH less than 2.
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- 5737 B) Plastic or glass (hard or soft).
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- 5739 C) Holding time: Samples must be analyzed as soon after collection
- 5740 as possible, but in any event within six months.

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- 2) Arsenic.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
 - 3) Asbestos.
 - A) Preservative: Cool to 4° C.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.
 - 4) Barium.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
 - 5) Beryllium.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
 - 6) Cadmium.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).

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- C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
 - 7) Chromium.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
 - 8) Cyanide.
 - A) Preservative: Cool to 4° C. Add sodium hydroxide to pH greater than 12. See the analytical methods for information on sample preservation.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
 - 9) Fluoride.
 - A) Preservative: None.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within one month.
 - 10) Mercury.
 - A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 28 days.
 - 11) Nickel.

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- A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 12) Nitrate, chlorinated.
- A) Preservative: Cool to 4° C.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
- 13) Nitrate, non-chlorinated.
- A) Preservative: Concentrated sulfuric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
- 14) Nitrite.
- A) Preservative: Cool to 4° C.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.
- 15) Selenium.
- A) Preservative: Concentrated nitric acid to pH less than 2.
 - B) Plastic or glass (hard or soft).
 - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

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- 16) Thallium.
- A) Preservative: Concentrated nitric acid to pH less than 2.
- B) Plastic or glass (hard or soft).
- C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
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- c) Analyses under this Subpart N must be conducted by a certified laboratory in one of the categories listed in Section 611.490(a). The Agency must certify laboratories to conduct analyses for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium if the laboratory does as follows:
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- 1) It analyzes performance evaluation (PE) samples, provided by the Agency pursuant to 35 Ill. Adm. Code 186, that include those substances at levels not in excess of levels expected in drinking water; and
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- 2) It achieves quantitative results on the analyses within the following acceptance limits:
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- A) Antimony: $\pm 30\%$ at greater than or equal to 0.006 mg/l.
- B) Arsenic: $\pm 30\%$ at greater than or equal to 0.003 mg/l.
- C) Asbestos: 2 standard deviations based on study statistics.
- D) Barium: $\pm 15\%$ at greater than or equal to 0.15 mg/l.
- E) Beryllium: $\pm 15\%$ at greater than or equal to 0.001 mg/l.
- F) Cadmium: $\pm 20\%$ at greater than or equal to 0.002 mg/l.
- G) Chromium: $\pm 15\%$ at greater than or equal to 0.01 mg/l.
- H) Cyanide: $\pm 25\%$ at greater than or equal to 0.1 mg/l.
- I) Fluoride: $\pm 10\%$ at 1 to 10 mg/l.
- J) Mercury: $\pm 30\%$ at greater than or equal to 0.0005 mg/l.
- K) Nickel: $\pm 15\%$ at greater than or equal to 0.01 mg/l.

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- L) Nitrate: $\pm 10\%$ at greater than or equal to 0.4 mg/ℓ.
- M) Nitrite: $\pm 15\%$ at greater than or equal to 0.4 mg/ℓ.
- N) Selenium: $\pm 20\%$ at greater than or equal to 0.01 mg/ℓ.
- O) Thallium: $\pm 30\%$ at greater than or equal to 0.002 mg/ℓ.

BOARD NOTE: Derived from 40 CFR 141.23(k) and appendix A to subpart C of 40 CFR 141 (2014)~~(2013)~~.

(Source: Amended at 39 Ill. Reg. _____, effective _____)

Section 611.612 Monitoring Requirements for Old Inorganic MCLs

- a) Analyses for the purpose of determining compliance with the old inorganic MCLs of Section 611.300 are required as follows:
 - 1) Analyses for all CWSs utilizing surface water sources must be repeated at yearly intervals.
 - 2) Analyses for all CWSs utilizing only groundwater sources must be repeated at three-year intervals.
 - 3) This subsection (a)(3) corresponds with 40 CFR 141.23(1)(3), which requires monitoring for the repealed old MCL for nitrate at a frequency specified by the state. The Board has followed the USEPA lead and repealed that old MCL. This statement maintains structural consistency with USEPA rules.
 - 4) This subsection (a)(4) corresponds with 40 CFR 141.23(1)(4), which authorizes the state to determine compliance and initiate enforcement action. This statement maintains structural consistency with USEPA rules.
- b) If the result of an analysis made under subsection (a) of this Section indicates that the level of any contaminant listed in Section 611.300 exceeds the old MCL, the supplier must report to the Agency within seven days and initiate three additional analyses at the same sampling point within one month.
- c) When the average of four analyses made pursuant to subsection (b) of this Section, rounded to the same number of significant figures as the old MCL for the

5956 substance in question, exceeds the old MCL, the supplier must notify the Agency
 5957 and give notice to the public pursuant to Subpart V of this Part. Monitoring after
 5958 public notification must be at a frequency designated by the Agency by a SEP
 5959 issued pursuant to Section 611.110 and must continue until the old MCL has not
 5960 been exceeded in two successive samples or until a different monitoring schedule
 5961 becomes effective as a condition to a variance, an adjusted standard, a site
 5962 specific rule, an enforcement action, or another SEP issued pursuant to Section
 5963 611.110.
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- 5965 d) This subsection (d) corresponds with 40 CFR 141.23(o), which pertains to
 5966 monitoring for the repealed old MCL for nitrate. This statement maintains
 5967 structural consistency with USEPA rules.
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- 5969 e) This subsection (e) corresponds with 40 CFR 141.23(p), which pertains to the use
 5970 of existing data up until a date long since expired. This statement maintains
 5971 structural consistency with USEPA rules.
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- 5973 f) Analyses conducted to determine compliance with the old MCLs of Section
 5974 611.300 must be made in accordance with the following methods, incorporated by
 5975 reference in Section 611.102, or alternative methods approved by the Agency
 5976 pursuant to Section 611.480.
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 - 5978 1) Fluoride: The methods specified in Section 611.611(c) must apply for the
 5979 purposes of this Section.
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 - 5981 2) Iron.
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 - 5983 A) Standard Methods.
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 - 5985 i) Method 3111 B, 18th, 19th, 21st, or 22nd ed.;
 - 5986 ii) Method 3113 B, 18th, 19th, 21st, or 22nd ed.; or
 - 5987 iii) Method 3120 B, 18th, 19th, 20th, 21st, or 22nd ed.
 - 5988 B) Standard Methods Online, Method 3113 B-04.
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 - 5990 C) USEPA Environmental Metals Methods.
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 - 5992 i) Method 200.7 (rev. 4.4); or
 - 5993 ii) Method 200.9 (rev. 2.2).
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5999 D) Axially viewed inductively coupled plasma-atomic emission
6000 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
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6002 BOARD NOTE: USEPA added USEPA NERL Method 200.5 as an
6003 approved alternative method in appendix A to subpart C of 40 CFR 141 on
6004 June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods,
6005 21st ed.; Methods 3111 B, 3113 B, and 3120 B and USEPA NERL Method
6006 200.5 as approved alternative methods for iron in appendix A to subpart C
6007 of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added
6008 Standard Methods Online, Method 3113 B-04 as an approved alternative
6009 method for iron in appendix A to subpart C of 40 CFR 141 on June 24,
6010 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd ed.,
6011 Methods 3111 D, 3113 B, and 3120 B as approved alternative methods for
6012 iron in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78
6013 Fed. Reg. 37463). USEPA added Standard Methods Online, Method 3113
6014 B-10 as an approved alternative method for iron in appendix A to subpart
6015 C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because
6016 Standard Methods, 22nd ed., Method 3113 B is the same version as
6017 Standard Methods Online, Method 9223 B-10, the Board has not listed the
6018 Standard Methods Online versions separately.
6019

6020 3) Manganese.
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6022 A) Standard Methods.
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6024 i) Method 3111 B, 18th, 19th, 21st, or 22nd ed.;

6025 ii) Method 3113 B, 18th, 19th, 21st, or 22nd ed.; or
6026

6027 iii) Method 3120 B, 18th, 19th, 20th, 21st, or 22nd ed.
6028

6029 B) Standard Methods Online, Method 3113 B-04.
6030

6031 C) USEPA Environmental Metals Methods.
6032

6033 i) Method 200.7 (rev. 4.4);
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6035 ii) Method 200.8 (rev. 5.3); or
6036

6037 iii) Method 200.9 (rev. 2.2).
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6039 D) Axially viewed inductively coupled plasma-atomic emission
6040 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
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 6043 BOARD NOTE: USEPA added Standard Methods, 21st ed.; Methods
 6044 3111 B, 3113 B, and 3120 B and USEPA NERL Method 200.5 as
 6045 approved alternative methods for manganese in appendix A to subpart C
 6046 of 40 CFR 141 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added
 6047 Standard Methods Online, Method 3113 B-04 as an approved alternative
 6048 method for manganese in appendix A to subpart C of 40 CFR 141 on June
 6049 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, 22nd
 6050 ed., Methods 3111 D, 3113 B, and 3120 B as approved alternative
 6051 methods for manganese in appendix A to subpart C of 40 CFR 141 on
 6052 June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods
 6053 Online, Method 3113 B-10 as an approved alternative method for
 6054 manganese in appendix A to subpart C of 40 CFR 141 on June 19, 2014
 6055 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method
 6056 3113 B is the same version as Standard Methods Online, Method 9223 B-
 6057 10, the Board has not listed the Standard Methods Online versions
 6058 separately.
 6059

6060 4) Zinc.

6061 A) Standard Methods.

- 6062 i) Method 3111 B, 18th, 19th, 21st, or 22nd ed.; or
- 6063
- 6064 ii) Method 3120 B, 18th, 19th, 20th, 21st, or 22nd ed.
- 6065
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6068 B) USEPA Environmental Metals Methods.

- 6069 i) Method 200.7 (rev. 4.4); or
- 6070
- 6071 ii) Method 200.8 (rev. 5.3).
- 6072
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6074 C) Axially viewed inductively coupled plasma-atomic emission
 6075 spectrometry (AVICP-AES): USEPA NERL Method 200.5.
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6077 BOARD NOTE: USEPA added Standard Methods, 21st ed.; Methods
 6078 3111 B and 3120 B and USEPA NERL Method 200.5 as approved
 6079 alternative methods for zinc in appendix A to subpart C of 40 CFR 141 on
 6080 June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added Standard Methods,
 6081 22nd ed., Methods 3111 B and 3120 B as approved alternative methods for
 6082 zinc in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78
 6083 Fed. Reg. 37463).
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6085 BOARD NOTE: The provisions of subsections (a) through (e) of this Section derive
 6086 from 40 CFR 141.23(l) through (p) (2014)(2013). Subsections (f)(2) through (f)(4) of
 6087 this Section relate exclusively to additional State requirements. The Board retained
 6088 subsection (f) of this Section to set forth methods for the inorganic contaminants for
 6089 which there is a State-only MCL. The methods specified are those set forth in 40 CFR
 6090 143.4(b) and appendix A to subpart C of 40 CFR 141 (2014)(2013), for secondary MCLs.

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 6092 (Source: Amended at 39 Ill. Reg. _____, effective _____)
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6094 **SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS**

6095 **Section 611.645 Analytical Methods for Organic Chemical Contaminants**

6096 Analysis for the Section 611.311(a) VOCs under Section 611.646; the Section 611.311(c) SOCs
 6097 under Section 611.648; the Section 611.310 old MCLs under Section 611.641; and for THMs,
 6098 TTHMs, and TTHM potential must be conducted using the methods listed in this Section. All
 6099 methods are incorporated by reference in Section 611.102. Other required analytical test
 6100 procedures germane to the conduct of these analyses are contained in the USEPA document,
 6101 "Technical Notes of Drinking Water Methods," incorporated by reference in Section 611.102.
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6105 a) Volatile Organic Chemical Contaminants (VOCs).
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Contaminant	Analytical Methods
Benzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Method 524.3 (rev. 1.0)
Carbon tetrachloride	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0), 524.4, and 551.1 (rev. 1.0)
Chlorobenzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
1,2-Dichlorobenzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
1,4-Dichlorobenzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1);

1,2-Dichloroethane	USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4 USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
1,1-Dichloroethylene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
cis-Dichloroethylene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
trans-Dichloroethylene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
Dichloromethane	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
1,2-Dichloropropane	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
Ethylbenzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
Styrene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
Tetrachloroethylene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0), 524.4, and 551.1 (rev. 1.0)
Toluene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4

1,1,1-Trichloroethane	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0), 524.4, and 551.1 (rev. 1.0)
Trichloroethylene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0), 524.4, and 551.1 (rev. 1.0)
Toluene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0)
1,2,4-Trichlorobenzene	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
1,1,2-Trichloroethane	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
Vinyl chloride	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4
Xylenes (total)	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 524.4

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BOARD NOTE: USEPA added USEPA OGWDW Method 524.3 (rev. 1.0) as an alternative method for all of the VOCs in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA added USEPA OGWDW Method 524.4 as an approved alternative method for all of the VOCs in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

b) Synthetic Organic Chemical Contaminants (SOCs).

Contaminant	Analytical Methods
2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD or dioxin)	Dioxin and Furan Method 1613 (rev. B)

2,4-D	USEPA Organic Methods, Methods 515.2 (rev. 1.1), 555 (rev. 1.0), and 515.1 (rev. 4.0); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Method 515.4 (rev. 1.0); ASTM Method D5317-93 or D5317-98 (2003); Standard Methods, 21 st or 22 nd ed., Method 6640 B
2,4,5-TP (Silvex)	USEPA Organic Methods, Methods 515.2 (rev. 1.1), 555 (rev. 1.0), and 515.1 (rev. 4.0); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Method 515.4 (rev. 1.0); ASTM Method D5317-93 or D5317-98 (2003); Standard Methods, 21 st or 22 nd ed., Method 6640 B
Alachlor	USEPA Organic Methods, Methods 505 (rev. 2.1) ¹ , 507 (rev. 2.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Atrazine	USEPA Organic Methods, Methods 505 (rev. 2.1) ¹ , 507 (rev. 2.1), 508.1 (rev. 2.1), 523 (rev. 1.0), 525.2 (rev. 2.0), 525.3 (rev. 1.0), 536 (rev. 1.0), and 551.1 (rev. 1.0); Syngenta AG-625 ²
Benzo(a)pyrene	USEPA Organic Methods, Methods 525.2 (rev. 2.0), 525.3 (rev. 1.0), 550, and 550.1
Carbofuran	USEPA Organic Methods, Methods 531.1 (rev. 3.1); USEPA OGWDW Methods, Method 531.2 (rev. 1.0); Standard Methods, 18 th ed. Supplement, 19 th ed., or 20 th ed., Method 6610; Standard Methods, 21 st or 22 nd ed., Method 6610 B
Chlordane	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.1), 525.2 (rev. 2.0), and 525.3 (ver. 1.0)

Dalapon	USEPA Organic Methods, Methods 515.1 (rev. 4.0), 552.1 (rev. 1.0), and 552.2 (rev. 1.0); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Methods 515.4 (rev. 1.0), 552.3 (rev. 1.0), and 557; Standard Methods, 21 st or 22 nd ed., Method 6640 B
Di(2-ethylhexyl)adipate	USEPA Organic Methods, Methods 506 (rev. 1.1), 525.2 (rev. 2.0), and 525.3 (ver. 1.0)
Di(2-ethylhexyl)phthalate	USEPA Organic Methods, Methods 506 (rev. 1.1), 525.2 (rev. 2.0), and 525.3 (ver. 1.0)
Dibromochloropropane (DBCP)	USEPA Organic Methods, Methods 504.1 (rev. 1.1), USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 551.1 (rev. 1.0)
Dinoseb	USEPA Organic Methods, Methods 515.1 (rev. 4.0) and 515.2 (rev. 1.1); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Methods 515.4 (rev. 1.0) and 555 (rev. 1.0); Standard Methods, 21 st or 22 nd ed., Method 6640 B
Diquat	USEPA NERL Method 549.2 (rev. 1.0)
Endothall	USEPA Organic Methods, Method 548.1 (rev. 1.0)
Endrin	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Ethylene dibromide (EDB)	USEPA Organic Methods, Method 504.1 (rev. 1.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0) and 551.1 (rev.1.0)

