

**EXEMPT**

JCAR350611-0814065r01

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

**RECEIVED**  
CLERK'S OFFICE

AUG 27 2008

STATE OF ILLINOIS  
Pollution Control Board

10	Section	
11	611.100	Purpose, Scope, and Applicability
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
17	611.108	Delegation to Local Government
18	611.109	Enforcement
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
22	611.113	Alternative Treatment Techniques
23	611.114	Siting Requirements
24	611.115	Source Water Quantity
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
29	611.130	Special Requirements for Certain Variances and Adjusted Standards
30	611.131	Relief Equivalent to SDWA Section 1415(e) Small System Variance
31	611.160	Composite Correction Program
32	611.161	Case-by-Case Reduced Subpart Y Monitoring for Wholesale and Consecutive 33 Systems

34  
35 SUBPART B: FILTRATION AND DISINFECTION  
36

37	Section	
38	611.201	Requiring a Demonstration
39	611.202	Procedures for Agency Determinations
40	611.211	Filtration Required
41	611.212	Groundwater under Direct Influence of Surface Water
42	611.213	No Method of HPC Analysis
43	611.220	General Requirements

44	611.230	Filtration Effective Dates
45	611.231	Source Water Quality Conditions
46	611.232	Site-Specific Conditions
47	611.233	Treatment Technique Violations
48	611.240	Disinfection
49	611.241	Unfiltered PWSs
50	611.242	Filtered PWSs
51	611.250	Filtration
52	611.261	Unfiltered PWSs: Reporting and Recordkeeping
53	611.262	Filtered PWSs: Reporting and Recordkeeping
54	611.271	Protection during Repair Work
55	611.272	Disinfection Following Repair
56	611.276	Recycle Provisions

57  
58           SUBPART C: USE OF NON-CENTRALIZED TREATMENT DEVICES

59		
60	Section	
61	611.280	Point-of-Entry Devices
62	611.290	Use of Point-of-Use Devices or Bottled Water

63  
64                           SUBPART D: TREATMENT TECHNIQUES

65		
66	Section	
67	611.295	General Requirements
68	611.296	Acrylamide and Epichlorohydrin
69	611.297	Corrosion Control

70  
71           SUBPART F: MAXIMUM CONTAMINANT LEVELS (MCLs) AND  
72                   MAXIMUM RESIDUAL DISINFECTANT LEVELS (MRDLs)

73		
74	Section	
75	611.300	Old MCLs for Inorganic Chemical Contaminants
76	611.301	Revised MCLs for Inorganic Chemical Contaminants
77	611.310	State-Only Maximum Contaminant Levels (MCLs) for Organic Chemical
78		Contaminants
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)
83	611.325	Microbiological Contaminants
84	611.330	Maximum Contaminant Levels for Radionuclides
85	611.331	Beta Particle and Photon Radioactivity (Repealed)
86		

87 SUBPART G: LEAD AND COPPER

88

89 Section

- 90 611.350 General Requirements
- 91 611.351 Applicability of Corrosion Control
- 92 611.352 Corrosion Control Treatment
- 93 611.353 Source Water Treatment
- 94 611.354 Lead Service Line Replacement
- 95 611.355 Public Education and Supplemental Monitoring
- 96 611.356 Tap Water Monitoring for Lead and Copper
- 97 611.357 Monitoring for Water Quality Parameters
- 98 611.358 Monitoring for Lead and Copper in Source Water
- 99 611.359 Analytical Methods
- 100 611.360 Reporting
- 101 611.361 Recordkeeping

102

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

105

106 Section

- 107 611.380 General Requirements
- 108 611.381 Analytical Requirements
- 109 611.382 Monitoring Requirements
- 110 611.383 Compliance Requirements
- 111 611.384 Reporting and Recordkeeping Requirements
- 112 611.385 Treatment Technique for Control of Disinfection Byproduct (DBP) Precursors

113

114 SUBPART K: GENERAL MONITORING AND ANALYTICAL REQUIREMENTS

115

116 Section

- 117 611.480 Alternative Analytical Techniques
- 118 611.490 Certified Laboratories
- 119 611.491 Laboratory Testing Equipment
- 120 611.500 Consecutive PWSs
- 121 611.510 Special Monitoring for Unregulated Contaminants (Repealed)

122

123 SUBPART L: MICROBIOLOGICAL MONITORING  
124 AND ANALYTICAL REQUIREMENTS

125

126 Section

- 127 611.521 Routine Coliform Monitoring
- 128 611.522 Repeat Coliform Monitoring
- 129 611.523 Invalidation of Total Coliform Samples

- 130 611.524 Sanitary Surveys
- 131 611.525 Fecal Coliform and E. Coli Testing
- 132 611.526 Analytical Methodology
- 133 611.527 Response to Violation
- 134 611.531 Analytical Requirements
- 135 611.532 Unfiltered PWSs
- 136 611.533 Filtered PWSs

137  
138 SUBPART M: TURBIDITY MONITORING AND ANALYTICAL REQUIREMENTS  
139

- 140 Section
- 141 611.560 Turbidity

142  
143 SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS  
144

- 145 Section
- 146 611.591 Violation of a State MCL
- 147 611.592 Frequency of State Monitoring
- 148 611.600 Applicability
- 149 611.601 Monitoring Frequency
- 150 611.602 Asbestos Monitoring Frequency
- 151 611.603 Inorganic Monitoring Frequency
- 152 611.604 Nitrate Monitoring
- 153 611.605 Nitrite Monitoring
- 154 611.606 Confirmation Samples
- 155 611.607 More Frequent Monitoring and Confirmation Sampling
- 156 611.608 Additional Optional Monitoring
- 157 611.609 Determining Compliance
- 158 611.610 Inorganic Monitoring Times
- 159 611.611 Inorganic Analysis
- 160 611.612 Monitoring Requirements for Old Inorganic MCLs
- 161 611.630 Special Monitoring for Sodium
- 162 611.631 Special Monitoring for Inorganic Chemicals (Repealed)

163  
164 SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS  
165

- 166 Section
- 167 611.640 Definitions
- 168 611.641 Old MCLs
- 169 611.645 Analytical Methods for Organic Chemical Contaminants
- 170 611.646 Phase I, Phase II, and Phase V Volatile Organic Contaminants
- 171 611.647 Sampling for Phase I Volatile Organic Contaminants (Repealed)
- 172 611.648 Phase II, Phase IIB, and Phase V Synthetic Organic Contaminants

- 173 611.650 Monitoring for 36 Contaminants (Repealed)
- 174 611.657 Analytical Methods for 36 Contaminants (Repealed)
- 175 611.658 Special Monitoring for Organic Chemicals (Repealed)

176  
177           SUBPART P: THM MONITORING AND ANALYTICAL REQUIREMENTS

- 178
- 179 Section
- 180 611.680 Sampling, Analytical, and other Requirements
- 181 611.683 Reduced Monitoring Frequency (Repealed)
- 182 611.684 Averaging (Repealed)
- 183 611.685 Analytical Methods (Repealed)
- 184 611.686 Modification to System (Repealed)
- 185 611.687 Sampling for THM Potential (Repealed)
- 186 611.688 Applicability Dates (Repealed)

187  
188           SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS

- 189
- 190 Section
- 191 611.720 Analytical Methods
- 192 611.731 Gross Alpha
- 193 611.732 Beta Particle and Photon Radioactivity
- 194 611.733 General Monitoring and Compliance Requirements

195  
196           SUBPART R: ENHANCED FILTRATION AND DISINFECTION:  
197                           SYSTEMS THAT SERVE 10,000 OR MORE PEOPLE

- 198
- 199 Section
- 200 611.740 General Requirements
- 201 611.741 Standards for Avoiding Filtration
- 202 611.742 Disinfection Profiling and Benchmarking
- 203 611.743 Filtration
- 204 611.744 Filtration Sampling Requirements
- 205 611.745 Reporting and Recordkeeping Requirements