Glyphosate	USEPA Organic Methods, Method 547; Standard Methods, 18 th ed., 19 th ed., 20 th , 21 st , or 22 nd ed., Method 6651 B
Heptachlor	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Heptachlor Epoxide	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev.1.0)
Hexachlorobenzene	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Hexachlorocyclopentadiene	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Lindane	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Methoxychlor	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 551.1 (rev. 1.0)
Oxamyl	USEPA Organic Methods, Method 531.1 (rev. 3.1); USEPA OGWDW Methods, Method 531.2 (rev. 1.0); Standard Methods, 18 th ed. Supplement, 19 th ed., or 20 th ed., Method 6610; Standard Methods, 21 st or 22 nd ed., Method 6610 B
PCBs (measured for compliance purposes as decachlorobiphenyl)	USEPA Organic Methods, Method 508A (rev. 1.0)
PCBs (qualitatively identified as Aroclors)	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), and 525.3 (ver. 1.0)

Pentachlorophenol	USEPA Organic Methods, Methods 515.1 (rev. 4.0), 515.2 (rev. 1.1), 525.2 (rev. 2.0), 525.3 (ver. 1.0), and 555 (rev. 1.0); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Method 515.4 (rev. 1.0); ASTM Method D5317-93 or D5317-98 (2003); Standard Methods, 21 st or 22 nd ed., Method 6640 B
Picloram	USEPA Organic Methods, Methods 515.1 (rev. 4.0), 515.2 (rev. 1.1), and 555 (rev. 1.0); USEPA Organic and Inorganic Methods, Method 515.3 (rev. 1.0); USEPA OGWDW Methods, Method 515.4 (rev. 1.0); ASTM Method D5317-93 or D5317-98 (2003); Standard Methods, 21 st or 22 nd ed., Method 6640 B
Simazine	USEPA Organic Methods, Methods 505 (rev. 2.1) ¹ , 507 (rev. 2.1), 508.1 (rev. 2.0), 523 (ver. 1.0), 525.2 (rev. 2.0), 525.3 (ver. 1.0), 536 (ver. 1.0), and 551.1 (rev. 1.0)
Toxaphene	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 2.1), 508.1 (rev. 2.0), 525.2 (rev. 2.0), and 525.3 (ver. 1.0)

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BOARD NOTE: USEPA added Standard Methods, 21st ed., Method 6610 B and Standard Methods Online, Method 6610 B-04 as approved alternative methods for carbofuran and oxamyl on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA added USEPA OGWDW Method 524.3 (rev. 1.0) as an alternative method for dibromochloropropane and ethylene dibromide in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA approved Standard Methods, 21st ed., Method 6640 B and Standard Methods Online, Method 6640 B-01 and USEPA OGWDW Methods, Method 557 as approved alternative methods for dalapon in appendix A to subpart C of 40 CFR 141 on June 8, 2010 (at 75 Fed. Reg. 32295). USEPA added Standard Methods, 21st ed., Method 6640 B as an approved alternative method for 2,4-D, 2,4,5-TP (Silvex), dinoseb, pentachlorophenol, and picloram in appendix A to subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA added Standard Methods, Online, Method 6640 B-01 as an approved alternative method for 2,4-D, 2,4,5-TP

6131 (Silvex), dalapon, dinoseb, pentachlorophenol, and picloram and in appendix A to
 6132 subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). Since the
 6133 version of Method 6640 B that appears in Standard Methods Online is the same as
 6134 that which appears in Standard Methods, 21st ed., the Board has cited only to
 6135 Standard Methods, 21st ed. USEPA added Standard Methods, 21st ed., Method
 6136 6651 B as an approved alternative method for glyphosate in appendix A to
 6137 subpart C of 40 CFR 141 on June 24, 2011 (at 76 Fed. Reg. 37014). USEPA
 6138 added Standard Methods Online, Method 6651 B-00 as an approved alternative
 6139 method for glyphosate in appendix A to subpart C of 40 CFR 141 on June 24,
 6140 2011 (at 76 Fed. Reg. 37014). Since the version of Method 6651 B that appears
 6141 in Standard Methods Online is the same as that which appears in Standard
 6142 Methods, 21st ed., the Board has cited only to Standard Methods, 21st ed. USEPA
 6143 approved USEPA OGWDW Methods, Method 523 (ver. 1.0) and Method 536
 6144 (ver. 1.0) as approved alternative methods for atrazine and simazine and USEPA
 6145 NERL Methods, Method 525.3 as an approved alternative method for alachlor,
 6146 atrazine, benzo(a)pyrene, chlordane, di(2-ethylhexyl)adipate,
 6147 di(2-ethylhexyl)phthalate, endrin, heptachlor, 'heptachlor epoxide,
 6148 hexachlorobenzene, hexachlorocyclopentadiene, lindane, methoxychlor, PCBs (as
 6149 arachlors), pentachlorophenyl, simazine, and toxaphene in appendix A to subpart
 6150 C of 40 CFR 141 on June 8, 2012 (at 77 Fed. Reg. 38523). USEPA added
 6151 Standard Methods, 22nd ed., Method 6610 B and Standard Methods Online,
 6152 Method 6610 B-04 as an approved alternative method for carbofuran and oxamyl;
 6153 Standard Methods, 22nd ed., Method 6640 B and Standard Methods Online,
 6154 Method 6640 B-01 as an approved method for 2,4-D, 2,4,5-TP (silvex), dalapon,
 6155 dinoseb, pentachlorophenol, and picloram; and Standard Methods, 22nd ed.,
 6156 Method 6651 B for glyphosate in appendix A to subpart C of 40 CFR 141 on May
 6157 31, 2013 (at 78 Fed. Reg. 32558). Because Standard Methods, 22nd ed., Methods
 6158 6610 B and 6640 B-01 are the same versions as Standard Methods Online 6610
 6159 B-04 and 6640 B-01, the Board has not listed the Standard Methods Online
 6160 versions separately. USEPA added Standard Methods Online, Method 6640 B-06
 6161 as an approved alternative method for 2,4-D, 2,4,5-TP (silvex), dalapon, dinoseb,
 6162 pentachlorophenol, and picloram and Method 6651 B-05 for glyphosate in
 6163 appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg.
 6164 35081). Because Standard Methods, 22nd ed., Methods 6640 B and 6651 B are
 6165 the same versions as Standard Methods Online, Methods 6640 B-06 and 6651
 6166 B-05, the Board has not listed the Standard Methods Online versions separately.

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 6168 c) Total Trihalomethanes (TTHMs).

6169 Contaminant

Analytical Methods

Total Trihalomethanes (TTHMs), Trihalomethanes (THMs), and Maximum Total Trihalomethane Potential	USEPA Organic Methods, Methods 502.2 (rev. 2.1) and 524.2 (rev. 4.1); USEPA OGWDW Methods, Methods 524.3 (rev. 1.0), 524.4, and 551.1 (rev. 1.0)
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BOARD NOTE: USEPA added USEPA OGWDW Method 524.3 (rev. 1.0) as an alternative method for total trihalomethane in appendix A to subpart C of 40 CFR 141 on August 3, 2009 (at 74 Fed. Reg. 38348). USEPA added USEPA OGWDW Method 524.4 as an approved alternative method for total trihalomethanes in appendix A to subpart C of 40 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558).

- d) State-Only MCLs (for which a method is not listed in subsections (a) through (c) of this Section).

Contaminant	Analytical Methods
Aldrin	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), and 525.2 (rev. 2.0)
DDT	USEPA Organic Methods, Methods 505 (rev. 2.1) and 508 (rev. 3.1)
Dieldrin	USEPA Organic Methods, Methods 505 (rev. 2.1), 508 (rev. 3.1), 508.1 (rev. 2.0), and 525.2 (rev. 2.0)

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- e) The following footnotes are appended to method entries in subsections (a) and (b) of this Section:

¹ denotes that, for the particular contaminant, a nitrogen-phosphorus detector should be substituted for the electron capture detector in method 505 (or another approved method should be used) to determine alachlor, atrazine, and simazine if lower detection limits are required.

² denotes that Syngenta Method AG-625 may not be used for the analysis of atrazine in any system where chlorine dioxide is used for drinking water treatment. In samples from all other systems, any result for atrazine generated by Syngenta Method AG-625 that is greater than one-half the maximum contaminant level (MCL) (in other words, greater than 0.0015 mg/ℓ or 1.5 µg/ℓ) must be confirmed using another approved method for this contaminant and should use additional volume of the original sample collected for

6197 compliance monitoring. In instances where a result from Syngenta Method
6198 AG-625 triggers such confirmatory testing, the confirmatory result is to be used
6199 to determine compliance.
6200

6201 BOARD NOTE: Derived from 40 CFR 141.24(e) and appendix A to subpart C of 40 CFR 141
6202 (2014)(2013).
6203

6204 (Source: Amended at 39 Ill. Reg. _____, effective _____)
6205

6206 SUBPART R: ENHANCED FILTRATION AND DISINFECTION:
6207 SYSTEMS THAT SERVE 10,000 OR MORE PEOPLE
6208

6209
6210 **Section 611.742 Disinfection Profiling and Benchmarking**
6211

6212 a) Determination of a supplier required to profile. A PWS supplier subject to the
6213 requirements of this Subpart R must determine its TTHM annual average using
6214 the procedure in subsection (a)(1) of this Section and its HAA5 annual average
6215 using the procedure in subsection (a)(2) of this Section. The annual average is the
6216 arithmetic average of the quarterly averages of four consecutive quarters of
6217 monitoring.
6218

6219 1) The TTHM annual average that is used must be the annual average during
6220 the same period as the HAA5 annual average.
6221

6222 A) A supplier that collected data under the provisions of 40 CFR 141
6223 Subpart M (Information Collection Rule) must use the results of
6224 the samples collected during the last four quarters of required
6225 monitoring under former 40 CFR 141.42 (1995).
6226

6227 B) A supplier that uses "grandfathered" HAA5 occurrence data that
6228 meet the provisions of subsection (a)(2)(B) of this Section must
6229 use TTHM data collected at the same time under the provisions of
6230 former Section 611.680.
6231

6232 C) A supplier that uses HAA5 occurrence data that meet the
6233 provisions of subsection (a)(2)(C)(i) of this Section must use
6234 TTHM data collected at the same time under the provisions of
6235 SectionSections 611.310 and former Section 611.680.
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6237 2) The HAA5 annual average that is used must be the annual average during
6238 the same period as the TTHM annual average.
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- A) A supplier that collected data under the provisions of 40 CFR 141 Subpart M (Information Collection Rule) must use the results of the samples collected during the last four quarters of required monitoring under former 40 CFR 141.42 (1995).
 - B) A supplier that has collected four quarters of HAA5 occurrence data that meets the routine monitoring sample number and location requirements for TTHM in former Section 611.680 and handling and analytical method requirements of former Section 611.685 may use that data to determine whether the requirements of this Section apply.
 - C) A supplier that had not collected four quarters of HAA5 occurrence data that meets the provisions of either subsection (a)(2)(A) or (a)(2)(B) of this Section by March 31, 1999 must do either of the following:
 - i) Conduct monitoring for HAA5 that meets the routine monitoring sample number and location requirements for TTHM in former Section 611.680 and handling and analytical method requirements of former Section 611.685 to determine the HAA5 annual average and whether the requirements of subsection (b) of this Section apply; or
 - ii) Comply with all other provisions of this Section as if the HAA5 monitoring had been conducted and the results required compliance with subsection (b) of this Section.
 - 3) The supplier may request that the Agency approve a more representative annual data set than the data set determined under subsection (a)(1) or (a)(2) of this Section for the purpose of determining applicability of the requirements of this Section.
 - 4) The Agency may require that a supplier use a more representative annual data set than the data set determined under subsection (a)(1) or (a)(2) of this Section for the purpose of determining the applicability of the requirements of this Section.
 - 5) The supplier must submit data to the Agency on the schedule in subsections (a)(5)(A) through (a)(5)(E) of this Section.
 - A) A supplier that collected TTHM and HAA5 data under the provisions of 40 CFR Subpart M (Information Collection Rule), as

required by subsections (a)(1)(A) and (a)(2)(A) of this Section, must have submitted the results of the samples collected during the last 12 months of required monitoring under former Section 611.685 not later than December 31, 1999.

B) A supplier that had collected four consecutive quarters of HAA5 occurrence data that meets the routine monitoring sample number and location for TTHM in former 40 CFR 141.42 (1994), and handling and analytical method requirements of former Section 611.685, as allowed by subsections (a)(1)(B) and (a)(2)(B) of this Section, must have submitted that data to the Agency not later than April 30, 1999. Until the Agency has approved the data, the supplier must conduct monitoring for HAA5 using the monitoring requirements specified under subsection (a)(2)(C) of this Section.

C) A supplier that conducted monitoring for HAA5 using the monitoring requirements specified by subsections (a)(1)(C) and (a)(2)(C)(i) of this Section must have submitted TTHM and HAA5 data not later than March 31, 2000.

D) A supplier that elected to comply with all other provisions of this Section as if the HAA5 monitoring had been conducted and the results required compliance with this Section, as allowed under subsection (a)(2)(C)(ii) of this Section, must have notified the Agency in writing of its election not later than December 31, 1999.

E) If the supplier elected to request that the Agency approve a more representative data set than the data set determined under subsection (a)(2)(A) of this Section, the supplier must have submitted this request in writing not later than December 31, 1999.

6) Any supplier ~~that had~~ having either a TTHM annual average \geq (greater than or equal to) 0.064 mg/l or an HAA5 annual average \geq 0.048 mg/l during the period identified in subsections (a)(1) and (a)(2) of this Section must comply with subsection (b) of this Section.

BOARD NOTE: Former Sections 611.680 and 611.685 originally derived from 40 CFR 141.30(a), (b), and (e). USEPA removed 40 CFR 141.30 in its entirety in 2006. The Board repealed former Section 611.685 in 2007 and Section 611.680 in 2012. The references to former Sections 611.680 and 611.685 in this subsection (a) relate to use of existing monitoring data collected under those provisions as they existed before their repeal.

- 6326 b) Disinfection profiling.
- 6327
- 6328 1) Any supplier that meets the standards in subsection (a)(6) of this Section
- 6329 must ~~have developed~~~~develop~~ a disinfection profile of its disinfection
- 6330 practice for a period of up to three years. The Agency must have
- 6331 ~~determined~~~~determine~~ the period of the disinfection profile, with a
- 6332 minimum period of one year.
- 6333
- 6334 2) The supplier must have monitored~~monitor~~ daily for a period of 12
- 6335 consecutive calendar months to determine the total logs of inactivation for
- 6336 each day of operation, based on the CT_{99,9} values in Appendix B of this
- 6337 Part, as appropriate, through the entire treatment plant. The supplier must
- 6338 have begun this monitoring not later than April 1, 2000. As a minimum,
- 6339 the supplier with a single point of disinfectant application prior to entrance
- 6340 to the distribution system must have conducted~~conduct~~ the monitoring in
- 6341 subsections (b)(2)(A) through (b)(2)(D) of this Section. A supplier with
- 6342 more than one point of disinfectant application must have
- 6343 ~~conducted~~~~conduct~~ the monitoring in subsections (b)(2)(A) through
- 6344 (b)(2)(D) of this Section for each disinfection segment. The supplier must
- 6345 have monitored~~monitor~~ the parameters necessary to determine the total
- 6346 inactivation ratio, using analytical methods in Section 611.531, as follows:
- 6347
- 6348 A) The temperature of the disinfected water must have been~~be~~
- 6349 measured once per day at each residual disinfectant concentration
- 6350 sampling point during peak hourly flow.
- 6351
- 6352 B) If the supplier uses chlorine, the pH of the disinfected water must
- 6353 have been~~be~~ measured once per day at each chlorine residual
- 6354 disinfectant concentration sampling point during peak hourly flow.
- 6355
- 6356 C) The disinfectant contact times ("T") must have been~~be~~ determined
- 6357 for each day during peak hourly flow.
- 6358
- 6359 D) The residual disinfectant concentrations ("C") of the water before
- 6360 or at the first customer and prior to each additional point of
- 6361 disinfection must have been~~be~~ measured each day during peak
- 6362 hourly flow.
- 6363
- 6364 3) In lieu of the monitoring conducted under the provisions of subsection
- 6365 (b)(2) of this Section to develop the disinfection profile, the supplier may
- 6366 have elected~~elect~~ to meet the requirements of subsection (b)(3)(A) of this
- 6367 Section. In addition to the monitoring conducted under the provisions of
- 6368 subsection (b)(2) of this Section to develop the disinfection profile, the

supplier may ~~have elected~~ to meet the requirements of subsection (b)(3)(B) of this Section.

A) A PWS supplier that had three years of existing operational data may have submitted that data, a profile generated using that data, and a request that the Agency approve use of that data in lieu of monitoring under the provisions of subsection (b)(2) of this Section not later than March 31, 2000. The Agency must ~~have determined~~ determine whether the operational data is substantially equivalent to data collected under the provisions of subsection (b)(2) of this Section. The data must also ~~have been~~ be representative of Giardia lamblia inactivation through the entire treatment plant and not just of certain treatment segments. If the Agency ~~determined~~ determines that the operational data ~~was~~ is substantially equivalent, the Agency must ~~have approved~~ approve the request. Until the Agency ~~approved~~ approves this request, the system ~~was~~ is required to conduct monitoring under the provisions of subsection (b)(2) of this Section.

B) In addition to the disinfection profile generated under subsection (b)(2) of this Section, a PWS supplier that ~~had~~ has existing operational data may ~~have used~~ use that data to develop a disinfection profile for additional years. The Agency must ~~have determined~~ determine whether the operational data ~~was~~ is substantially equivalent to data collected under the provisions of subsection (b)(2) of this Section. The data must also ~~have been~~ be representative of inactivation through the entire treatment plant and not just of certain treatment segments. If the Agency ~~determined~~ determines that the operational data ~~was~~ is substantially equivalent, ~~these~~ such systems may ~~have used~~ use these additional yearly disinfection profiles to develop a benchmark under the provisions of subsection (c) of this Section.

4) The supplier must calculate the total inactivation ratio as follows:

A) If the supplier uses only one point of disinfectant application, the system may determine the total inactivation ratio for the disinfection segment based on either of the methods in subsection (b)(4)(A)(i) or (b)(4)(A)(ii) of this Section.

i) Determine one inactivation ratio ($CT_{calc}/CT_{99.9}$) before or at the first customer during peak hourly flow.

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- ii) Determine successive $CT_{\text{calc}}/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the supplier must calculate the total inactivation ratio ($\sum (CT_{\text{calc}}/CT_{99.9})$) by determining $CT_{\text{calc}}/CT_{99.9}$ for each sequence and then adding the $CT_{\text{calc}}/CT_{99.9}$ values together to determine $\sum (CT_{\text{calc}}/CT_{99.9})$.
 - B) If the supplier uses more than one point of disinfectant application before the first customer, the system must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The $(CT_{\text{calc}}/CT_{99.9})$ value of each segment and $(\sum (CT_{\text{calc}}/CT_{99.9}))$ must be calculated using the method in subsection (b)(4)(A) of this Section.
 - C) The supplier must determine the total logs of inactivation by multiplying the value calculated in subsection (b)(4)(A) or (b)(4)(B) of this Section by 3.0.
 - 5) A supplier that uses either chloramines or ozone for primary disinfection must also calculate the logs of inactivation for viruses using a method approved by the Agency.
 - 6) The supplier must retain disinfection profile data in graphic form, as a spreadsheet, or in some other format acceptable to the Agency for review as part of sanitary surveys conducted by the Agency.
 - c) Disinfection benchmarking.
 - 1) Any supplier required to develop a disinfection profile under the provisions of subsections (a) and (b) of this Section and that decides to make a significant change to its disinfection practice must consult with the Agency prior to making such change. Significant changes to disinfection practice are the following:
 - A) Changes to the point of disinfection;
 - B) Changes to the disinfectants used in the treatment plant;
 - C) Changes to the disinfection process; and

- 6455 D) Any other modification identified by the Agency.
6456
6457 2) Any supplier that is modifying its disinfection practice must calculate its
6458 disinfection benchmark using the procedure specified in subsections
6459 (c)(2)(A) and (c)(2)(B) of this Section.
6460
6461 A) For each year of profiling data collected and calculated under
6462 subsection (b) of this Section, the supplier must determine the
6463 lowest average monthly Giardia lamblia inactivation in each year
6464 of profiling data. The supplier must determine the average Giardia
6465 lamblia inactivation for each calendar month for each year of
6466 profiling data by dividing the sum of daily Giardia lamblia of
6467 inactivation by the number of values calculated for that month.
6468
6469 B) The disinfection benchmark is the lowest monthly average value
6470 (for systems with one year of profiling data) or average of lowest
6471 monthly average values (for systems with more than one year of
6472 profiling data) of the monthly logs of Giardia lamblia inactivation
6473 in each year of profiling data.
6474
6475 3) A supplier that uses either chloramines or ozone for primary disinfection
6476 must also calculate the disinfection benchmark for viruses using a method
6477 approved by the Agency.
6478
6479 4) The supplier must submit information in subsections (c)(4)(A) through
6480 (c)(4)(C) of this Section to the Agency as part of its consultation process.
6481
6482 A) A description of the proposed change;
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6484 B) The disinfection profile for Giardia lamblia (and, if necessary,
6485 viruses) under subsection (b) of this Section and benchmark as
6486 required by subsection (c)(2) of this Section; and
6487
6488 C) An analysis of how the proposed change will affect the current
6489 levels of disinfection.
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6491 BOARD NOTE: Derived from 40 CFR 141.172 (2014)(2003).

6492 (Source: Amended at 39 Ill. Reg. _____, effective _____)
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6495 SUBPART S: GROUNDWATER RULE
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6497 **Section 611.802 Groundwater Source Microbial Monitoring and Analytical Methods**

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- a) Triggered source water monitoring.
 - 1) General requirements. A GWS supplier must conduct triggered source water monitoring if the conditions in either subsections (a)(1)(A) and (a)(1)(B) or (a)(1)(A) and (a)(1)(C) of this Section exist.
 - A) The supplier does not provide at least 4-log treatment of viruses (using inactivation, removal, or an Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for each groundwater source.
 - B) Until March 31, 2016, the supplier is notified that a sample collected pursuant to Section 611.521 is total coliform-positive, and the sample is not invalidated by the Agency pursuant to Section 611.523.
 - C) Beginning April 1, 2016, the system is notified that a sample collected under Sections 611.1054 through 611.1057 is total coliform-positive and the sample is not invalidated under Section 611.1053(c).
 - 2) Sampling requirements. A GWS supplier must collect, within 24 hours after notification of the total coliform-positive sample, at least one groundwater source sample from each groundwater source in use at the time the total coliform-positive sample was collected pursuant to Section 611.521 until March 31, 2016, or collected pursuant to Sections 611.1054 through 611.1057 beginning April 1, 2016, except as provided in subsection (a)(2)(B) of this Section.
 - A) The Agency may, by a SEP issued pursuant to Section 611.110, extend the 24-hour time limit on a case-by-case basis if it determines that the supplier cannot collect the groundwater source water sample within 24 hours due to circumstances beyond the supplier's control. In the case of an extension, the Agency must specify how much time the supplier has to collect the sample.
 - B) If approved by the Agency, a supplier with more than one groundwater source may meet the requirements of this subsection (a)(2) by sampling a representative groundwater source or sources. If directed by the Agency by a SEP issued pursuant to Section 611.110, the supplier must submit for Agency approval a triggered source water monitoring plan that identifies one or more groundwater sources that are representative of each monitoring site

6542 in the system's sample siting plan pursuant to Section 611.521 and
 6543 that the system intends to use for representative sampling pursuant
 6544 to this subsection (a).
 6545

6546 C) Until March 31, 2016, a GWS supplier that serves 1,000 or fewer
 6547 people may use a repeat sample collected from a groundwater
 6548 source to meet both the requirements of Section 611.522 and to
 6549 satisfy the monitoring requirements of subsection (a)(2) of this
 6550 Section for that groundwater source only if the Agency approves
 6551 the use of E. coli as a fecal indicator for source water monitoring
 6552 pursuant to this subsection (a) by a SEP issued pursuant to Section
 6553 611.110. If the repeat sample collected from the groundwater
 6554 source is E.coli positive, the system must comply with subsection
 6555 (a)(3) of this Section.
 6556

6557 D) Beginning April 1, 2016, a GWS supplier that serves 1,000 or
 6558 fewer people may use a repeat sample collected from a
 6559 groundwater source to meet both the requirements of Subpart AA
 6560 of this Part and to satisfy the monitoring requirements of
 6561 subsection (a)(2) of this Section for that groundwater source only if
 6562 the Agency, by a SEP issued pursuant to Section 611.110,
 6563 approves the use of E. coli as a fecal indicator for source water
 6564 monitoring pursuant to this subsection (a) and approves the use of
 6565 a single sample for meeting both the triggered source water
 6566 monitoring requirements in this subsection (a) and the repeat
 6567 monitoring requirements in Section 611.1058. If the repeat sample
 6568 collected from the groundwater source is E. coli-positive, the
 6569 system must comply with subsection (a)(3) of this Section.
 6570

6571 3) Additional requirements. If the Agency does not require corrective action
 6572 pursuant to Section 611.803(a)(2) for a fecal indicator-positive source
 6573 water sample collected pursuant to subsection (a)(2) of this Section that is
 6574 not invalidated pursuant to subsection (d) of this Section, the system must
 6575 collect five additional source water samples from the same source within
 6576 24 hours after being notified of the fecal indicator-positive sample.
 6577

6578 4) Consecutive and wholesale systems.
 6579

6580 A) In addition to the other requirements of this subsection (a), a
 6581 consecutive GWS supplier that has a total coliform-positive sample
 6582 collected pursuant to Section 611.521 until March 31, 2016, or
 6583 pursuant to Sections 611.1054 through 611.1057 beginning April
 6584 1, 2016, must notify the wholesale systems within 24 hours after
 6585 being notified of the total coliform-positive sample.

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- B) In addition to the other requirements of this subsection (a), a wholesale GWS supplier must comply with the following requirements:
 - i) A wholesale GWS supplier that receives notice from a consecutive system it serves that a sample collected pursuant to Section 611.521 until March 31, 2016, or collected pursuant to Sections 611.1054 through 611.1057 beginning April 1, 2016, is total coliform-positive must, within 24 hours after being notified, collect a sample from its groundwater sources pursuant to subsection (a)(2) of this Section and analyze it for a fecal indicator pursuant to subsection (c) of this Section.
 - ii) If the sample collected pursuant to subsection (a)(4)(B)(i) of this section is fecal indicator-positive, the wholesale GWS supplier must notify all consecutive systems served by that groundwater source of the fecal indicator source water positive within 24 hours of being notified of the groundwater source sample monitoring result and must meet the requirements of subsection (a)(3) of this Section.
- 5) Exceptions to the triggered source water monitoring requirements. A GWS supplier is not required to comply with the source water monitoring requirements of subsection (a) of this Section if either of the following conditions exists:
 - A) The Agency determines, and documents in writing, by a SEP issued pursuant to Section 611.110, that the total coliform-positive sample collected pursuant to Section 611.521 until March 31, 2016, or collected pursuant to Sections 611.1054 through 611.1057 beginning April 1, 2016, is caused by a distribution system deficiency; or
 - B) The total coliform-positive sample collected pursuant to Section 611.521 until March 31, 2016, or collected pursuant to Sections 611.1054 through 611.1057 beginning April 1, 2016, is collected at a location that meets Agency criteria for distribution system conditions that will cause total coliform-positive samples.
- b) Assessment source water monitoring. If directed by the Agency by a SEP issued pursuant to Section 611.110, a GWS supplier must conduct assessment source

6629 water monitoring that meets Agency-determined requirements for such
 6630 monitoring. A GWS supplier conducting assessment source water monitoring
 6631 may use a triggered source water sample collected pursuant to subsection (a)(2) of
 6632 this Section to meet the requirements of subsection (b) of this Section. Agency-
 6633 determined assessment source water monitoring requirements may include the
 6634 following:

- 6635
- 6636 1) Collection of a total of 12 groundwater source samples that represent each
 6637 month the system provides groundwater to the public;
- 6638
- 6639 2) Collection of samples from each well, unless the system obtains written
 6640 Agency approval to conduct monitoring at one or more wells within the
 6641 GWS that are representative of multiple wells used by that system and
 6642 which draw water from the same hydrogeologic setting;
- 6643
- 6644 3) Collection of a standard sample volume of at least 100 ml for fecal
 6645 indicator analysis, regardless of the fecal indicator or analytical method
 6646 used;
- 6647
- 6648 4) Analysis of all groundwater source samples using one of the analytical
 6649 methods listed in subsection (c)(2) of this Section for the presence of E.
 6650 coli, enterococci, or coliphage;
- 6651
- 6652 5) Collection of groundwater source samples at a location prior to any
 6653 treatment of the groundwater source unless the Agency approves a
 6654 sampling location after treatment; and
- 6655
- 6656 6) Collection of groundwater source samples at the well itself, unless the
 6657 system's configuration does not allow for sampling at the well itself and
 6658 the Agency approves an alternate sampling location by a SEP issued
 6659 pursuant to Section 611.110 that is representative of the water quality of
 6660 that well.

6661

6662 c) Analytical methods.

6663

- 6664 1) A GWS supplier subject to the source water monitoring requirements of
 6665 subsection (a) of this Section must collect a standard sample volume of at
 6666 least 100 ml for fecal indicator analysis, regardless of the fecal indicator
 6667 or analytical method used.
- 6668
- 6669 2) A GWS supplier must analyze all groundwater source samples collected
 6670 pursuant to subsection (a) of this Section using one of the analytical
 6671 methods listed in subsections (c)(2)(A) through (c)(2)(C) of this Section,

6672 each incorporated by reference in Section 611.102, or alternative methods
 6673 approved by the Agency pursuant to Section 611.480, subject to the
 6674 limitations of subsection (c)(2)(D) of this Section, for the presence of E.
 6675 coli, enterococci, or coliphage:
 6676

- 6677 A) E. coli:
- 6678 i) ~~Autoanalysis-Colilert® Test System~~, Standard Methods,
 6679 20th, 21st, or 22nd ed., Method 9223 B.
 - 6680 ii) Colisure™ Test, Standard Methods, 20th, 21st, or 22nd ed.,
 6681 Method 9223 B.
 - 6682 iii) Membrane Filter Method with MI Agar, USEPA Method
 6683 1604.
 - 6684 iv) m-ColiBlue24 Test.
 - 6685 v) E*Colite Test.
 - 6686 vi) EC-MUG, Standard Methods, 20th or 22nd ed., Method 9221
 6687 F.
 - 6688 vii) NA-MUG, Standard Methods, 20th ed., Method 9222 G.
 - 6689 viii) Colilert-18® Test, Standard Methods, 20th, 21st, or 22nd ed.,
 6690 Method 9223 B.
 - 6691 ix) ReadyCult® 2007.
 - 6692 x) Modified Colitag™ Method.
 - 6693 xi) Chromocult® Method.
 - 6694 xii) Tecta EC/TC P-A Test.

6695 BOARD NOTE: EC-MUG (Standard Methods, Method 9221F) or
 6696 NA-MUG (Standard Methods, Method 9222G) can be used for E.
 6697 coli testing step, as described in Section 611.526(f)(1) or (f)(2)
 6698 after use of Standard Methods, 18th, 19th, 20th, or 21st ed., Method
 6699 9221 B, 9221 D, 9222 B, or 9222 C. USEPA added Standard
 6700 Methods, 21st ed., Method 9223 B as an approved alternative
 6701 method for E. coli on June 3, 2008 (at 73 Fed. Reg. 31616).
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6715 USEPA added Readycult® 2007, Modified Colitag™ Method, and
 6716 Chromocult® Method as approved alternative methods for E. coli
 6717 on June 8, 2010 (at 75 Fed. Reg. 32295). USEPA added Standard
 6718 Methods, 22nd ed., Methods 9221 F and 9223 B as approved
 6719 alternative methods for E. coli in appendix A to subpart C of 40
 6720 CFR 141 on May 31, 2013 (at 78 Fed. Reg. 32558). USEPA
 6721 added Standard Methods Online, Method 9221 F-06 and 9223 B-
 6722 04 and Tecta EC/TC P-A Test as approved alternative methods for
 6723 E. coli in appendix A to subpart C of 40 CFR 141 on June 19, 2014
 6724 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed.,
 6725 Methods 9223 B and 9221 F are the same versions as Standard
 6726 Methods Online, Methods 9223 B-04 and 9221 F-06, the Board
 6727 has not listed the Standard Methods Online versions separately.
 6728

6729 B) Enterococci:

- 6730
- 6731 i) Multiple-Tube Technique, Standard Methods, 20th ed.,
 - 6732 Method 9230 B or Standard Methods Online, Method 9230
 - 6733 B-04.
 - 6734
 - 6735 ii) Membrane Filter Technique, Standard Methods, 20th ed.,
 - 6736 Method 9230 C, and USEPA Method 1600.
 - 6737

6738 BOARD NOTE: The holding time and temperature for
 6739 groundwater samples are specified in subsection (c)(2)(D)
 6740 of this Section, rather than as specified in Section 8 of
 6741 USEPA Method 1600.