206  
207           SUBPART S: GROUNDWATER RULE

- 208 Section
- 209 611.800 General Requirements and Applicability
- 210 611.801 Sanitary Surveys for GWS Suppliers
- 211 611.802 Groundwater Source Microbial Monitoring and Analytical Methods
- 212 611.803 Treatment Technique Requirements for GWS Suppliers
- 213 611.804 Treatment Technique Violations for GWS Suppliers
- 214 611.805 Reporting and Recordkeeping for GWS Suppliers

215

216 SUBPART T: REPORTING AND RECORDKEEPING

- 217
- 218 Section
- 219 611.830 Applicability
- 220 611.831 Monthly Operating Report
- 221 611.832 Notice by Agency (Repealed)
- 222 611.833 Cross Connection Reporting
- 223 611.840 Reporting
- 224 611.851 Reporting MCL, MRDL, and other Violations (Repealed)
- 225 611.852 Reporting other Violations (Repealed)
- 226 611.853 Notice to New Billing Units (Repealed)
- 227 611.854 General Content of Public Notice (Repealed)
- 228 611.855 Mandatory Health Effects Language (Repealed)
- 229 611.856 Fluoride Notice (Repealed)
- 230 611.858 Fluoride Secondary Standard (Repealed)
- 231 611.860 Record Maintenance
- 232 611.870 List of 36 Contaminants (Repealed)

233

234 SUBPART U: CONSUMER CONFIDENCE REPORTS

- 235
- 236 Section
- 237 611.881 Purpose and Applicability
- 238 611.882 Compliance Dates
- 239 611.883 Content of the Reports
- 240 611.884 Required Additional Health Information
- 241 611.885 Report Delivery and Recordkeeping

242

243 SUBPART V: PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

- 244
- 245 Section
- 246 611.901 General Public Notification Requirements
- 247 611.902 Tier 1 Public Notice: Form, Manner, and Frequency of Notice
- 248 611.903 Tier 2 Public Notice: Form, Manner, and Frequency of Notice
- 249 611.904 Tier 3 Public Notice: Form, Manner, and Frequency of Notice
- 250 611.905 Content of the Public Notice
- 251 611.906 Notice to New Billing Units or New Customers
- 252 611.907 Special Notice of the Availability of Unregulated Contaminant Monitoring
- 253 Results
- 254 611.908 Special Notice for Exceedence of the Fluoride Secondary Standard
- 255 611.909 Special Notice for Nitrate Exceedences above the MCL by a Non-Community
- 256 Water System
- 257 611.910 Notice by the Agency on Behalf of a PWS
- 258 611.911 Special Notice for Cryptosporidium

259		
260		SUBPART W: INITIAL DISTRIBUTION SYSTEM EVALUATIONS
261	Section	
262	611.920	General Requirements
263	611.921	Standard Monitoring
264	611.922	System-Specific Studies
265	611.923	40/30 Certification
266	611.924	Very Small System Waivers
267	611.925	Subpart Y Compliance Monitoring Location Recommendations
268		
269		SUBPART X: ENHANCED FILTRATION AND DISINFECTION –
270		SYSTEMS SERVING FEWER THAN 10,000 PEOPLE
271	Section	
272	611.950	General Requirements
273	611.951	Finished Water Reservoirs
274	611.952	Additional Watershed Control Requirements for Unfiltered Systems
275	611.953	Disinfection Profile
276	611.954	Disinfection Benchmark
277	611.955	Combined Filter Effluent Turbidity Limits
278	611.956	Individual Filter Turbidity Requirements
279	611.957	Reporting and Recordkeeping Requirements
280		
281		SUBPART Y: STAGE 2 DISINFECTION BYPRODUCTS REQUIREMENTS
282	Section	
283	611.970	General Requirements
284	611.971	Routine Monitoring
285	611.972	Subpart Y Monitoring Plan
286	611.973	Reduced Monitoring
287	611.974	Additional Requirements for Consecutive Systems
288	611.975	Conditions Requiring Increased Monitoring
289	611.976	Operational Evaluation Levels
290	611.977	Requirements for Remaining on Reduced TTHM and HAA5 Monitoring Based
291		on Subpart I Results
292	611.978	Requirements for Remaining on Increased TTHM and HAA5 Monitoring Based
293		on Subpart I Results
294	611.979	Reporting and Recordkeeping Requirements
295		
296		SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM
297	Section	
298	611.1000	General Requirements
299	611.1001	Source Water Monitoring Requirements: Source Water Monitoring
300	611.1002	Source Water Monitoring Requirements: Sampling Schedules
301	611.1003	Source Water Monitoring Requirements: Sampling Locations

302	611.1004	Source Water Monitoring Requirements: Analytical Methods
303	611.1005	Source Water Monitoring Requirements: Approved Laboratories
304	611.1006	Source Water Monitoring Requirements: Reporting Source Water Monitoring
305		Results
306	611.1007	Source Water Monitoring Requirements: Grandfathering Previously Collected
307		Data
308	611.1008	Disinfection Profiling and Benchmarking Requirements: Requirements When
309		Making a Significant Change in Disinfection Practice
310	611.1009	Disinfection Profiling and Benchmarking Requirements: Developing the
311		Disinfection Profile and Benchmark
312	611.1010	Treatment Technique Requirements: Bin Classification for Filtered
313		SuppliersSystems
314	611.1011	Treatment Technique Requirements: Filtered System Additional
315		Cryptosporidium Treatment Requirements
316	611.1012	Treatment Technique Requirements: Unfiltered System Cryptosporidium
317		Treatment Requirements
318	611.1013	Treatment Technique Requirements: Schedule for Compliance with
319		Cryptosporidium Treatment Requirements
320	611.1014	Treatment Technique Requirements: Requirements for Uncovered Finished
321		Water Storage Facilities
322	611.1015	Requirements for Microbial Toolbox Components: Microbial Toolbox Options
323		for Meeting Cryptosporidium Treatment Requirements
324	611.1016	Requirements for Microbial Toolbox Components: Source Toolbox Components
325	611.1017	Requirements for Microbial Toolbox Components: Pre-Filtration Treatment
326		Toolbox Components
327	611.1018	Requirements for Microbial Toolbox Components: Treatment Performance
328		Toolbox Components
329	611.1019	Requirements for Microbial Toolbox Components: Additional Filtration Toolbox
330		Components
331	611.1020	Requirements for Microbial Toolbox Components: Inactivation Toolbox
332		Components
333	611.1021	Reporting and Recordkeeping Requirements: Reporting Requirements
334	611.1022	Reporting and Recordkeeping Requirements: Recordkeeping Requirements
335	611.1023	Requirements to Respond to Significant Deficiencies Identified in Sanitary
336		Surveys Performed by USEPA or the Agency
337		
338	611.APPENDIX A	Regulated Contaminants
339	611.APPENDIX B	Percent Inactivation of G. Lamblia Cysts
340	611.APPENDIX C	Common Names of Organic Chemicals
341	611.APPENDIX D	Defined Substrate Method for the Simultaneous Detection of Total
342		Coliforms and Eschericia Coli from Drinking Water
343	611.APPENDIX E	Mandatory Lead Public Education Information for Community Water
344		Systems



345 611.APPENDIX F Mandatory Lead Public Education Information for Non-Transient Non-  
 346 Community Water Systems  
 347 611.APPENDIX G NPDWR Violations and Situations Requiring Public Notice  
 348 611.APPENDIX H Standard Health Effects Language for Public Notification  
 349 611.APPENDIX I Acronyms Used in Public Notification Regulation  
 350 611.TABLE A Total Coliform Monitoring Frequency  
 351 611.TABLE B Fecal or Total Coliform Density Measurements  
 352 611.TABLE C Frequency of RDC Measurement  
 353 611.TABLE D Number of Lead and Copper Monitoring Sites  
 354 611.TABLE E Lead and Copper Monitoring Start Dates  
 355 611.TABLE F Number of Water Quality Parameter Sampling Sites  
 356 611.TABLE G Summary of Section 611.357 Monitoring Requirements for Water Quality  
 357 Parameters  
 358 611.TABLE H CT Values (mg·min/ℓ) for Cryptosporidium Inactivation by Chlorine  
 359 Dioxide  
 360 611.TABLE I CT Values (mg·min/ℓ) for Cryptosporidium Inactivation by Ozone  
 361 611.TABLE J UV Dose Table for Cryptosporidium, Giardia lamblia, and Virus  
 362 Inactivation Credit  
 363 611.TABLE Z Federal Effective Dates

364  
 365 AUTHORITY: Implementing Sections 7.2, 17, and 17.5 and authorized by Section 27 of the  
 366 Environmental Protection Act [415 ILCS 5/7.2, 17, 17.5, and 27].  
 367

368 SOURCE: Adopted in R88-26 at 14 Ill. Reg. 16517, effective September 20, 1990; amended in  
 369 R90-21 at 14 Ill. Reg. 20448, effective December 11, 1990; amended in R90-13 at 15 Ill. Reg.  
 370 1562, effective January 22, 1991; amended in R91-3 at 16 Ill. Reg. 19010, effective December 1,  
 371 1992; amended in R92-3 at 17 Ill. Reg. 7796, effective May 18, 1993; amended in R93-1 at 17  
 372 Ill. Reg. 12650, effective July 23, 1993; amended in R94-4 at 18 Ill. Reg. 12291, effective July  
 373 28, 1994; amended in R94-23 at 19 Ill. Reg. 8613, effective June 20, 1995; amended in R95-17  
 374 at 20 Ill. Reg. 14493, effective October 22, 1996; amended in R98-2 at 22 Ill. Reg. 5020,  
 375 effective March 5, 1998; amended in R99-6 at 23 Ill. Reg. 2756, effective February 17, 1999;  
 376 amended in R99-12 at 23 Ill. Reg. 10348, effective August 11, 1999; amended in R00-8 at 23 Ill.  
 377 Reg. 14715, effective December 8, 1999; amended in R00-10 at 24 Ill. Reg. 14226, effective  
 378 September 11, 2000; amended in R01-7 at 25 Ill. Reg. 1329, effective January 11, 2001;  
 379 amended in R01-20 at 25 Ill. Reg. 13611, effective October 9, 2001; amended in R02-5 at 26 Ill.  
 380 Reg. 3522, effective February 22, 2002; amended in R03-4 at 27 Ill. Reg. 1183, effective January  
 381 10, 2003; amended in R03-15 at 27 Ill. Reg. 16447, effective October 10, 2003; amended in  
 382 R04-3 at 28 Ill. Reg. 5269, effective March 10, 2004; amended in R04-13 at 28 Ill. Reg. 12666,  
 383 effective August 26, 2004; amended in R05-6 at 29 Ill. Reg. 2287, effective January 28, 2005;  
 384 amended in R06-15 at 30 Ill. Reg. 17004, effective October 13, 2006; amended in R07-2/R07-11  
 385 at 31 Ill. Reg. 11757, effective July 27, 2007; amended in R08-5/R08-7/R08-13 at 32 Ill. Reg.  
 386 \_\_\_\_\_, effective \_\_\_\_\_.  
 387

SUBPART A: GENERAL

**Section 611.102 Incorporations by Reference**

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

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

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

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

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

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

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

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

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

431  
432 "Georgia Radium Method" means "The Determination of Radium-226 and  
433 Radium-228 in Drinking Water by Gamma-ray Spectrometry Using HPGE  
434 or Ge(Li) Detectors," Revision 1.2, December 2004, available from the  
435 Environmental Resources Center, Georgia Institute of Technology.  
436  
437 "GLI Method 2" means GLI Method 2, "Turbidity," Nov. 2, 1992,  
438 available from Great Lakes Instruments, Inc.  
439  
440 "Hach FilterTrak Method 10133" means "Determination of Turbidity by  
441 Laser Nephelometry," available from Hach Co.  
442  
443 "HASL Procedure Manual" means HASL Procedure Manual, HASL 300,  
444 available from ERDA Health and Safety Laboratory.  
445  
446 "ITS Method D99-003" means Method D99-003, Revision 3.0, "Free  
447 Chlorine Species (HOCl and OCl) by Test Strip," available from  
448 Industrial Test Systems, Inc.  
449  
450 "Kelada 01" means "Kelada Automated Test Methods for Total Cyanide,  
451 Acid Dissociable Cyanide, And Thiocyanate," Revision 1.2, August 2001,  
452 EPA 821/B-01/009, available from the National Technical Information  
453 Service (NTIS).  
454  
455 "m-ColiBlue24 Test" means "Total Coliforms and E. coli Membrane  
456 Filtration Method with m-ColiBlue24® Broth," available from Hach  
457 Company and USEPA, Water Resource Center.  
458  
459 "Membrane Filter Technique using Chromocult Doliform Agar" means  
460 "Chromocult Coliform Agar Presence/Absence Membrane Filter Test  
461 Method for Detection and Identification of Coliform Bacteria and  
462 Escherichia coli in Finished Waters," available from EMD Chemicals Inc.  
463  
464 "NA-MUG" means "Method 9222 G: Membrane Filter Technique for  
465 Members of the Coliform Group, MF Partition Procedures," available  
466 from American Public Health Association and American Waterworks  
467 Association.  
468  
469 "NCRP" means "National Council on Radiation Protection."  
470  
471 "NTIS" means "National Technical Information Service."  
472  
473 "New Jersey Radium Method" means "Determination of Radium 228 in

474  
475  
476  
477  
478  
479  
480  
481  
482  
483  
484  
485  
486  
487  
488  
489  
490  
491  
492  
493  
494  
495  
496  
497  
498  
499  
500  
501  
502  
503  
504  
505  
506  
507  
508  
509  
510  
511  
512  
513  
514  
515  
516

Drinking Water," available from the New Jersey Department of Environmental Protection.

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

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

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

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

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

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

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

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

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

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

517  
518 "Syngenta AG-625" means "Atrazine in Drinking Water by  
519 Immunoassay," February 2001 is available from Syngenta Crop  
520 Protection, Inc.  
521  
522 "Technical Bulletin 601" means "Technical Bulletin 601, Standard  
523 Method of Testing for Nitrate in Drinking Water," July 1994, available  
524 from Analytical Technology, Inc.  
525  
526 "Technical Notes on Drinking Water Methods" means the USEPA  
527 document by that title, October 1994, USEPA document number EPA  
528 600/R-94/173, available from NTIS.  
529  
530 "Technicon Methods" means "Fluoride in Water and Wastewater,"  
531 available from Bran & Luebbe.  
532  
533 "USDOE Manual" means "EML Procedures Manual," available from the  
534 United State Department of Energy.  
535  
536 "USEPA Asbestos Methods-100.1" means Method 100.1, "Analytical  
537 Method for Determination of Asbestos Fibers in Water," September 1983,  
538 available from NTIS.  
539  
540 "USEPA Asbestos Methods-100.2" means Method 100.2, "Determination  
541 of Asbestos Structures over 10-mm in Length in Drinking Water," June  
542 1994, available from NTIS.  
543  
544 "USEPA Environmental Inorganics Methods" means "Methods for the  
545 Determination of Inorganic Substances in Environmental Samples,"  
546 August 1993, available from NTIS.  
547  
548 "USEPA Environmental Metals Methods" means "Methods for the  
549 Determination of Metals in Environmental Samples," available from  
550 NTIS.  
551  
552 "USEPA Inorganic Methods" means "Methods for Chemical Analysis of  
553 Water and Wastes," March 1983, available from NTIS.  
554  
555 "USEPA Interim Radiochemical Methods" means "Interim Radiochemical  
556 Methodology for Drinking Water," EPA 600/4-75/008 (revised), March  
557 1976. Available from NTIS.  
558

559 "USEPA Method 1600" means "Method 1600: Enterococci in Water by  
560 Membrane Filtration Using Membrane-Enterococcus Indoxyl-b-D-  
561 Glucoside Agar (mEI)," available from USEPA, Water Resource Center.  
562

563 "USEPA Method 1601" means "Method 1601: Male-specific (F<sup>+</sup>) and  
564 Somatic Coliphage in Water by Two-step Enrichment Procedure,"  
565 available from USEPA, Water Resource Center.  
566

567 "USEPA Method 1602" means "Method 1602: Male-specific (F<sup>+</sup>) and  
568 Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure,"  
569 available from USEPA, Water Resource Center.  
570