- 6742
- 6743 iii) Enterolert.
- 6744

6745 BOARD NOTE: Medium is available through IDEXX
 6746 Laboratories, Inc., at the address set forth in Section
 6747 611.102(b). Preparation and use of the medium must be as
 6748 set forth in the article that embodies the method as
 6749 incorporated by reference in Section 611.102(b).

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6751 BOARD NOTE: USEPA added Standard Methods Online,
 6752 Method 9230 B-04 as an approved alternative method for
 6753 enterococci on June 3, 2008 (at 73 Fed. Reg. 31616).

6754 C) Coliphage:

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- i) Two-Step Enrichment Presence-Absence Procedure, USEPA Method 1601 or Charm Fast Phage.
 - ii) Single Agar Layer Procedure, USEPA Method 1602.
- D) Limitation on methods use. The time from sample collection to initiation of analysis may not exceed 30 hours. The GWS supplier is encouraged but is not required to hold samples below 10°C during transit.
- 6767 d) Invalidation of a fecal indicator-positive groundwater source sample.
- 6768
- 1) A GWS supplier may obtain Agency invalidation of a fecal indicator-positive groundwater source sample collected pursuant to subsection (a) of this Section only under either of the following conditions:
 - 6769 A) The supplier provides the Agency with written notice from the
 - 6770 laboratory that improper sample analysis occurred; or
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 - 6772
 - 6773 B) The Agency determines and documents in writing by a SEP issued
 - 6774 pursuant to Section 611.110 that there is substantial evidence that a
 - 6775 fecal indicator-positive groundwater source sample is not related to
 - 6776 source water quality.
 - 6777
 - 6778 2) If the Agency invalidates a fecal indicator-positive groundwater source
 - 6779 sample, the GWS supplier must collect another source water sample
 - 6780 pursuant to subsection (a) of this Section within 24 hours after being
 - 6781 notified by the Agency of its invalidation decision, and the supplier must
 - 6782 have it analyzed for the same fecal indicator using the analytical methods
 - 6783 in subsection (c) of this Section. The Agency may extend the 24-hour
 - 6784 time limit on a case-by-case basis if the supplier cannot collect the source
 - 6785 water sample within 24 hours due to circumstances beyond its control. In
 - 6786 the case of an extension, the Agency must specify how much time the
 - 6787 system has to collect the sample.
 - 6788
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- 6792 e) Sampling location.
- 6793
- 1) Any groundwater source sample required pursuant to subsection (a) of this
 - 6794 Section must be collected at a location prior to any treatment of the
 - 6795 groundwater source unless the Agency approves a sampling location after
 - 6796 treatment.
 - 6797
 - 6798

- 6799 2) If the supplier's system configuration does not allow for sampling at the
6800 well itself, it may collect a sample at an Agency-approved location to meet
6801 the requirements of subsection (a) of this Section if the sample is
6802 representative of the water quality of that well.
6803
- 6804 f) New sources. If directed by the Agency by a SEP issued pursuant to Section
6805 611.110, a GWS supplier that places a new groundwater source into service after
6806 November 30, 2009 must conduct assessment source water monitoring pursuant
6807 to subsection (b) of this Section. If directed by the SEP, the system must begin
6808 monitoring before the groundwater source is used to provide water to the public.
6809
- 6810 g) Public Notification. A GWS supplier with a groundwater source sample collected
6811 pursuant to subsection (a) or (b) of this Section that is fecal indicator-positive and
6812 which is not invalidated pursuant to subsection (d) of this Section, including a
6813 consecutive system supplier served by the groundwater source, must conduct
6814 public notification pursuant to Section 611.902.
6815
- 6816 h) Monitoring Violations. A failure to meet the requirements of subsections (a)
6817 through (f) of this Section is a monitoring violation that requires the GWS
6818 supplier to provide public notification pursuant to Section 611.904.
6819

6820 BOARD NOTE: Derived from 40 CFR 141.402 and appendix A to subpart C of 40 CFR
6821 141 (2014)(2013).

6822
6823 (Source: Amended at 39 Ill. Reg. _____, effective _____)
6824

6825 SUBPART U: CONSUMER CONFIDENCE REPORTS
6826

6827 **Section 611.883 Content of the Reports**
6828

- 6829 a) Each CWS must provide to its customers an annual report that contains the
6830 information specified in this Section and Section 611.884.
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- 6832 b) Information on the source of the water delivered.
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- 6834 1) Each report must identify the sources of the water delivered by the CWS
6835 by providing information on the following:
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- 6837 A) The type of the water (e.g., surface water, groundwater); and
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- 6839 B) The commonly used name (if any) and location of the body (or
6840 bodies) of water.
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- 2) If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the Agency, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the Agency or written by the supplier .
 - c) Definitions.
 - 1) Each report must include the following definitions:
 - A) Maximum Contaminant Level Goal or MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

BOARD NOTE: Although an MCLG is not an NPDWR that the Board must include in the Illinois SDWA regulations, the use of this definition is mandatory where the term "MCLG" is defined.
 - B) Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
 - 2) A report for a CWS operating under relief from an NPDWR issued under Section 611.111, 611.112, 611.130, or 611.131 must include the following definition: "Variances, Adjusted Standards, and Site-specific Rules: State permission not to meet an MCL or a treatment technique under certain conditions."
 - 3) A report that contains data on contaminants that USEPA regulates using any of the following terms must include the applicable definitions:
 - A) Treatment technique: A required process intended to reduce the level of a contaminant in drinking water.
 - B) Action level: The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
 - C) Maximum residual disinfectant level goal or MRDLG: The level of a drinking water disinfectant below which there is no known or

6885 expected risk to health. MRDLGs do not reflect the benefits of the
6886 use of disinfectants to control microbial contaminants.

6887
6888 BOARD NOTE: Although an MRDLG is not an NPDWR that the
6889 Board must include in the Illinois SDWA regulations, the use of
6890 this definition is mandatory where the term "MRDLG" is defined.

6891
6892 D) Maximum residual disinfectant level or MRDL: The highest level
6893 of a disinfectant allowed in drinking water. There is convincing
6894 evidence that addition of a disinfectant is necessary for control of
6895 microbial contaminants.

6896
6897 4) A report that contains information regarding a Level 1 or Level 2
6898 assessment required under Subpart AA of this Part must include the
6899 applicable of the following definitions:

6900
6901 A) "Level 1 assessment: A Level 1 assessment is a study of the water
6902 system to identify potential problems and determine (if possible)
6903 why total coliform bacteria have been found in our water system."

6904
6905 B) "Level 2 assessment: A Level 2 assessment is a very detailed
6906 study of the water system to identify potential problems and
6907 determine (if possible) why an E. coli MCL violation has occurred
6908 or why total coliform bacteria have been found in our water system
6909 on multiple occasions."

6910
6911 d) Information on detected contaminants.

6912
6913 1) This subsection (d) specifies the requirements for information to be
6914 included in each report for contaminants subject to mandatory monitoring
6915 (except Cryptosporidium). It applies to the following:

6916
6917 A) Contaminants subject to an MCL, action level, MRDL, or
6918 treatment technique (regulated contaminants);

6919
6920 B) Contaminants for which monitoring is required by USEPA
6921 pursuant to 40 CFR 141.40~~Section 611.510~~ (unregulated
6922 contaminants); and

6923
6924 C) Disinfection byproducts or microbial contaminants for which
6925 monitoring is required by Section 611.382 and Subpart L of this
6926 Part, except as provided under subsection (e)(1) of this Section,
6927 and which are detected in the finished water.

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- 2) The data relating to these contaminants must be displayed in one table or in several adjacent tables. Any additional monitoring results that a CWS chooses to include in its report must be displayed separately.
 - 3) The data must have been derived from data collected to comply with monitoring and analytical requirements during calendar year 1998 for the first report and must be derived from the data collected in subsequent calendar years , except that the following requirements also apply:
 - A) Where a system is allowed to monitor for regulated contaminants less often than once a year, the tables must include the date and results of the most recent sampling, and the report must include a brief statement indicating that the data presented in the report is from the most recent testing done in accordance with the regulations. No data older than five years need be included.
 - B) Results of monitoring in compliance with Section 611.382 and Subpart L need only be included for five years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.
 - 4) For detected regulated contaminants (listed in Appendix A of this Part), the tables must contain the following:
 - A) The MCL for that contaminant expressed as a number equal to or greater than 1.0 (as provided in Appendix A of this Part);
 - B) The federal Maximum Contaminant Level Goal (MCLG) for that contaminant expressed in the same units as the MCL;
 - C) If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report must include the definitions for treatment technique or action level, as appropriate, specified in subsection (c)(3) of this Section;
 - D) For contaminants subject to an MCL, except turbidity, total coliforms, fecal coliforms, and E. coli, the highest contaminant level used to determine compliance with an NPDWR, and the range of detected levels, as follows:

- 6971 i) When compliance with the MCL is determined annually or
6972 less frequently: the highest detected level at any sampling
6973 point and the range of detected levels expressed in the same
6974 units as the MCL.
- 6975
- 6976 ii) When compliance with the MCL is determined by
6977 calculating a running annual average of all samples taken at
6978 a monitoring location: the highest average of any of the
6979 monitoring locations and the range of all monitoring
6980 locations expressed in the same units as the MCL. For the
6981 MCLs for TTHM and HAA5 in Section 611.312(b)(2), the
6982 supplier must include the highest locational running annual
6983 average for TTHM and HAA5 and the range of individual
6984 sample results for all monitoring locations expressed in the
6985 same units as the MCL. If results from more than one
6986 location exceed the TTHM or HAA5 MCL, the supplier
6987 must include the locational running annual average for each
6988 location whose results exceed the MCL.
- 6989
- 6990 iii) When compliance with the MCL is determined on a
6991 system-wide basis by calculating a running annual average
6992 of all samples at all monitoring locations: the average and
6993 range of detection expressed in the same units as the MCL.
6994 The supplier is required to include individual sample results
6995 for the IDSE conducted under Subpart W of this Part when
6996 determining the range of TTHM and HAA5 results to be
6997 reported in the annual consumer confidence report for the
6998 calendar year that the IDSE samples were taken.
- 6999

7000 BOARD NOTE to subsection (d)(4)(D): When rounding of results
7001 to determine compliance with the MCL is allowed by the
7002 regulations, rounding should be done prior to multiplying the
7003 results by the factor listed in Appendix A of this Part; derived from
7004 40 CFR 153 (2014)(2013).

- 7005
- 7006 E) For turbidity the following:
- 7007
- 7008 i) When it is reported pursuant to Section 611.560: the
7009 highest average monthly value.
- 7010
- 7011 ii) When it is reported pursuant to the requirements of Section
7012 611.211(b): the highest monthly value. The report must
7013 include an explanation of the reasons for measuring

- 7014 turbidity.
 7015
 7016 iii) When it is reported pursuant to Section 611.250, 611.743,
 7017 or 611.955(b): the highest single measurement and the
 7018 lowest monthly percentage of samples meeting the turbidity
 7019 limits specified in Section 611.250, 611.743, or 611.955(b)
 7020 for the filtration technology being used. The report must
 7021 include an explanation of the reasons for measuring
 7022 turbidity;
 7023
 7024 F) For lead and copper the following: the 90th percentile value of the
 7025 most recent round of sampling and the number of sampling sites
 7026 exceeding the action level;
 7027
 7028 G) For total coliform analytical results until March 31, 2016, the
 7029 following:
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 7031 i) The highest monthly number of positive samples for
 7032 systems collecting fewer than 40 samples per month; or
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 7034 ii) The highest monthly percentage of positive samples for
 7035 systems collecting at least 40 samples per month;
 7036
 7037 H) For fecal coliform and E. coli until March 31, 2016, the following:
 7038 the total number of positive samples;
 7039
 7040 I) The likely sources of detected contaminants to the best of the
 7041 supplier's knowledge. Specific information regarding
 7042 contaminants may be available in sanitary surveys and source
 7043 water assessments, and must be used when available to the
 7044 supplier. If the supplier lacks specific information on the likely
 7045 source, the report must include one or more of the typical sources
 7046 for that contaminant listed in Appendix G of this Part that are most
 7047 applicable to the CWS; and
 7048
 7049 J) For E. coli analytical results under Subpart AA of this Part, the
 7050 total number of positive samples.
 7051
 7052 5) If a CWS distributes water to its customers from multiple hydraulically
 7053 independent distribution systems that are fed by different raw water
 7054 sources, the table must contain a separate column for each service area and
 7055 the report must identify each separate distribution system. Alternatively, a
 7056 CWS may produce separate reports tailored to include data for each

- 7057 service area.
7058
7059 6) The tables must clearly identify any data indicating violations of MCLs,
7060 MRDLs, or treatment techniques, and the report must contain a clear and
7061 readily understandable explanation of the violation including the
7062 following: the length of the violation, the potential adverse health effects,
7063 and actions taken by the CWS to address the violation. To describe the
7064 potential health effects, the CWS must use the relevant language of
7065 Appendix A of this Part.
7066
7067 7) For detected unregulated contaminants for which monitoring is required
7068 by USEPA pursuant to 40 CFR 141.40 (except *Cryptosporidium*), the
7069 tables must contain the average and range at which the contaminant was
7070 detected. The report may include a brief explanation of the reasons for
7071 monitoring for unregulated contaminants.
7072
7073 e) Information on *Cryptosporidium*, radon, and other contaminants as follows:
7074
7075 1) If the CWS has performed any monitoring for *Cryptosporidium*, including
7076 monitoring performed to satisfy the requirements of Subpart L of this Part,
7077 that indicates that *Cryptosporidium* may be present in the source water or
7078 the finished water, the report must include the following:
7079
7080 A) A summary of the results of the monitoring; and
7081
7082 B) An explanation of the significance of the results.
7083
7084 2) If the CWS has performed any monitoring for radon that indicates that
7085 radon may be present in the finished water, the report must include the
7086 following:
7087
7088 A) The results of the monitoring; and
7089
7090 B) An explanation of the significance of the results.
7091
7092 3) If the CWS has performed additional monitoring that indicates the
7093 presence of other contaminants in the finished water, the report must
7094 include the following:
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7096 A) The results of the monitoring; and
7097
7098 B) An explanation of the significance of the results noting the
7099 existence of any health advisory or proposed regulation.

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- f) Compliance with an NPDWR. In addition to the requirements of subsection (d)(6) of this Section, the report must note any violation that occurred during the year covered by the report of a requirement listed below, and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the CWS has taken to correct the violation.
 - 1) Monitoring and reporting of compliance data.
 - 2) Filtration and disinfection prescribed by Subpart B of this Part. For CWSs that have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes that constitutes a violation, the report must include the following language as part of the explanation of potential adverse health effects: Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
 - 3) Lead and copper control requirements prescribed by Subpart G of this Part. For systems that fail to take one or more actions prescribed by Section 611.350(d), 611.351, 611.352, 611.353, or 611.354, the report must include the applicable language of Appendix A of this Part for lead, copper, or both.
 - 4) Treatment techniques for acrylamide and epichlorohydrin prescribed by Section 611.296. For systems that violate the requirements of Section 611.296, the report must include the relevant language from Appendix A of this Part.
 - 5) Recordkeeping of compliance data.
 - 6) Special monitoring requirements prescribed by Sections 611.510 and 611.630.
 - 7) Violation of the terms of a variance, adjusted standard, site-specific rule, or administrative or judicial order.
 - g) Variances, adjusted standards, and site-specific rules. If a system is operating under the terms of a variance, adjusted standard, or site-specific rule issued under Section 611.111, 611.112, or 611.131, the report must contain the following:
 - 1) An explanation of the reasons for the variance, adjusted standard, or site-specific rule;

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- 2) The date on which the variance, adjusted standard, or site-specific rule was issued;
 - 3) A brief status report on the steps the CWS is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance, adjusted standard, or site-specific rule; and
 - 4) A notice of any opportunity for public input in the review, or renewal, of the variance, adjusted standard, or site-specific rule.
- h) Additional information.
- 1) The report must contain a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water, including bottled water. This explanation may include the language of subsections (h)(1)(A) through (h)(1)(C) of this Section or CWSs may use their own comparable language. The report also must include the language of subsection (h)(1)(D) of this Section.
 - A) The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.
 - B) Contaminants that may be present in source water include the following:
 - i) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
 - ii) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;
 - iii) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

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- iv) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and
 - v) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.
- C) In order to ensure that tap water is safe to drink, USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. United States Food and Drug Administration (USFDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.
- D) Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA Safe Drinking Water Hotline (800-426-4791).
- 2) The report must include the telephone number of the owner, operator, or designee of the CWS as a source of additional information concerning the report.
 - 3) In communities with a large proportion of non-English speaking residents, as determined by the Agency, the report must contain information in the appropriate languages regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.
 - 4) The report must include information about opportunities for public participation in decisions that may affect the quality of the water.
 - 5) The CWS may include such additional information as it deems necessary for public education consistent with, and not detracting from, the purpose of the report.
 - 6) Suppliers required to comply with Subpart S of this Part.