571 "USEPA Method 1604" means "Method 1604: Total Coliforms and  
572 Escherichia coli in Water by Membrane Filtration Using a Simultaneous  
573 Detection Technique (MI Medium)," available from USEPA, Water  
574 Resource Center.  
575

576 "USEPA NERL Method 200.5 (rev. 4.2)" means Method 200.5, Revision  
577 4.2, "Determination of Trace Elements in Drinking Water by Axially  
578 Viewed Inductively-Coupled Plasma – Atomic Emission Spectrometry,"  
579 October 2003, EPA 600/R-06/115. Available from the USEPA, Office of  
580 Research and Development.  
581

582 ~~"USEPA Method 1622 (05)" means "Method 1622: Cryptosporidium in~~  
583 ~~Water by Filtration/IMS/FA," December 2005, available from USEPA,~~  
584 ~~Office of Ground Water and Drinking Water.~~  
585

586 ~~"USEPA Method 1622 (01)" means "Method 1622: Cryptosporidium in~~  
587 ~~Water by Filtration/IMS/FA," April 2001, available from USEPA, Office~~  
588 ~~of Ground Water and Drinking Water.~~  
589

590 ~~"USEPA Method 1622 (99)" means "Method 1622: Cryptosporidium in~~  
591 ~~Water by Filtration/IMS/FA," January 1999, available from USEPA,~~  
592 ~~Office of Ground Water and Drinking Water.~~  
593

594 ~~"USEPA Method 1623 (05)" means "Method 1623: Cryptosporidium and~~  
595 ~~Giardia in Water by Filtration/IMS/FA," December 2005, available from~~  
596 ~~the USEPA, Office of Ground Water and Drinking Water.~~  
597

598 ~~"USEPA Method 1623 (01)" means "Method 1623: Cryptosporidium and~~  
599 ~~Giardia in Water by Filtration/IMS/FA," April 2001, available from~~  
600 ~~USEPA, Office of Ground Water and Drinking Water.~~  
601

602 ~~"USEPA Method 1623 (99)" means "Method 1623: Cryptosporidium and~~  
 603 ~~Giardia in Water by Filtration/IMS/FA," April 1999, available from the~~  
 604 ~~USEPA, Office of Ground Water and Drinking Water.~~

605  
 606 "USEPA NERL Method 415.3 (rev. 1.1)" means Method 415.3, Revision  
 607 1.1, "Determination of Total Organic Carbon and Specific UV Absorbance  
 608 at 254 nm in Source Water and Drinking Water," USEPA, February 2005,  
 609 EPA 600/R-05/055. Available from the USEPA, Office of Research and  
 610 Development.

611  
 612 "USEPA OGWDW Methods" means one of the methods listed as  
 613 available from the USEPA, Office of Ground Water and Drinking Water  
 614 (Methods 317.0 (rev. 2.0), 326.0 (rev. 1.0), 327.0 (rev. 1.1), 515.4 (rev.  
 615 1.0), 531.2 (rev. 1.0), ~~and 552.3 (rev. 1.0), 1622 (99), 1622 (01), 1622~~  
 616 ~~(05), 1623 (99), 1623 (01), and 1623 (05)).~~

617  
 618 "USEPA Organic Methods" means "Methods for the Determination of  
 619 Organic Compounds in Drinking Water," July 1991, for Methods 502.2,  
 620 505, 507, 508, 508A, 515.1, and 531.1; "Methods for the Determination of  
 621 Organic Compounds in Drinking Water – Supplement I," July 1990, for  
 622 Methods 506, 547, 550, 550.1, and 551; "Methods for the Determination  
 623 of Organic Compounds in Drinking Water – Supplement II," August  
 624 1992, for Methods 504.1, 508.1, 515.2, 524.2, 525.2, 548.1, 549.1, 552.1,  
 625 552.2, and 555; ~~and "Methods for the Determination of Organic~~  
 626 ~~Compounds in Drinking Water – Supplement III," August 1995, for~~  
 627 ~~Methods 502.2, 524.2, 551.1, and 552.2. Method 515.4, "Determination~~  
 628 ~~of Chlorinated Acids in Drinking Water by Liquid-Liquid~~  
 629 ~~Microextraction, Derivatization and Fast Gas Chromatography with~~  
 630 ~~Electron Capture Detection," Revision 1.0, April 2000, EPA 815/B-~~  
 631 ~~00/001, and Method 531.2, "Measurement of N-methylcarbamoyloximes~~  
 632 ~~and N-methylcarbamates in Water by Direct Aqueous Injection HPLC~~  
 633 ~~with Postcolumn Derivatization," Revision 1.0, September 2001, EPA~~  
 634 ~~815/B-01/002, are both available on-line from USEPA, Office of Ground~~  
 635 ~~Water and Drinking Water.~~

636  
 637 "USEPA Organic and Inorganic Methods" means "Methods for the  
 638 Determination of Organic and Inorganic Compounds in Drinking Water,  
 639 Volume 1," EPA 815/R-00/014, PB2000-106981, August 2000. Available  
 640 from NTIS.

641  
 642 "USEPA Radioactivity Methods" means "Prescribed Procedures for  
 643 Measurement of Radioactivity in Drinking Water," EPA 600/4-80/032,  
 644 August 1980. Available from NTIS.

645  
646  
647  
648  
649  
650  
651  
652  
653  
654  
655  
656  
657  
658  
659  
660  
661  
662  
663  
664  
665  
666  
667  
668  
669  
670  
671  
672  
673  
674  
675  
676  
677  
678  
679  
680  
681  
682  
683  
684  
685  
686  
687

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

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

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

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

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

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

ALPKEM, Division of OI Analytical, P.O. Box 9010, College Station, TX 77842-9010, telephone: 979-690-1711, Internet: [www.oico.com](http://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](http://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," 17<sup>th</sup> Edition, 1989 (referred to as "Standard Methods, 17<sup>th</sup> ed."). See the methods listed separately for the same references under American Waterworks Association.

"Standard Methods for the Examination of Water and



688 Wastewater," 18<sup>th</sup> Edition, 1992, including "Supplement to the 18<sup>th</sup>  
 689 Edition of Standard Methods for the Examination of Water and  
 690 Wastewater," 1994 (collectively referred to as "Standard Methods,  
 691 18<sup>th</sup> ed."). See the methods listed separately for the same  
 692 references under American Waterworks Association.

693  
 694 "Standard Methods for the Examination of Water and  
 695 Wastewater," 19<sup>th</sup> Edition, 1995 (referred to as "Standard  
 696 Methods, 19<sup>th</sup> ed."). See the methods listed separately for the  
 697 same references under American Waterworks Association.

698  
 699 "Standard Methods for the Examination of Water and  
 700 Wastewater," 20<sup>th</sup> Edition, 1998 (referred to as "Standard Methods,  
 701 20<sup>th</sup> ed."). See the methods listed separately for the same  
 702 references under American Waterworks Association.

703  
 704 "Standard Methods for the Examination of Water and  
 705 Wastewater," 21<sup>st</sup> Edition, 2005 (referred to as "Standard Methods,  
 706 21<sup>st</sup> ed."). See the methods listed separately for the same  
 707 references under American Waterworks Association.

708  
 709 American Society for Microbiology, 1752 N Street N.W., Washington,  
 710 DC 20036, 202-737-3600:

711  
 712 "Evaluation of Enterolert for Enumeration of Enterococci in  
 713 Recreational Waters," Applied and Environmental Microbiology,  
 714 Oct. 1996, vol. 62, no. 10, p. 3881 (referred to as "Enterolert"),  
 715 referenced in Section 611.802.

716  
 717 BOARD NOTE: At the table to 40 CFR 141.402(c)(2), USEPA  
 718 approved the method as described in the above literature review.  
 719 The method itself is embodied in the printed instructions to the  
 720 proprietary kit available from IDEXX Laboratories, Inc.  
 721 (accessible on-line and available by download from [www.asm.org](http://www.asm.org),  
 722 as "Enterolert™ Procedure"). ASTM approved the method as  
 723 "Standard Test Method for Enterococci in Water Using  
 724 Enterolert™," which is available in two versions from ASTM:  
 725 ASTM D 6503-99 (superseded) and ASTM D 6503-99 (2005).  
 726 While it is more conventional to incorporate the method as  
 727 presented in the kit instructions or as approved by ASTM by  
 728 reference, the Board is constrained to incorporate the version that  
 729 appears in the technical literature by reference, which is the  
 730 version that USEPA has explicitly approved.