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- A) Any GWS supplier that receives written notice from the Agency of a significant deficiency or which receives notice from a laboratory of a fecal indicator-positive groundwater source sample that is not invalidated by the Agency pursuant to Section 611.802(d) must inform its customers of any significant deficiency that is uncorrected at the time of the next report or of any fecal indicator-positive groundwater source sample in the next report. The supplier must continue to inform the public annually until the Agency, by a SEP issued pursuant to Section 611.110, determines that particular significant deficiency is corrected or the fecal contamination in the groundwater source is addressed pursuant to Section 611.803(a). Each report must include the following information:
 - i) The nature of the particular significant deficiency or the source of the fecal contamination (if the source is known) and the date the significant deficiency was identified by the Agency or the dates of the fecal indicator-positive groundwater source samples;
 - ii) Whether or not the fecal contamination in the groundwater source has been addressed pursuant to Section 611.803(a) and the date of such action;
 - iii) For each significant deficiency or fecal contamination in the groundwater source that has not been addressed pursuant to Section 611.803(a), the Agency-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed; and
 - iv) If the system receives notice of a fecal indicator-positive groundwater source sample that is not invalidated by the Agency pursuant to Section 611.802(d), the potential health effects using the health effects language of Appendix A of this Part.

- B) If directed by the Agency by a SEP issued pursuant to Section 611.110, a supplier with significant deficiencies that have been corrected before the next report is issued must inform its customers of the significant deficiency, how the deficiency was corrected, and the date of correction pursuant to subsection (h)(6)(A) of this Section.

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- 7) Suppliers required to comply with Subpart AA of this Part.
- A) Any supplier required to comply with the Level 1 assessment requirement or a Level 2 assessment requirement that is not due to an E. coli MCL violation must include in the report the text found in subsections (h)(7)(A)(i) and (h)(7)(A)(ii) or (h)(7)(A)(i) and (h)(7)(A)(iii) of this Section, as appropriate, filling in the blanks accordingly and the text found in subsection (h)(7)(A)(iv) of this Section, if appropriate.
- i) "Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments."
 - ii) "During the past year we were required to conduct [insert number of ~~Level~~level 1 assessments] Level 1 assessment(s). [insert number of level 1 assessments] Level 1 assessment(s) were completed. In addition, we were required to take [insert number of corrective actions] corrective actions and we completed [insert number of corrective actions] of these actions."
 - iii) "During the past year [insert number of Level 2 assessments] Level 2 assessments were required to be completed for our water system. [insert number of Level 2 assessments] Level 2 assessments were completed. In addition, we were required to take [insert number of corrective actions] corrective actions and we completed [insert number of corrective actions] of these actions."
 - iv) Any supplier that has failed to complete all the required assessments or correct all identified sanitary defects is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate: "During the past year we failed to conduct all

of the required assessment(s)." or "During the past year we failed to correct all identified defects that were found during the assessment."

- B) Any supplier required to conduct a Level 2 assessment due to an E. coli MCL violation must include in the report the text found in subsections (h)(7)(B)(i) and (h)(7)(B)(ii) of this Section, filling in the blanks accordingly and the appropriate alternative text found in subsection (h)(7)(B)(ii) of this Section, if appropriate.
 - i) "E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments."
 - ii) "We were required to complete a Level 2 assessment because we found E. coli in our water system. In addition, we were required to take [insert number of corrective actions] corrective actions and we completed [insert number of corrective actions] of these actions."
 - iii) Any supplier that has failed to complete the required assessment or correct all identified sanitary defects is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate: "We failed to conduct the required assessment." or "We failed to correct all sanitary defects that were identified during the assessment that we conducted."
- C) If a supplier detects E. coli and has violated the E. coli MCL, in addition to completing the table, as required in subsection (d)(4) of this Section, the supplier must include one or more of the following statements to describe any noncompliance, as applicable:

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- 7358 i) "We had an E. coli-positive repeat sample following a total
 7359 coliform-positive routine sample."
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 7361 ii) "We had a total coliform-positive repeat sample following
 7362 an E. coli-positive routine sample."
 7363
 7364 iii) "We failed to take all required repeat samples following an
 7365 E. coli-positive routine sample."
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 7367 iv) "We failed to test for E. coli when any repeat sample tested
 7368 positive for total coliform."
 7369
 7370 D) If a supplier detects E. coli and has not violated the E. coli MCL,
 7371 in addition to completing the table as required in subsection (d)(4)
 7372 of this Section, the supplier may include a statement that explains
 7373 that, although ~~it has, they have~~ detected E. coli, ~~it is~~ they are not in
 7374 violation of the E. coli MCL.
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7376 BOARD NOTE: Derived from 40 CFR 141.153 (2014)(2013).

7377 (Source: Amended at 39 Ill. Reg. _____, effective _____)
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7380 **Section 611.884 Required Additional Health Information**
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- 7382 a) All reports must prominently display the following language: "Some people may
 7383 be more vulnerable to contaminants in drinking water than the general population.
 7384 Immuno-compromised persons such as persons with cancer undergoing
 7385 chemotherapy, persons who have undergone organ transplants, people with
 7386 HIV/AIDS or other immune system disorders, some elderly, and infants can be
 7387 particularly at risk from infections. These people should seek advice about
 7388 drinking water from their health care providers. USEPA or Centers for Disease
 7389 Control and Prevention guidelines on appropriate means to lessen the risk of
 7390 infection by Cryptosporidium and other microbial contaminants are available
 7391 from the USEPA Safe Drinking Water Hotline (800-426-4791)."
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 7393 b) A supplier that detects arsenic above 0.005 mg/ℓ and up to and including 0.010
 7394 mg/ℓ must do the following:
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 7396 1) The supplier must include in its report a short informational statement
 7397 about arsenic, using the following language: "While your drinking water
 7398 meets USEPA's standard for arsenic, it does contain low levels of arsenic.
 7399 USEPA's standard balances the current understanding of arsenic's possible
 7400 health effects against the costs of removing arsenic from drinking water."

7401 USEPA continues to research the health effects of low levels of arsenic,
7402 which is a naturally-occurring mineral known to cause cancer in humans
7403 at high concentrations and is linked to other health effects such as skin
7404 damage and circulatory problems."; or
7405

7406 2) The supplier may write its own educational statement, but only in
7407 consultation with the Agency.
7408

7409 c) A supplier that detects nitrate at levels above 5 mg/ℓ, but below the MCL, must
7410 do the following:
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7412 1) The supplier must include a short informational statement about the
7413 impacts of nitrate on children, using the following language: "Nitrate in
7414 drinking water at levels above 10 ppm is a health risk for infants of less
7415 than six months of age. High nitrate levels in drinking water can cause
7416 blue baby syndrome. Nitrate levels may rise quickly for short periods of
7417 time because of rainfall or agricultural activity. If you are caring for an
7418 infant you should ask advice from your health care provider"; or
7419

7420 2) The CWS supplier may write its own educational statement, but only in
7421 consultation with the Agency.
7422

7423 d) Every report must include the following lead-specific information:
7424

7425 1) A short informational statement about lead in drinking water and its
7426 effects on children. The statement must include the following
7427 information:
7428

7429 If present, elevated levels of lead can cause serious health
7430 problems, especially for pregnant women and young children.
7431 Lead in drinking water is primarily from materials and components
7432 associated with service lines and home plumbing. [NAME OF
7433 SUPPLIER] is responsible for providing high quality drinking
7434 water, but cannot control the variety of materials used in plumbing
7435 components. When your water has been sitting for several hours,
7436 you can minimize the potential for lead exposure by flushing your
7437 tap for 30 seconds to two minutes before using water for drinking
7438 or cooking. If you are concerned about lead in your water, you
7439 may wish to have your water tested. Information on lead in
7440 drinking water, testing methods, and steps you can take to
7441 minimize exposure is available from the Safe Drinking Water
7442 Hotline or at <http://www.epa.gov/safewater/lead>.
7443

- 7444 2) A supplier may write its own educational statement, but only in
7445 consultation with the Agency.
7446
- 7447 e) A CWS supplier that detects TTHM above 0.080 mg/l, but below the MCL in
7448 Section 611.312, as an annual average, monitored and calculated under the
7449 provisions of former Section 611.680, must include the health effects language
7450 prescribed by Appendix A of this Part.
7451

7452 BOARD NOTE: Former Section 611.680 originally derived from 40 CFR
7453 141.30(a) and (b). USEPA removed 40 CFR 141.30 in its entirety in 2006. The
7454 Board repealed former Section 611.680 in 2012. The references to former Section
7455 611.680 in this subsection (e) relate to use of existing monitoring data collected
7456 under those provisions as they existed before their repeal.
7457

7458 BOARD NOTE: Derived from 40 CFR 141.154 (2014)(2012).
7459

7460 (Source: Amended at 39 Ill. Reg. _____, effective _____)
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7462 **SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS**
7463

7464 **Section 611.901 General Public Notification Requirements**
7465

7466 The requirements of this Subpart V replace former notice requirements.
7467

- 7468 a) Who must give public notice. Each owner or operator of a public water system (a
7469 CWS, an NTNCWS, or a transient non-CWS) must give notice for all violations
7470 of an NPDWR and for other situations, as listed in this subsection (a). The term
7471 "NPDWR violation" is used in this Subpart V to include violations of an MCL, an
7472 MRDL, a treatment technique, monitoring requirements, or a testing procedure set
7473 forth in this Part. Appendix G to this Part identifies the tier assignment for each
7474 specific violation or situation requiring a public notice.
7475

- 7476 1) NPDWR violations.
7477

- 7478 A) A failure to comply with an applicable MCL or MRDL.
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7480 B) A failure to comply with a prescribed treatment technique.
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7482 C) A failure to perform water quality monitoring, as required by this
7483 Part.
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7485 D) A failure to comply with testing procedures as prescribed by this
7486 Part.

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- 2) Relief equivalent to a variance and exemptions under sections 1415 and 1416 of SDWA.
 - A) Operation under relief equivalent to a SDWA section 1415 variance, under Section 611.111, or a SDWA 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 1415 variance, under Section 611.111, or a SDWA 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 exceedence of the nitrate MCL by a non-CWS, where granted permission by the Agency under Section 611.300(d).
 - C) An exceedence of the secondary fluoride standard of Section 611.858.
 - D) The availability of unregulated contaminant monitoring data collected as required by USEPA pursuant to 40 CFR 141.40.
 - 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 V, not already listed in Appendix G of this Part.

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.

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- 7532 2) Tier 2 public notice: required for all other NPDWR violations and
- 7533 situations with potential to have serious adverse effects on human health.
- 7534
- 7535 3) Tier 3 public notice: required for all other NPDWR violations and
- 7536 situations not included in Tier 1 and Tier 2.

c) Who must receive notice.

- 7537
- 7538
- 7539 1) Each PWS supplier must provide public notice to persons served by the
- 7540 water supplier, in accordance with this Subpart V. A PWS supplier that
- 7541 sells or otherwise provides drinking water to another PWS supplier (i.e., to
- 7542 a consecutive system) is required to give public notice to the owner or
- 7543 operator of the consecutive system; the consecutive system supplier is
- 7544 responsible for providing public notice to the persons it serves.
- 7545
- 7546 2) If a PWS supplier has a violation in a portion of the distribution system
- 7547 that is physically or hydraulically isolated from other parts of the
- 7548 distribution system, the Agency may allow the system to limit distribution
- 7549 of the public notice to only persons served by that portion of the system
- 7550 that is out of compliance. Permission by the Agency for limiting
- 7551 distribution of the notice must be granted in writing, by a SEP issued
- 7552 pursuant to Section 611.110.
- 7553
- 7554 3) A copy of the notice must also be sent to the Agency, in accordance with
- 7555 the requirements under Section 611.840(d).
- 7556

7557 BOARD NOTE: Derived from 40 CFR 141.201 (2014)(2013).

7558 (Source: Amended at 39 Ill. Reg. _____, effective _____)

7561 **Section 611.907 Special Notice of the Availability of Unregulated Contaminant Monitoring**

7562 **Results**

- 7563
- 7564 a) When to give special notice. The owner or operator of a CWS supplier or an
- 7565 NTNCWS supplier required to monitor for unregulated contaminants by USEPA
- 7566 pursuant to 40 CFR 141.40 under Section 611.510 must notify persons served by
- 7567 the supplier of the availability of the results of such sampling no later than 12
- 7568 months after the monitoring results are known.
- 7569
- 7570 b) The form and manner of a special notice. The form and manner of the public
- 7571 notice must follow the requirements for a Tier 3 public notice prescribed in
- 7572 Sections 611.904(c), (d)(1), and (d)(3). The notice must also identify a person

7573 and provide the telephone number to contact for information on the monitoring
7574 results.

7575
7576 BOARD NOTE: Derived from 40 CFR 141.207 (2014)(2002).

7577
7578 (Source: Amended at 39 Ill. Reg. _____, effective _____)

7579
7580 SUBPART X: ENHANCED FILTRATION AND DISINFECTION –
7581 SYSTEMS SERVING FEWER THAN 10,000 PEOPLE

7582
7583 **Section 611.953 Disinfection Profile**

- 7584
- 7585 a) Applicability. A disinfection profile is a graphical representation of a system's
7586 level of Giardia lamblia or virus inactivation measured during the course of a
7587 year. A Subpart B community or non-transient non-community water system that
7588 serves fewer than 10,000 persons must develop a disinfection profile unless the
7589 Agency, by a SEP issued pursuant to Section 611.110, determines that a profile is
7590 unnecessary. The Agency may approve the use of a more representative data set
7591 for disinfection profiling than the data set required under subsections (c) through
7592 (g) of this Section.
 - 7593
 - 7594 b) Determination that a disinfection profile is not necessary. The Agency may only
7595 determine that a disinfection profile is not necessary if the system's TTHM and
7596 HAA5 levels are below 0.064 mg/l and 0.048 mg/l, respectively. To determine
7597 these levels, TTHM and HAA5 samples must have been collected after January 1,
7598 1998, during the month with the warmest water temperature, and at the point of
7599 maximum residence time in the distribution system. The Agency may, by a SEP
7600 issued pursuant to Section 611.110, approve the use of a different data set to
7601 determine these levels if it determines that the data set is representative TTHM
7602 and HAA5 data.
 - 7603
 - 7604 c) Development of a disinfection profile. A disinfection profile consists of the
7605 following three steps:
 - 7606
 - 7607 1) First, the supplier must collect data for several parameters from the plant,
7608 as discussed in subsection (d) of this Section, over the course of 12
7609 months. If the supplier serves between 500 and 9,999 persons it must
7610 have begun to collect data no later than July 1, 2003. If the supplier serves
7611 fewer than 500 persons, it must begin to collect data no later than January
7612 1, 2004.
 - 7613
 - 7614 2) Second, the supplier must use this data to calculate weekly log inactivation
7615 as discussed in subsections (e) and (f) of this Section; and