731  
732 AWWA. American Water Works Association et al., 6666 West Quincy  
733 Ave., Denver, CO 80235 (303-794-7711).  
734  
735 "National Field Evaluation of a Defined Substrate Method for the  
736 Simultaneous Enumeration of Total Coliforms and Escherichia coli  
737 for Drinking Water: Comparison with the Standard Multiple Tube  
738 Fermentation Method," S.C. Edberg, M.J. Allen & D.B. Smith,  
739 Applied Environmental Microbiology, vol. 54, iss. 6, pp 1595-  
740 1601 (1988), referenced in Appendix D to this Part.  
741  
742 "Standard Methods for the Examination of Water and  
743 Wastewater," 13<sup>th</sup> Edition, 1971 (referred to as "Standard Methods,  
744 13<sup>th</sup> ed." ).  
745  
746 Method 302, Gross Alpha and Gross Beta Radioactivity in  
747 Water (Total, Suspended, and Dissolved), referenced in  
748 Section 611.720.  
749  
750 Method 303, Total Radioactive Strontium and Strontium 90  
751 in Water, referenced in Section 611.720.  
752  
753 Method 304, Radium in Water by Precipitation, referenced  
754 in Section 611.720.  
755  
756 Method 305, Radium 226 by Radon in Water (Soluble,  
757 Suspended, and Total), referenced in Section 611.720.  
758  
759 Method 306, Tritium in Water, referenced in Section  
760 611.720.  
761  
762 "Standard Methods for the Examination of Water and  
763 Wastewater," 17<sup>th</sup> Edition, 1989 (referred to as "Standard Methods,  
764 17<sup>th</sup> ed." ).  
765  
766 Method 7110 B, Gross Alpha and Gross Beta Radioactivity  
767 in Water (Total, Suspended, and Dissolved), referenced in  
768 Section 611.720.  
769  
770 Method 7500-Cs B, Radioactive Cesium, Precipitation  
771 Method, referenced in Section 611.720.  
772  
773 Method 7500-<sup>3</sup>H B, Tritium in Water, referenced in Section

774	611.720.
775	
776	Method 7500-I B, Radioactive Iodine, Precipitation
777	Method, referenced in Section 611.720.
778	
779	Method 7500-I C, Radioactive Iodine, Ion-Exchange
780	Method, referenced in Section 611.720.
781	
782	Method 7500-I D, Radioactive Iodine, Distillation Method,
783	referenced in Section 611.720.
784	
785	Method 7500-Ra B, Radium in Water by Precipitation,
786	referenced in Section 611.720.
787	
788	Method 7500-Ra C, Radium 226 by Radon in Water
789	(Soluble, Suspended, and Total), referenced in Section
790	611.720.
791	
792	Method 7500-Ra D, Radium, Sequential Precipitation
793	Method (Proposed), referenced in Section 611.720.
794	
795	Method 7500-Sr B, Total Radioactive Strontium and
796	Strontium 90 in Water, referenced in Section 611.720.
797	
798	Method 7500-U B, Uranium, Radiochemical Method
799	(Proposed), referenced in Section 611.720.
800	
801	Method 7500-U C, Uranium, Isotopic Method (Proposed),
802	referenced in Section 611.720.
803	
804	"Standard Methods for the Examination of Water and
805	Wastewater," 18 <sup>th</sup> Edition, 1992 (referred to as "Standard Methods,
806	18 <sup>th</sup> ed.").
807	
808	Method 2130 B, Turbidity, Nephelometric Method,
809	referenced in Section 611.531.
810	
811	Method 2320 B, Alkalinity, Titration Method, referenced in
812	Section 611.611.
813	
814	Method 2510 B, Conductivity, Laboratory Method,
815	referenced in Section 611.611.
816	

817	Method 2550, Temperature, Laboratory and Field Methods,
818	referenced in Section 611.611.
819	
820	Method 3111 B, Metals by Flame Atomic Absorption
821	Spectrometry, Direct Air-Acetylene Flame Method,
822	referenced in Sections 611.611 and 611.612.
823	
824	Method 3111 D, Metals by Flame Atomic Absorption
825	Spectrometry, Direct Nitrous Oxide-Acetylene Flame
826	Method, referenced in Section 611.611.
827	
828	Method 3112 B, Metals by Cold-Vapor Atomic Absorption
829	Spectrometry, Cold-Vapor Atomic Absorption
830	Spectrometric Method, referenced in Section 611.611.
831	
832	Method 3113 B, Metals by Electrothermal Atomic
833	Absorption Spectrometry, Electrothermal Atomic
834	Absorption Spectrometric Method, referenced in Sections
835	611.611 and 611.612.
836	
837	Method 3114 B, Metals by Hydride Generation/Atomic
838	Absorption Spectrometry, Manual Hydride
839	Generation/Atomic Absorption Spectrometric Method,
840	referenced in Section 611.611.
841	
842	Method 3120 B, Metals by Plasma Emission Spectroscopy,
843	Inductively-Coupled Plasma (ICP) Method, referenced in
844	Sections 611.611 and 611.612.
845	
846	Method 3500-Ca D, Calcium, EDTA Titrimetric Method,
847	referenced in Section 611.611.
848	
849	Method 3500-Mg E, Magnesium, Calculation Method,
850	referenced in Section 611.611.
851	
852	Method 4110 B, Determination of Anions by Ion
853	Chromatography, Ion Chromatography with Chemical
854	Suppression of Eluent Conductivity, referenced in Section
855	611.611.
856	
857	Method 4500-CN <sup>-</sup> C, Cyanide, Total Cyanide after
858	Distillation, referenced in Section 611.611.
859	

860	Method 4500-CN <sup>-</sup> E, Cyanide, Colorimetric Method,
861	referenced in Section 611.611.
862	
863	Method 4500-CN <sup>-</sup> F, Cyanide, Cyanide-Selective Electrode
864	Method, referenced in Section 611.611.
865	
866	Method 4500-CN <sup>-</sup> G, Cyanide, Cyanides Amenable to
867	Chlorination after Distillation, referenced in Section
868	611.611.
869	
870	Method 4500-Cl D, Chlorine, Amperometric Titration
871	Method, referenced in Section 611.531.
872	
873	Method 4500-Cl E, Chlorine, Low-Level Amperometric
874	Titration Method, referenced in Section 611.531.
875	
876	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric
877	Method, referenced in Section 611.531.
878	
879	Method 4500-Cl G, Chlorine, DPD Colorimetric Method,
880	referenced in Section 611.531.
881	
882	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS)
883	Method, referenced in Section 611.531.
884	
885	Method 4500-Cl I, Chlorine, Iodometric Electrode Method,
886	referenced in Section 611.531.
887	
888	Method 4500-ClO <sub>2</sub> C, Chlorine Dioxide, Amperometric
889	Method I, referenced in Section 611.531.
890	
891	Method 4500-ClO <sub>2</sub> D, Chlorine Dioxide, DPD Method,
892	referenced in Section 611.531.
893	
894	Method 4500-ClO <sub>2</sub> E, Chlorine Dioxide, Amperometric
895	Method II (Proposed), referenced in Section 611.531.
896	
897	Method 4500-F <sup>-</sup> B, Fluoride, Preliminary Distillation Step,
898	referenced in Section 611.611.
899	
900	Method 4500-F <sup>-</sup> C, Fluoride, Ion-Selective Electrode
901	Method, referenced in Section 611.611.
902	

903	Method 4500-F <sup>-</sup> D, Fluoride, SPADNS Method, referenced
904	in Section 611.611.
905	
906	Method 4500-F <sup>-</sup> E, Fluoride, Complexone Method,
907	referenced in Section 611.611.
908	
909	Method 4500-H <sup>+</sup> B, pH Value, Electrometric Method,
910	referenced in Section 611.611.
911	
912	Method 4500-NO <sub>2</sub> <sup>-</sup> B, Nitrogen (Nitrite), Colorimetric
913	Method, referenced in Section 611.611.
914	
915	Method 4500-NO <sub>3</sub> <sup>-</sup> D, Nitrogen (Nitrate), Nitrate Electrode
916	Method, referenced in Section 611.611.
917	
918	Method 4500-NO <sub>3</sub> <sup>-</sup> E, Nitrogen (Nitrate), Cadmium
919	Reduction Method, referenced in Section 611.611.
920	
921	Method 4500-NO <sub>3</sub> <sup>-</sup> F, Nitrogen (Nitrate), Automated
922	Cadmium Reduction Method, referenced in Section
923	611.611.
924	
925	Method 4500-O <sub>3</sub> B, Ozone (Residual) (Proposed), Indigo
926	Colorimetric Method, referenced in Section 611.531.
927	
928	Method 4500-P E, Phosphorus, Ascorbic Acid Method,
929	referenced in Section 611.611.
930	
931	Method 4500-P F, Phosphorus, Automated Ascorbic Acid
932	Reduction Method, referenced in Section 611.611.
933	
934	Method 4500-Si D, Silica, Molybdosilicate Method,
935	referenced in Section 611.611.
936	
937	Method 4500-Si E, Silica, Heteropoly Blue Method,
938	referenced in Section 611.611.
939	
940	Method 4500-Si F, Silica, Automated Method for
941	Molybdate-Reactive Silica, referenced in Section 611.611.
942	
943	Method 6651, Glyphosate Herbicide (Proposed), referenced
944	in Section 611.645.
945	

946	Method 7110 B, Gross Alpha and Beta Radioactivity
947	(Total, Suspended, and Dissolved), Evaporation Method for
948	Gross Alpha-Beta, referenced in Section 611.720.
949	
950	Method 7110 C, Gross Alpha and Beta Radioactivity
951	(Total, Suspended, and Dissolved), Coprecipitation Method
952	for Gross Alpha Radioactivity in Drinking Water
953	(Proposed), referenced in Section 611.720.
954	
955	Method 7500-Cs B, Radioactive Cesium, Precipitation
956	Method, referenced in Section 611.720.
957	
958	Method 7500- <sup>3</sup> H B, Tritium, Liquid Scintillation
959	Spectrometric Method, referenced in Section 611.720.
960	
961	Method 7500-I B, Radioactive Iodine, Precipitation
962	Method, referenced in Section 611.720.
963	
964	Method 7500-I C, Radioactive Iodine, Ion-Exchange
965	Method, referenced in Section 611.720.
966	
967	Method 7500-I D, Radioactive Iodine, Distillation Method,
968	referenced in Section 611.720.
969	
970	Method 7500-Ra B, Radium, Precipitation Method,
971	referenced in Section 611.720.
972	
973	Method 7500-Ra C, Radium, Emanation Method,
974	referenced in Section 611.720.
975	
976	Method 7500-Ra D, Radium, Sequential Precipitation
977	Method (Proposed), referenced in Section 611.720.
978	
979	Method 7500-Sr B, Total Radioactive Strontium and
980	Strontium 90, Precipitation Method, referenced in Section
981	611.720.
982	
983	Method 7500-U B, Uranium, Radiochemical Method
984	(Proposed), referenced in Section 611.720.
985	
986	Method 7500-U C, Uranium, Isotopic Method (Proposed),
987	referenced in Section 611.720.
988	

989	Method 9215 B, Heterotrophic Plate Count, Pour Plate
990	Method, referenced in Section 611.531.
991	
992	Method 9221 A, Multiple-Tube Fermentation Technique
993	for Members of the Coliform Group, Introduction,
994	referenced in Sections 611.526 and 611.531.
995	
996	Method 9221 B, Multiple-Tube Fermentation Technique
997	for Members of the Coliform Group, Standard Total
998	Coliform Fermentation Technique, referenced in Sections
999	611.526 and 611.531.
1000	
1001	Method 9221 C, Multiple-Tube Fermentation Technique
1002	for Members of the Coliform Group, Estimation of
1003	Bacterial Density, referenced in Sections 611.526 and
1004	611.531.
1005	
1006	Method 9221 D, Multiple-Tube Fermentation Technique
1007	for Members of the Coliform Group, Presence-Absence (P-
1008	A) Coliform Test, referenced in Section 611.526.
1009	
1010	Method 9221 E, Multiple-Tube Fermentation Technique
1011	for Members of the Coliform Group, Fecal Coliform
1012	Procedure, referenced in Sections 611.526 and 611.531.
1013	
1014	Method 9222 A, Membrane Filter Technique for Members
1015	of the Coliform Group, Introduction, referenced in Sections
1016	611.526 and 611.531.
1017	
1018	Method 9222 B, Membrane Filter Technique for Members
1019	of the Coliform Group, Standard Total Coliform Membrane
1020	Filter Procedure, referenced in Sections 611.526 and
1021	611.531.
1022	
1023	Method 9222 C, Membrane Filter Technique for Members
1024	of the Coliform Group, Delayed-Incubation Total Coliform
1025	Procedure, referenced in Sections 611.526 and 611.531.
1026	
1027	Method 9222 D, Membrane Filter Technique for Members
1028	of the Coliform Group, Fecal Coliform Membrane Filter
1029	Procedure, referenced in Section 611.531.
1030	
1031	Method 9223, Chromogenic Substrate Coliform Test



(Proposed) (also referred to as the variations "Autoanalysis Colilert System" and "Colisure Test"), referenced in Sections 611.526, and 611.531.

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

"Supplement to the 18<sup>th</sup> 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," 19<sup>th</sup> Edition, 1995 (referred to as "Standard Methods, 19<sup>th</sup> 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

1032  
1033  
1034  
1035  
1036  
1037  
1038  
1039  
1040  
1041  
1042  
1043  
1044  
1045  
1046  
1047  
1048  
1049  
1050  
1051  
1052  
1053  
1054  
1055  
1056  
1057  
1058  
1059  
1060  
1061  
1062  
1063  
1064  
1065  
1066  
1067  
1068  
1069  
1070  
1071  
1072  
1073  
1074

1075	Absorption Spectrometry, Electrothermal Atomic
1076	Absorption Spectrometric Method, referenced in Sections
1077	611.611 and 611.612.
1078	
1079	Method 3114 B, Metals by Hydride Generation/Atomic
1080	Absorption Spectrometry, Manual Hydride
1081	Generation/Atomic Absorption Spectrometric Method,
1082	referenced in Section 611.611.
1083	
1084	Method 3120 B, Metals by Plasma Emission Spectroscopy,
1085	Inductively_Coupled Plasma (ICP) Method, referenced in
1086	Sections 611.611 and 611.612.
1087	
1088	Method 3500-Ca D, Calcium, EDTA Titrimetric Method,
1089	referenced in Section 611.611.
1090	
1091	Method 3500-Mg E, Magnesium, Calculation Method,
1092	referenced in Section 611.611.
1093	
1094	Method 4110 B, Determination of Anions by Ion
1095	Chromatography, Ion Chromatography with Chemical
1096	Suppression of Eluent Conductivity, referenced in Section
1097	611.611.
1098	
1099	Method 4500-Cl D, Chlorine, Amperometric Titration
1100	Method, referenced in Sections 611.381 and 611.531.
1101	
1102	Method 4500-Cl E, Chlorine, Low-Level Amperometric
1103	Titration Method, referenced in Sections 611.381 and
1104	611.531.
1105	
1106	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric
1107	Method, referenced in Sections 611.381 and 611.531.
1108	
1109	Method 4500-Cl G, Chlorine, DPD Colorimetric Method,
1110	referenced in Sections 611.381 and 611.531.
1111	
1112	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS)
1113	Method, referenced in Sections 611.381 and 611.531.
1114	
1115	Method 4500-Cl I, Chlorine, Iodometric Electrode Method,
1116	referenced in Sections 611.381 and 611.531.
1117	