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- 3) Third, the supplier must use these weekly log inactivations to develop a disinfection profile as specified in subsection (g) of this Section.
 - d) Data required for a disinfection profile. A supplier must monitor the following parameters to determine the total log inactivation using the analytical methods in Section ~~611.531611.231~~ 611.531, once per week on the same calendar day, over 12 consecutive months:
 - 1) The temperature of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;
 - 2) If a supplier uses chlorine, the pH of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;
 - 3) The disinfectant contact times ("T") during peak hourly flow; and
 - 4) The residual disinfectant concentrations ("C") of the water before or at the first customer and prior to each additional point of disinfection during peak hourly flow.
 - e) Calculations based on the data collected. The tables in Appendix B of this Part must be used to determine the appropriate $CT_{99.9}$ value. The supplier must calculate the total inactivation ratio as follows, and multiply the value by 3.0 to determine log inactivation of *Giardia lamblia*:
 - 1) If the supplier uses only one point of disinfectant application, it must determine either of the following:
 - A) One inactivation ratio ($CT_{calc}/CT_{99.9}$) before or at the first customer during peak hourly flow; or
 - B) Successive $CT_{calc}/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the supplier must calculate the total inactivation ratio by determining $CT_{calc}/CT_{99.9}$ for each sequence and then adding the $CT_{calc}/CT_{99.9}$ values together to determine $\Sigma CT_{calc}/CT_{99.9}$.
 - 2) If the supplier uses more than one point of disinfectant application before the first customer, it must determine the $CT_{calc}/CT_{99.9}$ value of each disinfection segment immediately prior to the next point of disinfectant

7659 application, or for the final segment, before or at the first customer, during
 7660 peak hourly flow using the procedure specified in subsection (e)(1)(B) of
 7661 this Section.
 7662

- 7663 f) Use of chloramines, ozone, or chlorine dioxide as a primary disinfectant. If a
 7664 supplier uses chloramines, ozone, or chlorine dioxide for primary disinfection, the
 7665 supplier must also calculate the logs of inactivation for viruses and develop an
 7666 additional disinfection profile for viruses using methods approved by the Agency.
 7667
- 7668 g) Development and maintenance of the disinfection profile in graphic form. Each
 7669 log inactivation serves as a data point in the supplier's disinfection profile. A
 7670 supplier will have obtained 52 measurements (one for every week of the year).
 7671 This will allow the supplier and the Agency the opportunity to evaluate how
 7672 microbial inactivation varied over the course of the year by looking at all 52
 7673 measurements (the supplier's disinfection profile). The supplier must retain the
 7674 disinfection profile data in graphic form, such as a spreadsheet, which must be
 7675 available for review by the Agency as part of a sanitary survey. The supplier
 7676 must use this data to calculate a benchmark if the supplier is considering changes
 7677 to disinfection practices.
 7678

7679 BOARD NOTE: Derived from 40 CFR 141.530 through 141.536 (2014)(2003).

7680 (Source: Amended at 39 Ill. Reg. _____, effective _____)
 7681

7682
 7683 **Section 611.955 Combined Filter Effluent Turbidity Limits**
 7684

- 7685 a) Applicability. A Subpart B system supplier that serves fewer than 10,000
 7686 persons, which is required to filter, and which utilizes filtration other than slow
 7687 sand filtration or diatomaceous earth filtration must meet the combined filter
 7688 effluent turbidity requirements of subsections (b) through (d) of this Section. If
 7689 the supplier uses slow sand or diatomaceous earth filtration the supplier is not
 7690 required to meet the combined filter effluent turbidity limits of this Subpart X, but
 7691 the supplier must continue to meet the combined filter effluent turbidity limits in
 7692 Section 611.250.
 7693
- 7694 b) Combined filter effluent turbidity limits. A supplier must meet two strengthened
 7695 combined filter effluent turbidity limits.
 7696
- 7697 1) The first combined filter effluent turbidity limit is a "95th percentile"
 7698 turbidity limit that a supplier must meet in at least 95 percent of the
 7699 turbidity measurements taken each month. Measurements must continue
 7700 to be taken as described in Sections 611.531 and 611.533~~611.231 and 233~~.

7701 Monthly reporting must be completed according to Section 611.957(a).
7702 The following are the required limits for specific filtration technologies:

- 7703
- 7704 A) For a system with conventional filtration or direct filtration, the
- 7705 95th percentile turbidity value is 0.3 NTU.
- 7706
- 7707 B) For a system with any other alternative filter technology, the 95th
- 7708 percentile turbidity value is a value (not to exceed 1 NTU) to be
- 7709 determined by the Agency, by a SEP issued pursuant to Section
- 7710 611.110, based on the demonstration described in subsection (c) of
- 7711 this Section.
- 7712

7713 2) The second combined filter effluent turbidity limit is a "maximum"
7714 turbidity limit that a supplier may at no time exceed during the month.
7715 Measurements must continue to be taken as described in Sections 611.531
7716 and 611.533~~611.231 and 611.233~~. Monthly reporting must be completed
7717 according to Section 611.957(a). The following are the required limits for
7718 specific filtration technologies:

- 7719
- 7720 A) For a system with conventional filtration or direct filtration, the
- 7721 maximum turbidity value is 1 NTU.
- 7722
- 7723 B) For a system with any other alternative filter technology, the
- 7724 maximum turbidity value is a value (not to exceed 5 NTU) to be
- 7725 determined by the Agency, by a SEP issued pursuant to Section
- 7726 611.110, based on the demonstration described in subsection (c) of
- 7727 this Section.
- 7728

7729 c) Requirements for an alternative filtration system.

7730

7731 1) If a supplier's system consists of alternative filtration (filtration other than
7732 slow sand filtration, diatomaceous earth filtration, conventional filtration,
7733 or direct filtration) the supplier is required to conduct a demonstration (see
7734 tables in subsection (b) of this Section). The supplier must demonstrate to
7735 the Agency, using pilot plant studies or other means, that its system's
7736 filtration, in combination with disinfection treatment, consistently
7737 achieves the following:

- 7738
- 7739 A) 99 percent removal of *Cryptosporidium* oocysts;
- 7740
- 7741 B) 99.9 percent removal or inactivation of *Giardia lamblia* cysts; and
- 7742
- 7743 C) 99.99 percent removal or inactivation of viruses.

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- 2) This subsection (c)(2) corresponds with 40 CFR 141.552(b), which USEPA has designated as "reserved." This statement maintains structural correspondence with the corresponding federal regulation.
 - d) Requirements for a lime-softening system. If a supplier practices lime softening, the supplier may acidify representative combined filter effluent turbidity samples prior to analysis using a protocol approved by the Agency.

7753 BOARD NOTE: Derived from 40 CFR 141.550 through 141.553 (2014)(2002).

7754 (Source: Amended at 39 Ill. Reg. _____, effective _____)

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7757 **Section 611.956 Individual Filter Turbidity Requirements**

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- a) Applicability. A Subpart B system supplier that serves fewer than 10,000 persons and utilizing conventional filtration or direct filtration must conduct continuous monitoring of turbidity for each individual filter in a supplier's system. The following requirements apply to continuous turbidity monitoring:
 - 1) Monitoring must be conducted using an approved method in Section 611.531611.231;
 - 2) Calibration of turbidimeters must be conducted using procedures specified by the manufacturer;
 - 3) Results of turbidity monitoring must be recorded at least every 15 minutes;
 - 4) Monthly reporting must be completed according to Section 611.957(a); and
 - 5) Records must be maintained according to Section 611.957(b).
 - b) Failure of turbidity monitoring equipment. If there is a failure in the continuous turbidity monitoring equipment, the supplier must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is back on-line. The supplier has 14 days to resume continuous monitoring before a violation is incurred.
 - c) Special requirements for systems with two or fewer filters. If a supplier's system only consists of two or fewer filters, the supplier may conduct continuous monitoring of combined filter effluent turbidity in lieu of individual filter effluent

7787 turbidity monitoring. Continuous monitoring must meet the same requirements
 7788 set forth in subsections (a)(1) through (a)(4) and (b) of this Section.
 7789

7790 d) Follow-up action. Follow-up action is required according to the following
 7791 requirements:

7792
 7793 1) If the turbidity of an individual filter (or the turbidity of combined filter
 7794 effluent (CFE) for a system with two filters that monitor CFE in lieu of
 7795 individual filters) exceeds 1.0 NTU in two consecutive recordings 15
 7796 minutes apart, the supplier must report to the Agency by the 10th of the
 7797 following month and include the filter numbers, corresponding dates,
 7798 turbidity values that exceeded 1.0 NTU, and the cause (if known) for the
 7799 exceedences.

7800
 7801 2) If a supplier was required to report to the Agency for three months in a
 7802 row and turbidity exceeded 1.0 NTU in two consecutive recordings 15
 7803 minutes apart at the same filter (or CFE for systems with two filters that
 7804 monitor CFE in lieu of individual filters), the supplier must conduct a self-
 7805 assessment of the filters within 14 days of the day on which the filter
 7806 exceeded 1.0 NTU in two consecutive measurements for the third straight
 7807 month, unless a CPE, as specified in subsection (d)(3) of this Section, was
 7808 required. A supplier that has a system with two filters that monitor CFE in
 7809 lieu of individual filters must conduct a self assessment on both filters.
 7810 The self-assessment must consist of at least the following components:
 7811 assessment of filter performance, development of a filter profile,
 7812 identification and prioritization of factors limiting filter performance,
 7813 assessment of the applicability of corrections, and preparation of a filter
 7814 self-assessment report.

7815
 7816 3) If a supplier was required to report to the Agency for two months in a row
 7817 and turbidity exceeded 2.0 NTU in two consecutive recordings 15 minutes
 7818 apart at the same filter (or CFE for systems with two filters that monitor
 7819 CFE in lieu of individual filters), the supplier must arrange to have a
 7820 comprehensive performance evaluation (CPE) conducted by the Agency
 7821 or a third party approved by the Agency not later than 60 days following
 7822 the day the filter exceeded 2.0 NTU in two consecutive measurements for
 7823 the second straight month. If a CPE has been completed by the Agency or
 7824 a third party approved by the Agency within the 12 prior months or the
 7825 system and Agency are jointly participating in an ongoing comprehensive
 7826 technical assistance (CTA) project at the system, a new CPE is not
 7827 required. If conducted, a CPE must be completed and submitted to the
 7828 Agency no later than 120 days following the day the filter exceeded 2.0
 7829 NTU in two consecutive measurements for the second straight month.

- 7830
7831 e) Special individual filter monitoring for a lime-softening system. If a supplier's
7832 system utilizes lime softening, the supplier may apply to the Agency for
7833 alternative turbidity exceedence levels for the levels specified in subsection (d) of
7834 this Section. The supplier must be able to demonstrate to the Agency that higher
7835 turbidity levels are due to lime carryover only, and not due to degraded filter
7836 performance.
7837

7838 BOARD NOTE: Derived from 40 CFR 141.560 through 141.564 (2014)(2003).

7839 (Source: Amended at 39 Ill. Reg. _____, effective _____)
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7841
7842 SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM
7843

7844 **Section 611.1004 Source Water Monitoring Requirements: Analytical Methods**
7845

- 7846 a) Cryptosporidium. A supplier must analyze for Cryptosporidium using USEPA
7847 OGWDW Methods, Method 1623 (05), 1623.1, or 1622 (05), each incorporated
7848 by reference in Section 611.102, or alternative methods approved by the Agency
7849 pursuant to Section 611.480.
7850
- 7851 1) The supplier must analyze at least a 10 ℓ sample or a packed pellet volume
7852 of at least 2 mℓ as generated by the methods listed in subsection (a) of this
7853 Section. A supplier unable to process a 10 ℓ sample must analyze as much
7854 sample volume as can be filtered by two filters approved by USEPA for
7855 the methods listed in subsection (a) of this Section, up to a packed pellet
7856 volume of at least 2 mℓ.
7857
- 7858 2) Matrix spike (MS) samples.
7859
- 7860 A) MS samples, as required by the methods in subsection (a) of this
7861 Section, must be spiked and filtered by a laboratory approved for
7862 Cryptosporidium analysis pursuant to Section 611.1005.
7863
- 7864 B) If the volume of the MS sample is greater than 10 ℓ, the supplier
7865 may filter all but 10 ℓ of the MS sample in the field, and ship the
7866 filtered sample and the remaining 10 ℓ of source water to the
7867 laboratory. In this case, the laboratory must spike the remaining
7868 10 ℓ of water and filter it through the filter used to collect the
7869 balance of the sample in the field.
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- 7871 3) Flow cytometer-counted spiking suspensions must be used for MS
7872 samples and ongoing precision and recovery samples.

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- b) E. coli. A supplier must use methods for enumeration of E. coli in source water approved in 40 CFR 136.3(a), incorporated by reference in Section 611.102, or alternative methods approved by the Agency pursuant to Section 611.480.
 - 1) The time from sample collection to initiation of analysis may not exceed 30 hours, unless the supplier meets the condition of subsection (b)(2) of this Section.
 - 2) The Agency may, by a SEP issued pursuant to Section 611.110, approve on a case-by-case basis the holding of an E. coli sample for up to 48 hours between sample collection and initiation of analysis if it determines that analyzing an E. coli sample within 30 hours is not feasible. E. coli samples held between 30 to 48 hours must be analyzed by the ~~Autoanalysis-Colilert® Test System~~ reagent version of Standard Methods, 18th, 19th, or 20th ed., Method 9223 B, incorporated by reference in Section 611.102.
 - 3) A supplier must maintain the temperature of its samples between 0°C and 10°C during storage and transit to the laboratory.
 - 4) The supplier may use the membrane filtration, two-step procedure described in Standard Methods, 20th ed., Method 9222 D and G, incorporated by reference in Section 611.102.

BOARD NOTE: On June 3, 2008 (at 73 Fed. Reg. 31616), USEPA added appendix A to subpart C of 40 CFR 141, which authorized alternative methods to those listed for E. coli by multiple-tube technique at corresponding 40 CFR 141.402(c)(2) to allow the use of Standard Methods for the Examination of Water and Wastewater, 20th ed., Method 9222 D and G.

- c) Turbidity. A supplier must use methods for turbidity measurement approved in Section 611.531(a).

BOARD NOTE: Derived from 40 CFR 141.704 and appendix A to subpart C of 40 CFR 141 (2014)(2012).

(Source: Amended at 39 Ill. Reg. _____, effective _____)

SUBPART AA: REVISED TOTAL COLIFORM RULE

Section 611.1052 Analytical Methods and Laboratory Certification

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- a) Analytical methodology.
- 1) The standard sample volume required for analysis, regardless of analytical method used, is 100 mL.
 - 2) A supplier needs only determine the presence or absence of total coliforms and E. coli; a determination of density is not required.
 - 3) The time from sample collection to initiation of test medium incubation may not exceed 30 hours. Suppliers are encouraged but not required to hold samples below 10° C during transit.
 - 4) If water having residual chlorine (measured as free, combined, or total chlorine) is to be analyzed, sufficient sodium thiosulfate (Na₂S₂O₃) must be added to the sample bottle before sterilization to neutralize any residual chlorine in the water sample. Dechlorination procedures are addressed in section 2 of Standard Methods, 20th or 21st ed., Method 9060 A, each incorporated by reference in Section 611.102.
 - 5) The supplier must conduct total coliform and E. coli analyses in accordance with one of the following analytical methods, each incorporated by reference in Section 611.102:

BOARD NOTE: All monitoring and analyses must be done in accordance with the version of the approved method recited in this subsection (a) and incorporated by reference in Section 611.102. The methods listed are the only versions that may be used for compliance with this Subpart AA. Laboratories should be careful to use only the approved versions of the methods, as product package inserts may not be the same as the approved versions of the methods.

A) Total coliforms, lactose fermentation methods:

- i) Standard total coliform fermentation technique: sections 1 and 2 of Standard Methods, 20th, 21st, or 22nd ed., Method 9221 B; or

BOARD NOTE: Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the supplier conducts at least 25 parallel tests between lactose broth and lauryl tryptose broth using the water normally tested, and if the findings from this comparison demonstrate that the

7959 false-positive rate and false-negative rate for total
7960 coliforms, using lactose broth, is less than 10 percent.
7961 Because Standard Methods, 21st ed., Method 9221 B is the
7962 same version as Standard Methods Online 9221 B-99, the
7963 Board has not listed the Standard Methods Online version
7964 separately.

7965
7966 ii) Presence-absence (P-A) coliform test: sections 1 and 2 of
7967 Standard Methods, 20th or 21st, Method 9221 D.