1118	Method 4500-ClO <sub>2</sub> C, Chlorine Dioxide, Amperometric Method I, referenced in Section 611.531.
1119	
1120	
1121	Method 4500-ClO <sub>2</sub> D, Chlorine Dioxide, DPD Method, referenced in Sections 611.381 and 611.531.
1122	
1123	
1124	Method 4500-ClO <sub>2</sub> E, Chlorine Dioxide, Amperometric Method II, referenced in Sections 611.381 and 611.531.
1125	
1126	
1127	Method 4500-CN <sup>-</sup> C, Cyanide, Total Cyanide after Distillation, referenced in Section 611.611.
1128	
1129	
1130	Method 4500-CN <sup>-</sup> E, Cyanide, Colorimetric Method, referenced in Section 611.611.
1131	
1132	
1133	Method 4500-CN <sup>-</sup> F, Cyanide, Cyanide-Selective Electrode Method, referenced in Section 611.611.
1134	
1135	
1136	Method 4500-CN <sup>-</sup> G, Cyanide, Cyanides Amenable to Chlorination after Distillation, referenced in Section 611.611.
1137	
1138	
1139	Method 4500-F <sup>-</sup> B, Fluoride, Preliminary Distillation Step, referenced in Section 611.611.
1140	
1141	
1142	Method 4500-F <sup>-</sup> C, Fluoride, Ion-Selective Electrode Method, referenced in Section 611.611.
1143	
1144	
1145	Method 4500-F <sup>-</sup> D, Fluoride, SPADNS Method, referenced in Section 611.611.
1146	
1147	
1148	Method 4500-F <sup>-</sup> E, Fluoride, Complexone Method, referenced in Section 611.611.
1149	
1150	
1151	Method 4500-H <sup>+</sup> B, pH Value, Electrometric Method, referenced in Section 611.611.
1152	
1153	
1154	Method 4500-NO <sub>2</sub> <sup>-</sup> B, Nitrogen (Nitrite), Colorimetric Method, referenced in Section 611.611.
1155	
1156	
1157	Method 4500-NO <sub>3</sub> <sup>-</sup> D, Nitrogen (Nitrate), Nitrate Electrode Method, referenced in Section 611.611.
1158	
1159	
1160	

1161	Method 4500-NO <sub>3</sub> <sup>-</sup> E, Nitrogen (Nitrate), Cadmium
1162	Reduction Method, referenced in Section 611.611.
1163	
1164	Method 4500-NO <sub>3</sub> <sup>-</sup> F, Nitrogen (Nitrate), Automated
1165	Cadmium Reduction Method, referenced in Section
1166	611.611.
1167	
1168	Method 4500-O <sub>3</sub> B, Ozone (Residual) (Proposed), Indigo
1169	Colorimetric Method, referenced in Section 611.531.
1170	
1171	Method 4500-P E, Phosphorus, Ascorbic Acid Method,
1172	referenced in Section 611.611.
1173	
1174	Method 4500-P F, Phosphorus, Automated Ascorbic Acid
1175	Reduction Method, referenced in Section 611.611.
1176	
1177	Method 4500-Si D, Silica, Molybdosilicate Method,
1178	referenced in Section 611.611.
1179	
1180	Method 4500-Si E, Silica, Heteropoly Blue Method,
1181	referenced in Section 611.611.
1182	
1183	Method 4500-Si F, Silica, Automated Method for
1184	Molybdate-Reactive Silica, referenced in Section 611.611.
1185	
1186	Method 5910 B, UV Absorbing Organic Constituents,
1187	Ultraviolet Absorption Method, referenced in Section
1188	611.381.
1189	
1190	Method 6251 B, Disinfection Byproducts: Haloacetic
1191	Acids and Trichlorophenol, Micro Liquid-Liquid
1192	Extraction Gas Chromatographic Method, referenced in
1193	Section 611.381.
1194	
1195	Method 6610, Carbamate Pesticide Method, referenced in
1196	Section 611.645.
1197	
1198	Method 6651, Glyphosate Herbicide (Proposed), referenced
1199	in Section 611.645.
1200	
1201	Method 7110 B, Gross Alpha and Gross Beta
1202	Radioactivity, Evaporation Method for Gross Alpha-Beta,
1203	referenced in Section 611.720.

1204	
1205	
1206	
1207	
1208	
1209	
1210	
1211	
1212	
1213	
1214	
1215	
1216	
1217	
1218	
1219	
1220	
1221	
1222	
1223	
1224	
1225	
1226	
1227	
1228	
1229	
1230	
1231	
1232	
1233	
1234	
1235	
1236	
1237	
1238	
1239	
1240	
1241	
1242	
1243	
1244	
1245	
1246	

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

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

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

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

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

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

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

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

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

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

Method 7500-Sr B, Total 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.

1247	Method 9215 B, Heterotrophic Plate Count, Pour Plate
1248	Method, referenced in Section 611.531.
1249	
1250	Method 9221 A, Multiple-Tube Fermentation Technique
1251	for Members of the Coliform Group, Introduction,
1252	referenced in Sections 611.526 and 611.531.
1253	
1254	Method 9221 B, Multiple-Tube Fermentation Technique
1255	for Members of the Coliform Group, Standard Total
1256	Coliform Fermentation Technique, referenced in Sections
1257	611.526 and 611.531.
1258	
1259	Method 9221 C, Multiple-Tube Fermentation Technique
1260	for Members of the Coliform Group, Estimation of
1261	Bacterial Density, referenced in Sections 611.526 and
1262	611.531.
1263	
1264	Method 9221 D, Multiple-Tube Fermentation Technique
1265	for Members of the Coliform Group, Presence-Absence (P-
1266	A) Coliform Test, referenced in Section 611.526.
1267	
1268	Method 9221 E, Multiple-Tube Fermentation Technique
1269	for Members of the Coliform Group, Fecal Coliform
1270	Procedure, referenced in Sections 611.526 and 611.531.
1271	
1272	Method 9222 A, Membrane Filter Technique for Members
1273	of the Coliform Group, Introduction, referenced in Sections
1274	611.526 and 611.531.
1275	
1276	Method 9222 B, Membrane Filter Technique for Members
1277	of the Coliform Group, Standard Total Coliform Membrane
1278	Filter Procedure, referenced in Sections 611.526 and
1279	611.531.
1280	
1281	Method 9222 C, Membrane Filter Technique for Members
1282	of the Coliform Group, Delayed-Incubation Total Coliform
1283	Procedure, referenced in Sections 611.526 and 611.531.
1284	
1285	Method 9222 D, Membrane Filter Technique for Members
1286	of the Coliform Group, Fecal Coliform Membrane Filter
1287	Procedure, referenced in Section 611.531.
1288	

1289 Method 9222 G, Membrane Filter Technique for Members  
1290 of the Coliform Group, MF Partition Procedures,  
1291 referenced in Section 611.526.  
1292  
1293 Method 9223, Chromogenic Substrate Coliform Test (also  
1294 referred to as the variations "Autoanalysis Colilert System"  
1295 and "Colisure Test"), referenced in Sections 611.526, and  
1296 611.531.  
1297  
1298 Method 9223 B, Chromogenic Substrate Coliform Test  
1299 (Proposed), referenced in Section 611.1004.  
1300  
1301 "Supplement to the 19<sup>th</sup> Edition of Standard Methods for the  
1302 Examination of Water and Wastewater," American Public Health  
1303 Association, 1996.  
1304  
1305 Method 5310 B, TOC, Combustion-Infrared Method,  
1306 referenced in Section 611.381.  
1307  
1308 Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation  
1309 Method, referenced in Section 611.381.  
1310  
1311 Method 5310 D, TOC, Wet-Oxidation Method, referenced  
1312 in Section 611.381.  
1313  
1314 "Standard Methods for the Examination of Water and  
1315 Wastewater," 20<sup>th</sup> Edition, 1998 (referred to as "Standard Methods,  
1316 20<sup>th</sup> ed.").  
1317  
1318 Method 2130 B, Turbidity, Nephelometric Method,  
1319 referenced in Section 611.531.  
1320  
1321 Method 2320 B, Alkalinity, Titration Method, referenced in  
1322 Section 611.611.  
1323  
1324 Method 2510 B, Conductivity, Laboratory Method,  
1325 referenced in Section 611.611.  
1326  
1327 Method 2550, Temperature, Laboratory, and Field  
1328 Methods, referenced in Section 611.611.  
1329