7968
7969 BOARD NOTE: A multiple tube enumerative format, as
7970 described in Standard Methods, 20th or 21st, Method 9221
7971 D, is approved for this method for use in presence-absence
7972 determination under this Subpart AA. Because Standard
7973 Methods, 21st ed., Method 9221 D is the same version as
7974 Standard Methods Online 9221 D-99, the Board has not
7975 listed the Standard Methods Online version separately.
7976

7977 BOARD NOTE: USEPA added sections 1 and 2 of Standard
7978 Methods Online, Method 9221 B-06 as an approved alternative
7979 method for total coliforms in appendix A to subpart C of 40 CFR
7980 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard
7981 Methods, 22nd ed., Method 9221 B is the same version as Standard
7982 Methods Online, Method 9221 B-06, the Board has not listed the
7983 Standard Methods Online versions separately.
7984

7985 B) Total coliforms, membrane filtration methods:

7986
7987 i) Standard total coliform membrane filter procedure:
7988 Standard Methods, 20th or 21st ed., Method 9222 B or C.

7989
7990 BOARD NOTE: Because Standard Methods, 20th ed.,
7991 Methods 9222 B and C are the same version as Standard
7992 Methods Online 9222 B and C-97, the Board has not listed
7993 the Standard Methods Online version separately.
7994

7995 ii) Membrane filtration using MI medium: USEPA Method
7996 1604.

7997
7998 iii) m-ColiBlue24® Test.

7999
8000 BOARD NOTE: All filtration series must begin with
8001 membrane filtration equipment that has been sterilized by

8002 autoclaving. Exposure of filtration equipment to UV light is
8003 not adequate to ensure sterilization. Subsequent to the
8004 initial autoclaving, exposure of the filtration equipment to
8005 UV light may be used to sanitize the funnels between
8006 filtrations within a filtration series. Alternatively,
8007 membrane filtration equipment that is pre-sterilized by the
8008 manufacturer (i.e., disposable funnel units) may be used.
8009

8010 iv) Chromocult.

8011
8012 BOARD NOTE: All filtration series must begin with
8013 membrane filtration equipment that has been sterilized by
8014 autoclaving. Exposure of filtration equipment to UV light is
8015 not adequate to ensure sterilization. Subsequent to the
8016 initial autoclaving, exposure of the filtration equipment to
8017 UV light may be used to sanitize the funnels between
8018 filtrations within a filtration series. Alternatively,
8019 membrane filtration equipment that is pre-sterilized by the
8020 manufacturer (i.e., disposable funnel units) may be used.
8021

8022 C) Total coliforms, enzyme substrate methods:

8023
8024 i) Colilert® Test: Standard Methods, 20th, 21st, or 22nd ed.,
8025 Method 9223 B;

8026
8027 BOARD NOTE: Multiple-tube and multi-well enumerative
8028 formats for this method are approved for use in presence-
8029 absence determination under this Subpart AA.
8030

8031 ii) Colilert-18® Test: Standard Methods, 20th, 21st, or 22nd
8032 ed., Method 9223 B;

8033
8034 iii) Colisure™ Test®: Standard Methods, 20th, 21st, or 22nd
8035 ed., Method 9223 B;
8036

8037 BOARD NOTE: Multiple-tube and multi-well enumerative
8038 formats for this method are approved for use in presence-
8039 absence determination under this Subpart AA. Colisure™
8040 Test® results may be read after an incubation time of 24
8041 hours. Because Standard Methods, 20th ed., Method 9223
8042 B is the same version as Standard Methods Online 9223 B-
8043 97, the Board has not listed the Standard Methods Online
8044 version separately.

- 8045
- 8046 iviii) E*Colite® Test;
- 8047
- 8048 viiv) ReadyCult® 2007 Testtest;
- 8049
- 8050 viiv) Modified Colitag™ Test; ortest.
- 8051
- 8052 vii) Tecta EC/TC P-A Test.
- 8053

8054 BOARD NOTE: USEPA added Standard Methods Online,
 8055 Method 9223 B-04, Colilert-18® Test, and Tecta EC/TC P-A Test
 8056 as approved alternative methods for total coliforms in appendix A
 8057 to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg.
 8058 35081). Because Standard Methods, 22nd ed., Method 9223 B is
 8059 the same version as Standard Methods Online, Method 9223 B-04,
 8060 the Board has not listed the Standard Methods Online versions
 8061 separately.

- 8062
- 8063 D) E. coli (following lactose fermentation methods), EC-MUG
- 8064 medium: section 1 of Standard Methods, 20th or, 21st ed., or 22nd
- 8065 ed., Method 9221 F.
- 8066

8067 BOARD NOTE: USEPA added section 1 of Standard Methods
 8068 Online, Method 9221 F-06 as an approved alternative method for
 8069 E. coli in appendix A to subpart C of 40 CFR 141 on June 19, 2014
 8070 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed.,
 8071 Method 9221 F is the same version as Standard Methods Online,
 8072 Method 9221 F-06, the Board has not listed the Standard Methods
 8073 Online versions separately.

- 8074
- 8075 E) E. coli, partition method:
- 8076

- 8077 i) EC broth with MUG (EC-MUG): section 1.c(2) of
- 8078 Standard Methods, 20th or 21st ed., Method 9222 G; or
- 8079

8080 BOARD NOTE: The following changes must be made to
 8081 the EC broth with MUG (EC-MUG) formulation:
 8082 potassium dihydrogen phosphate (KH₂PO₄) must be 1.5 g,
 8083 and 4-methylumbelliferyl-β-D-glucuronide must be 0.05 g.

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- 8085 ii) NA-MUG medium: section 1.c(1) of Standard Methods,
- 8086 20th or 21st ed., Method 9222 G.
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F) E. coli, membrane filtration methods:

i) Membrane filtration using MI medium: USEPA Method 1604.

ii) m-ColiBlue24® Testtest.

BOARD NOTE: All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is pre-sterilized by the manufacturer (i.e., disposable funnel units) may be used.

iii) Chromocult.

BOARD NOTE: All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is pre-sterilized by the manufacturer (i.e., disposable funnel units) may be used.

G) E. coli, enzyme substrate methods:

i) Colilert® Test: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B;

BOARD NOTE: Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this Subpart AA. Because Standard Methods, 20th ed., Method 9223 B is the same version as Standard Methods Online 9223 B-97, the Board has not listed the Standard Methods Online version separately.

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ii) Colilert-18® Test: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B;

iii) Colisure™®: Standard Methods, 20th, 21st, or 22nd ed., Method 9223 B;

BOARD NOTE: Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this Subpart AA.

Colisure™® results may be read after an incubation time of 24 hours. Because Standard Methods, 20th ed., Method 9223 B is the same version as Standard Methods Online 9223 B-97, the Board has not listed the Standard Methods Online version separately.

iv) E*Colite® Test;

v) Readycult® 2007 Test;

vi) Modified Colitag™ Test;

vii) Tecta EC/TC P-A Test.

BOARD NOTE: USEPA added of Standard Methods, 22nd ed., Methods 9221 B (sections 1 and 2) and 9223 B as approved alternative methods for total coliforms and Standard Methods, 22nd ed., Methods 9221 F (section 1) and 9223 B for as approved alternative methods for E. coli in appendix A to subpart C of 40 CFR 141 on June 21, 2013 (at 78 Fed. Reg. 37463). USEPA added Standard Methods Online, Method 9223 B-04, Colilert-18® Test, and Tecta EC/TC P-A Test as approved alternative methods for E. coli in appendix A to subpart C of 40 CFR 141 on June 19, 2014 (at 79 Fed. Reg. 35081). Because Standard Methods, 22nd ed., Method 9223 B is the same version as Standard Methods Online, Method 9223 B-04, the Board has not listed the Standard Methods Online versions separately.

b) Laboratory certification. A supplier must have all compliance samples required by this Subpart AA analyzed by a certified laboratory in one of the categories listed in Section 611.490(a). The laboratory used by the supplier must be certified for each method (and associated contaminants) that is used for compliance monitoring analyses under this Subpart AA.

- 8173 c) This subsection (c) corresponds with 40 CFR 141.1052(c), which is a centralized
8174 listing of incorporations by reference for the purposes of subpart Y to 40 CFR
8175 141. The Board has centrally located all incorporations by reference in Section
8176 611.102. This statement maintains structural consistency with the federal rules.
8177

8178 BOARD NOTE: Derived from 40 CFR 141.852 and appendix A to subpart C of 40 CFR
8179 141 (2014)(2013).
8180

8181 (Source: Amended at 39 Ill. Reg. _____, effective _____)
8182

8183 **Section 611.1055 Routine Monitoring Requirements for CWSs That Serve 1,000 or Fewer**
8184 **People Using Only Groundwater**
8185

- 8186 a) General.
8187
8188 1) This Section applies to CWS suppliers that use only ground water (except
8189 ground water under the direct influence of surface water, as defined in
8190 Section 611.102) and which serve 1,000 or fewer people.
8191
8192 2) Following any total coliform-positive sample taken under the provisions
8193 of this Section, the supplier must comply with the repeat monitoring
8194 requirements and E. coli analytical requirements in Section 611.1058.
8195
8196 3) Once all monitoring required by this Section and Section 611.1058 for a
8197 calendar month has been completed, the supplier must determine whether
8198 any coliform treatment technique triggers specified in Section 611.1059
8199 have been exceeded. If any trigger has been exceeded, the supplier must
8200 complete assessments as required by Section 611.1059.
8201
8202 b) Monitoring frequency for total coliforms. The monitoring frequency for total
8203 coliforms is one sample per month, except as provided for under subsections (c)
8204 through (f) of this Section.
8205
8206 c) Transition to Subpart AA.
8207
8208 1) A supplier must continue to monitor according to the total coliform
8209 monitoring schedules under Sections 611.521 through 611.527 that were
8210 in effect on March 31, 2016, unless any of the conditions in subsection (e)
8211 of this Section are triggered on or after April 1, 2016, or unless otherwise
8212 directed by the Agency, by a SEP issued pursuant to Section 611.110.
8213
8214 2) Beginning April 1, 2016, the Agency must perform a special monitoring
8215 evaluation during each sanitary survey to review the status of the

8216 supplier's system, including the distribution system, to determine whether
 8217 the system is on an appropriate monitoring schedule. After the Agency
 8218 has performed the special monitoring evaluation during each sanitary
 8219 survey, the Agency may, by a SEP issued pursuant to Section 611.110,
 8220 modify the supplier's monitoring schedule, as necessary. Alternatively,
 8221 the Agency may allow the supplier to stay on its existing monitoring
 8222 schedule, consistent with the provisions of this Section. The Agency may
 8223 not allow a supplier to begin less frequent monitoring under the special
 8224 monitoring evaluation unless the supplier has already met the applicable
 8225 criteria for less frequent monitoring in this Section.
 8226

8227 d) Criteria for reduced monitoring.

8228
 8229 1) The Agency may, by a SEP issued pursuant to Section 611.110, reduce the
 8230 monitoring frequency from monthly monitoring to no less than quarterly
 8231 monitoring if the supplier is in compliance with Agency-certified operator
 8232 provisions and demonstrates that it meets the criteria in subsections
 8233 (d)(1)(A) through (d)(1)(C) of this Section. A supplier that loses its
 8234 certified operator must return to monthly monitoring the month following
 8235 that loss.
 8236

8237 A) The supplier has a clean compliance history for a minimum of 12
 8238 months.
 8239

8240 B) The most recent sanitary survey shows the supplier is free of
 8241 sanitary defects (or has an approved plan and schedule to correct
 8242 them and is in compliance with the plan and the schedule), has a
 8243 protected water source, and meets Agency-approved construction
 8244 standards.
 8245

8246 C) The supplier meets at least one of the following criteria:
 8247

8248 i) An annual site visit by the Agency that is equivalent to a
 8249 Level 2 assessment or an annual Level 2 assessment by a
 8250 party approved by the Agency and correction of all
 8251 identified sanitary defects (or an approved plan and
 8252 schedule to correct them and is in compliance with the plan
 8253 and schedule).
 8254

8255 ii) Cross connection control, as approved by the Agency.
 8256

- 8257 iii) Continuous disinfection entering the distribution system
- 8258 and a residual in the distribution system in accordance with
- 8259 criteria specified by the Agency.
- 8260
- 8261 iv) Demonstration of maintenance of at least a 4-log removal
- 8262 or inactivation of viruses as provided for under Section
- 8263 611.803(b)(3).
- 8264
- 8265 v) Other equivalent enhancements to water system barriers as
- 8266 approved by the Agency.
- 8267

2) This subsection (d)(2) corresponds with 40 CFR 141.855(d)(2), which USEPA has marked "reserved." This statement maintains structural consistency with the corresponding federal provision.

e) Return to routine monthly monitoring requirements. A supplier on quarterly monitoring that experience any of the events in subsections (e)(1) through (e)(4) of this Section must begin monthly monitoring the month following the event. The supplier must continue monthly monitoring until it meets the reduced monitoring requirements in subsection (d) of this Section.

- 8272 1) The supplier triggers a Level 2 assessment or two Level 1 assessments in a
- 8273 rolling 12-month period.
- 8274
- 8275 2) The supplier has an E. coli MCL violation.
- 8276
- 8277 3) The supplier has a coliform treatment technique violation.
- 8278
- 8279 4) The supplier has two Subpart AA monitoring violations in a rolling 12-
- 8280 month period.
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f) Additional routine monitoring the month following a total coliform-positive sample. A supplier collecting samples on a quarterly frequency must conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger). A supplier must collect at least three routine samples during the next month, except that the Agency may, by a SEP issued pursuant to Section 611.110, waive this requirement if the conditions of subsection (f)(1), (f)(2), or (f)(3) of this Section are met. A supplier may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. A supplier must use the results of additional routine samples in coliform treatment technique trigger calculations.

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- 1) The Agency may, by a SEP issued pursuant to Section 611.110, waive the requirement to collect three routine samples the next month in which the supplier's system provides water to the public if the Agency, or an agent approved by the Agency, performs a site visit before the end of the next month in which the supplier's system provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the Agency to determine whether additional monitoring or any corrective action is needed. The Agency cannot approve an employee of the supplier to perform this site visit, even if the employee is an agent approved by the Agency to perform sanitary surveys.
 - 2) The Agency may, by a SEP issued pursuant to Section 611.110, waive the requirement to collect three routine samples the next month in which the supplier's system provides water to the public if the Agency has determined why the sample was total coliform-positive and has established that the supplier has corrected the problem or will correct the problem before the end of the next month in which the supplier's system serves water to the public. In this case, the Agency must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the Agency official who recommends such a decision, and make this document available to USEPA and the public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the supplier has taken or will take to correct this problem.
 - 3) The Agency may not waive the requirement to collect three additional routine samples the next month in which the supplier's system provides water to the public solely on the grounds that all repeat samples are total coliform-negative. If the Agency determines that the supplier has corrected the contamination problem before the supplier takes the set of repeat samples required in Section 611.1058, and all repeat samples were total coliform-negative, the Agency may, by a SEP issued pursuant to Section 611.110, waive the requirement for additional routine monitoring the next month.

8335 BOARD NOTE: Derived from 40 CFR 141.855 (2014)~~(2013)~~.

8336 (Source: Amended at 39 Ill. Reg. _____, effective _____)

8337
8338
8339 **Section 611.1061 Reporting and Recordkeeping**

- 8340
8341 a) Reporting.
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- 1) E. coli.
 - A) A supplier must notify the Agency by the end of the day when the system learns of an E. coli MCL violation, unless the supplier learns of the violation after the Agency office is closed and the Agency does not have either an after-hours phone line or an alternative notification procedure, in which case the supplier must notify the Agency before the end of the next business day, and the supplier notifies the public in accordance with Subpart V of this Part.
 - B) A supplier must notify the Agency by the end of the day when the supplier is notified of an E. coli-positive routine sample, unless the supplier is notified of the result after the Agency office is closed and the Agency does not have either an after-hours phone line or an alternative notification procedure, in which case the supplier must notify the Agency before the end of the next business day.
 - 2) A supplier that has violated the treatment technique for coliforms in Section 611.1059 must report the violation to the Agency no later than the end of the next business day after it learns of the violation, and notify the public in accordance with Subpart V of this Part.
 - 3) A supplier required to conduct an assessment under the provisions of Section 611.1059 must submit the assessment report within 30 days. The supplier must notify the Agency in accordance with Section 611.1059(c) when each scheduled corrective action is completed for corrections not completed by the time of submission of the assessment form.
 - 4) A supplier that has failed to comply with a coliform monitoring requirement must report the monitoring violation to the Agency within 10 days after the supplier discovers the violation, and notify the public in accordance with Subpart V of this Part.
 - 5) A seasonal system supplier must certify, prior to serving water to the public, that it has complied with the Agency-approved start-up procedure.
- b) Recordkeeping.
- 1) The supplier must maintain any assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of those assessments, or other available summary documentation of the sanitary defects and corrective actions taken under

8386 Section ~~611.1059~~611.1058 for Agency review. This record must be
8387 maintained by the supplier for a period not less than five years after
8388 completion of the assessment or corrective action.

8389
8390 2) The supplier must maintain a record of any repeat sample taken that meets
8391 Agency criteria for an extension of the 24-hour period for collecting repeat
8392 samples as provided for under Section 611.1058(a)(1).

8393
8394 BOARD NOTE: Derived from 40 CFR 141.861 ~~(2014)~~(2013).

8395
8396 (Source: Amended at 39 Ill. Reg. _____, effective _____)
8397

8398 **Section 611.APPENDIX G NPDWR Violations and Situations Requiring Public Notice**

8399
8400 See note 1 at the end of this Appendix G for an explanation of the Agency's authority to alter the
8401 magnitude of a violation from that set forth in the following table.
8402

Contaminant	MCL/MRDL/TT violations ²		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation

8403
8404 I. Violations of National Primary Drinking Water Regulations (NPDWR):³

8405
8406 A. Microbiological Contaminants

1a. Total coliform bacteria, until March 31, 2016	2	611.325(a)	3	611.521-611.525
1b. Total coliform (Monitoring or TT violations resulting from failure to perform assessments or corrective actions, <u>monitoring violations, and reporting violations</u>), beginning April 1, 2016	2	<u>611.1060(b)(1)</u> 141.860(b)	3	<u>611.1060(c)(1)</u> <u>611.1060(d)(1)</u> 141.860(e)
1c. Seasonal system failure to follow State-approved start-up plan prior to serving water to the public <u>or failure to provide certification to the Agency</u> , beginning April 1, 2016	2	<u>611.1060(b)(2)</u> 141.860(b)(2)	<u>3</u>	<u>611.1060(d)(3)</u>
2a. Fecal coliform/E. coli, until March 31, 2016	1	611.325(b)	⁴ 1, 3	611.525
2b. E. coli (<u>MCL, monitoring, and reporting violations</u>), beginning April 1, 2016	1	<u>611.1060(a)</u> 141.860(a)	3	<u>611.1060(c)</u> <u>611.1060(d)(2)</u> 141.860(e) 141.860(d)(2)

2c. E. coli (TT violations resulting from failure to perform Level 2 assessments or corrective action), beginning April 1, 2016	2	611.1060(b)(1) 141.860(b)		
3. Turbidity MCL	2	611.320(a)	3	611.560
4. Turbidity MCL (average of two days' samples greater than 5 NTU)	⁵ 2, 1	611.320(b)	3	611.560
5. Turbidity (for TT violations resulting from a single exceedence of maximum allowable turbidity level)	⁶ 2, 1	611.231(b), 611.233(b)(1), 611.250(a)(2), 611.250(b)(2), 611.250(c)(2), 611.250(d), 611.743(a)(2), 611.743(b), 611.955(b)(2)	3	611.531(a), 611.532(b), 611.533(a), 611.744, 611.956(a)(1)- (a)(3), 611.956(b)
6. Surface Water Treatment Rule violations, other than violations resulting from single exceedence of max. allowable turbidity level (TT)	2	611.211, 611.213, 611.220, 611.230- 611.233, 611.240- 611.242, 611.250	3	611.531- 611.533
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from single exceedence of max. turbidity level (TT)	2	⁷ 611.740- 611.743, 611.950- 611.955	3	611.742, 611.744, 611.953, 611.954, 611.956
8. Filter Backwash Recycling Rule violations	2	611.276(c)	3	611.276(b), (d)
9. Long Term 1 Enhanced Surface Water Treatment Rule violations	2	611.950- 611.955	3	611.953, 611.954, 611.956
10. LT2ESWTR violations	2	611.1010- 611.1020	¹⁹ 2, 3	611.1001- 611.1005 and 611.1008- 611.1009

11. Groundwater Rule violations	2	611.804	3	611.802(h)
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B. Inorganic Chemicals (IOCs)

1. Antimony	2	611.301(b)	3	611.600, 611.601, 611.603
2. Arsenic	2	611.301(b)	3	611.601, 611.603
3. Asbestos (fibers greater than 10 µm)	2	611.301(b)	3	611.600, 611.601, 611.602
4. Barium	2	611.301(b)	3	611.600, 611.601, 611.603
5. Beryllium	2	611.301(b)	3	611.600, 611.601, 611.603
6. Cadmium	2	611.301(b)	3	611.600, 611.601, 611.603
7. Chromium (total)	2	611.301(b)	3	611.600, 611.601, 611.603
8. Cyanide	2	611.301(b)	3	611.600, 611.601, 611.603
9. Fluoride	2	611.301(b)	3	611.600, 611.601, 611.603
10. Mercury (inorganic)	2	611.301(b)	3	611.600, 611.601, 611.603
11. Nitrate	1	611.301(b)	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

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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
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D. Synthetic Organic Chemicals (SOCs)

1. 2,4-D	2	611.310(c)	3	611.648
2. 2,4,5-TP (silvex)	2	611.310(c)	3	611.648
3. Alachlor	2	611.310(c)	3	611.648
4. Atrazine	2	611.310(c)	3	611.648
5. Benzo(a)pyrene (PAHs)	2	611.310(c)	3	611.648
6. Carbofuran	2	611.310(c)	3	611.648
7. Chlordane	2	611.310(c)	3	611.648
8. Dalapon	2	611.310(c)	3	611.648
9. Di(2-ethylhexyl)adipate	2	611.310(c)	3	611.648
10. Di(2-ethylhexyl)phthalate	2	611.310(c)	3	611.648
11. Dibromochloropropane (DBCP)	2	611.310(c)	3	611.648
12. Dinoseb	2	611.310(c)	3	611.648
13. Dioxin (2,3,7,8-TCDD)	2	611.310(c)	3	611.648
14. Diquat	2	611.310(c)	3	611.648
15. Endothall	2	611.310(c)	3	611.648
16. Endrin	2	611.310(c)	3	611.648
17. Ethylene dibromide	2	611.310(c)	3	611.648
18. Glyphosate	2	611.310(c)	3	611.648
19. Heptachlor	2	611.310(c)	3	611.648
20. Heptachlor epoxide	2	611.310(c)	3	611.648
21. Hexachlorobenzene	2	611.310(c)	3	611.648
22. Hexachlorocyclopentadiene	2	611.310(c)	3	611.648
23. Lindane	2	611.310(c)	3	611.648
24. Methoxychlor	2	611.310(c)	3	611.648
25. Oxamyl (Vydate)	2	611.310(c)	3	611.648
26. Pentachlorophenol	2	611.310(c)	3	611.648
27. Picloram	2	611.310(c)	3	611.648
28. Polychlorinated biphenyls (PCBs)	2	611.310(c)	3	611.648

29. Simazine	2	611.310(c)	3	611.648
30. Toxaphene	2	611.310(c)	3	611.648

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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

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F. Radioactive Contaminants

1. Beta/photon emitters	2	611.330(d)	3	611.720(a), 611.732
2. Alpha emitters	2	611.330(c)	3	611.720(a), 611.731
3. Combined radium (226 & 228)	2	611.330(b)	3	611.720(a), 611.731
4. Uranium	2	611.330(e)	3	611.720(a), 611.731

8417

8418 G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. Where
 8419 disinfection is used in the treatment of drinking water, disinfectants combine with organic
 8420 and inorganic matter present in water to form chemicals called disinfection byproducts
 8421 (DBPs). USEPA sets standards for controlling the levels of disinfectants and DBPs in
 8422 drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).¹³

1. Total trihalomethanes (TTHMs)	2	¹¹ 611.312(b)	3	Subparts W and Y of this Part
2. Haloacetic Acids (HAA5)	2	611.312(b)	3	Subpart Y of this Part
3. Bromate	2	611.312(a)	3	611.382(a)-(b)
4. Chlorite	2	611.312(a)	3	611.382(a)-(b)
5. Chlorine (MRDL)	2	611.313(a)	3	611.382(a), (c)
6. Chloramine (MRDL)	2	611.313(a)	3	611.382(a), (c)
7. Chlorine dioxide (MRDL), where any two consecutive daily samples at entrance to distribution system only are above MRDL	2	611.313(a), 611.383(c)(3)	² ¹² , 3	611.382(a), (c), 611.383(c)(2)
8. Chlorine dioxide (MRDL), where samples in distribution system the next day are also above MRDL	¹³ 1	611.313(a), 611.383(c)(3)	1	611.382(a), (c), 611.383(c)(2)
9. Control of DBP precursors – TOC (TT)	2	611.385(a)-(b)	3	611.382(a), (d)
10. Benchmarking and disinfection profiling	N/A	N/A	3	611.742, 611.953, 611.954
11. Development of monitoring plan	N/A	N/A	3	611.382(f)

8423 H. Other Treatment Techniques
 8424

1. Acrylamide (TT)	2	611.296	N/A	N/A
2. Epichlorohydrin (TT)	2	611.296	N/A	N/A

8425 II. Unregulated Contaminant Monitoring:¹⁴
 8426

A. Unregulated contaminants	N/A	N/A	3	as required by <u>USEPA</u> <u>pursuant to</u> <u>40 CFR</u> <u>141.40</u> 611.510
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B. Nickel	N/A	N/A	3	611.603, 611.611
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III. Public Notification for Relief Equivalent to a SDWA section 1415 Variance or a section 1416 Exemption.

A. Operation under relief equivalent to a SDWA section 1415 variance or a section 1416 exemption		1415, 1416		
B. Violation of conditions of relief equivalent to a SDWA section 1415 variance or a section 1416 exemption		5, 1416, ¹⁶ 611.111, 611.112		

8430

843 IV. Other Situations Requiring Public Notification.

A. Fluoride secondary maximum contaminant level (SMCL) exceedence		858		
B. Exceedence of nitrate MCL for a non-CWS supplier, as allowed by the Agency		300(d)		
C. Availability of unregulated contaminant monitoring data		required by <u>USEPA</u> pursuant to 40 <u>CFR 141.40</u> 510		
D. Waterborne disease outbreak		101, 611.233(b)(2)		
E. Other waterborne emergency ¹⁷				
F. Source water sample positive for Groundwater Rule fecal indicators: E. coli, enterococci, or coliphage		802(g)		
G. Other situations as determined by the Agency by a SEP issued pursuant to Section 611.110	2, 3			

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- 8435 1. Violations and other situations not listed in this table (e.g., failure to prepare Consumer
8436 Confidence Reports) do not require notice, unless otherwise determined by the Agency
8437 by a SEP issued pursuant to Section 611.110. The Agency may, by a SEP issued
8438 pursuant to Section 611.110, further require a more stringent public notice tier (e.g., Tier
8439 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed
8440 in this Appendix, as authorized under Sections 611.902(a) and 611.903(a).
8441
- 8442 2. Definition of the abbreviations used: "MCL" means maximum contaminant level,
8443 "MRDL" means maximum residual disinfectant level, and "TT" means treatment
8444 technique.
8445
- 8446 3. The term "violations of National Primary Drinking Water Regulations (NPDWR)" is
8447 used here to include violations of MCL, MRDL, treatment technique, monitoring, and
8448 testing procedure requirements.
8449
- 8450 4. Failure to test for fecal coliform or E. coli is a Tier 1 violation if testing is not done after
8451 any repeat sample tests positive for coliform. All other total coliform monitoring and
8452 testing procedure violations are Tier 3 violations.
8453
- 8454 5. A supplier that violates the turbidity MCL of 5 NTU based on an average of
8455 measurements over two consecutive days must consult with the Agency within 24 hours
8456 after learning of the violation. Based on this consultation, the Agency may subsequently
8457 decide to issue a SEP pursuant to Section 611.110 that elevates the violation to a Tier 1
8458 violation. If a supplier is unable to make contact with the Agency in the 24-hour period,
8459 the violation is automatically elevated to a Tier 1 violation.
8460
- 8461 6. A supplier with a treatment technique violation involving a single exceedence of a
8462 maximum turbidity limit under the Surface Water Treatment Rule (SWTR), the Interim
8463 Enhanced Surface Water Treatment Rule (IESWTR), or the Long Term 1 Enhanced
8464 Surface Water Treatment Rule are required to consult with the Agency within 24 hours
8465 after learning of the violation. Based on this consultation, the Agency may subsequently
8466 decide to issue a SEP pursuant to Section 611.110 that elevates the violation to a Tier 1
8467 violation. If a supplier is unable to make contact with the Agency in the 24-hour period,
8468 the violation is automatically elevated to a Tier 1 violation.
8469
- 8470 7. The Surface Water Treatment Rule (SWTR) remains in effect for a supplier that serves at
8471 least 10,000 persons; the Interim Enhanced Surface Water Treatment Rule adds
8472 additional requirements and does not in many cases supercede the SWTR.
8473
- 8474 8. Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial
8475 sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are
8476 Tier 3.
8477

- 8478 9. Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial
8479 sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are
8480 Tier 3.
8481
- 8482 10. A Subpart B community or non-transient non-community system supplier must comply
8483 with new DBP MCLs, disinfectant MRDLs, and related monitoring requirements. A
8484 Subpart B transient non-community system supplier that serves 10,000 or more persons
8485 that uses chlorine dioxide as a disinfectant or oxidant or a Subpart B transient non-
8486 community system supplier that serves fewer than 10,000 persons, which uses only
8487 groundwater not under the direct influence of surface water, and which uses chlorine
8488 dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL.
8489
- 8490 11. Sections 611.312(b)(1) and 611.382(a) and (b) apply until Subpart Y of this Part takes
8491 effect under the schedule set forth in Section 611.970(c).
8492
- 8493 12. Failure to monitor for chlorine dioxide at the entrance to the distribution system the day
8494 after exceeding the MRDL at the entrance to the distribution system is a Tier 2 violation.
8495
- 8496 13. If any daily sample taken at the entrance to the distribution system exceeds the MRDL
8497 for chlorine dioxide and one or more samples taken in the distribution system the next
8498 day exceed the MRDL, Tier 1 notification is required. A failure to take the required
8499 samples in the distribution system after the MRDL is exceeded at the entry point also
8500 triggers Tier 1 notification.
8501
- 8502 14. Some water suppliers must monitor for certain unregulated contaminants as required by
8503 USEPA pursuant to 40 CFR 141.40 listed in Section 611.510.
8504
- 8505 15. This citation refers to sections 1415 and 1416 of the federal Safe Drinking Water Act.
8506 sections 1415 and 1416 require that "a schedule prescribed...for a public water system
8507 granted relief equivalent to a SDWA section 1415 variance or a section 1416 exemption
8508 must require compliance by the system...."
8509
- 8510 16. In addition to sections 1415 and 1416 of the federal Safe Drinking Water Act, 40 CFR
8511 142.307 specifies the items and schedule milestones that must be included in relief
8512 equivalent to a SDWA section 1415 small system variance. In granting any form of relief
8513 from an NPDWR, the Board will consider all applicable federal requirements for and
8514 limitations on the State's ability to grant relief consistent with federal law.
8515
- 8516 17. Other waterborne emergencies require a Tier 1 public notice under Section 611.902(a) for
8517 situations that do not meet the definition of a waterborne disease outbreak given in
8518 Section 611.101, but which still have the potential to have serious adverse effects on
8519 health as a result of short-term exposure. These could include outbreaks not related to
8520 treatment deficiencies, as well as situations that have the potential to cause outbreaks,

8521 such as failures or significant interruption in water treatment processes, natural disasters
8522 that disrupt the water supply or distribution system, chemical spills, or unexpected
8523 loading of possible pathogens into the source water.
8524

8525 18. The Agency may place any other situation in any tier it deems appropriate in writing,
8526 based on the prospective threat which it determines that the situation poses to public
8527 health, and subject to Board review pursuant to Section 40 of the Act [415 ILCS 5/40].
8528

8529 19. A failure to collect three or more samples for Cryptosporidium analysis is a Tier 2
8530 violation requiring special notice, as specified in Section 611.911. All other monitoring
8531 and testing procedure violations are Tier 3.
8532

8533 BOARD NOTE: Derived from Appendix A to Subpart Q to 40 CFR 141 (2014)~~(2013)~~.
8534

8535 (Source: Amended at 39 Ill. Reg. _____, effective _____)