1330	Method 3120 B, Metals by Plasma Emission Spectroscopy, Inductively-Coupled Plasma (ICP) Method, referenced in <u>Sections 611.611 and Section 611.612.</u>
1331	
1332	
1333	
1334	Method 3500-Ca B, Calcium, EDTA Titrimetric Method, referenced in Section 611.611.
1335	
1336	
1337	Method 3500-Mg B, Magnesium, EDTA Titrimetric Method, referenced in Section 611.611.
1338	
1339	
1340	Method 4110 B, Determination of Anions by Ion Chromatography, Ion Chromatography with Chemical Suppression of Eluent Conductivity, referenced in Section 611.611.
1341	
1342	
1343	
1344	
1345	Method 4500-CN <sup>-</sup> C, Cyanide, Total Cyanide after Distillation, referenced in Section 611.611.
1346	
1347	
1348	Method 4500-CN <sup>-</sup> E, Cyanide, Colorimetric Method, referenced in Section 611.611.
1349	
1350	
1351	Method 4500-CN <sup>-</sup> F, Cyanide, Cyanide-Selective Electrode Method, referenced in Section 611.611.
1352	
1353	
1354	
1355	Method 4500-CN <sup>-</sup> G, Cyanide, Cyanides Amenable to Chlorination after Distillation, referenced in Section 611.611.
1356	
1357	
1358	Method 4500-Cl D, Chlorine, Amperometric Titration Method, referenced in Section 611.531.
1359	
1360	
1361	Method 4500-Cl E, Chlorine, Low-Level Amperometric Titration Method, referenced in Section 611.531.
1362	
1363	
1364	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric Method, referenced in Section 611.531.
1365	
1366	
1367	Method 4500-Cl G, Chlorine, DPD Colorimetric Method, referenced in Section 611.531.
1368	
1369	
1370	
1371	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS) Method, referenced in Section 611.531.
1372	



1373	Method 4500-Cl I, Chlorine, Iodometric Electrode Method,
1374	referenced in Section 611.531.
1375	
1376	Method 4500-ClO <sub>2</sub> C, Chlorine Dioxide, Amperometric
1377	Method I, referenced in Section 611.531.
1378	
1379	Method 4500-ClO <sub>2</sub> D, Chlorine Dioxide, DPD Method,
1380	referenced in Section 611.531.
1381	
1382	Method 4500-ClO <sub>2</sub> E, Chlorine Dioxide, Amperometric
1383	Method II (Proposed), referenced in Section <del>and</del> 611.531.
1384	
1385	Method 4500-F <sup>-</sup> B, Fluoride, Preliminary Distillation Step,
1386	referenced in Section 611.611.
1387	
1388	Method 4500-F <sup>-</sup> C, Fluoride, Ion-Selective Electrode
1389	Method, referenced in Section 611.611.
1390	
1391	Method 4500-F <sup>-</sup> D, Fluoride, SPADNS Method, referenced
1392	in Section 611.611.
1393	
1394	Method 4500-F <sup>-</sup> E, Fluoride, Complexone Method,
1395	referenced in Section 611.611.
1396	
1397	Method 4500-H <sup>+</sup> B, pH Value, Electrometric Method,
1398	referenced in Section 611.611.
1399	
1400	Method 4500-NO <sub>2</sub> <sup>-</sup> B, Nitrogen (Nitrite), Colorimetric
1401	Method, referenced in Section 611.611.
1402	
1403	Method 4500-NO <sub>3</sub> <sup>-</sup> D, Nitrogen (Nitrate), Nitrate Electrode
1404	Method, referenced in Section 611.611.
1405	
1406	Method 4500-NO <sub>3</sub> <sup>-</sup> E, Nitrogen (Nitrate), Cadmium
1407	Reduction Method, referenced in Section 611.611.
1408	
1409	Method 4500-NO <sub>3</sub> <sup>-</sup> F, Nitrogen (Nitrate), Automated
1410	Cadmium Reduction Method, referenced in Section
1411	611.611.
1412	
1413	Method 4500-O <sub>3</sub> B, Ozone (Residual) (Proposed), Indigo
1414	Colorimetric Method, referenced in Section 611.531.
1415	

1416	Method 4500-P E, Phosphorus, Ascorbic Acid Method, referenced in Section 611.611.
1417	
1418	
1419	Method 4500-P F, Phosphorus, Automated Ascorbic Acid Reduction Method, referenced in Section 611.611.
1420	
1421	
1422	Method 4500-Si C, Silica, Molybdosilicate Method, referenced in Section 611.611.
1423	
1424	
1425	Method 4500-Si D, Silica, Heteropoly Blue Method, referenced in Section 611.611.
1426	
1427	
1428	Method 4500-Si E, Silica, Automated Method for Molybdate-Reactive Silica, referenced in Section 611.611.
1429	
1430	
1431	Method 5910 B, UV-Absorbing Organic Constituents, Ultraviolet Absorption Method, referenced in Sections 611.381 and 611.382.
1432	
1433	
1434	Method 6251, Disinfection By-Products: Haloacetic Acids and Trichlorophenol, referenced in Section 611.381.
1435	
1436	
1437	Method 6610, Carbamate Pesticide Method, referenced in Section 611.645.
1438	
1439	
1440	Method 6651, Glyphosate Herbicide (Proposed), referenced in Section 611.645.
1441	
1442	
1443	Method 7110 B, Gross Alpha and Gross Beta Radioactivity, Evaporation Method for Gross Alpha-Beta, referenced in Section 611.720.
1444	
1445	
1446	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.
1447	
1448	
1449	Method <del>7120</del> 7120-B, Gamma-Emitting Radionuclides, <del>Gamma Spectrometric Method</del> , referenced in Section 611.720.
1450	
1451	
1452	Method 7500-Cs B, Radioactive Cesium, Precipitation Method, referenced in Section 611.720.
1453	
1454	
1455	
1456	
1457	
1458	

1459	
1460	Method 7500- <sup>3</sup> H B, Tritium, Liquid Scintillation
1461	Spectrometric Method, referenced in Section 611.720.
1462	
1463	Method 7500-I B, Radioactive Iodine, Precipitation
1464	Method, referenced in Section 611.720.
1465	
1466	Method 7500-I C, Radioactive Iodine, Ion-Exchange
1467	Method, referenced in Section 611.720.
1468	
1469	Method 7500-I D, Radioactive Iodine, Distillation Method,
1470	referenced in Section 611.720.
1471	
1472	Method 7500-Ra B, Radium, Precipitation Method,
1473	referenced in Section 611.720.
1474	
1475	Method 7500-Ra C, Radium, Emanation Method,
1476	referenced in Section 611.720.
1477	
1478	<u>Method 7500-Ra D, Radium, Sequential Precipitation</u>
1479	<u>Method, referenced in Section 611.720.</u>
1480	
1481	Method 7500-Sr B, Total Radioactive Strontium and
1482	Strontium 90, Precipitation Method, referenced in Section
1483	611.720.
1484	
1485	Method 7500-U B, Uranium, Radiochemical Method,
1486	referenced in Section 611.720.
1487	
1488	Method 7500-U C, Uranium, Isotopic Method, referenced
1489	in Section 611.720.
1490	
1491	Method 9215 B, Heterotrophic Plate Count, Pour Plate
1492	Method, referenced in Section 611.531.
1493	
1494	Method 9221 A, Multiple-Tube Fermentation Technique
1495	for Members of the Coliform Group, Introduction,
1496	referenced in Sections 611.526 and 611.531.
1497	
1498	Method 9221 B, Multiple-Tube Fermentation Technique
1499	for Members of the Coliform Group, Standard Total
1500	Coliform Fermentation Technique, referenced in Sections
1501	611.526 and 611.531.

1502	
1503	
1504	
1505	
1506	
1507	
1508	
1509	
1510	
1511	
1512	
1513	
1514	
1515	
1516	
1517	
1518	
1519	
1520	
1521	
1522	
1523	
1524	
1525	
1526	
1527	
1528	
1529	
1530	
1531	
1532	
1533	
1534	
1535	
1536	
1537	
1538	
1539	
1540	
1541	
1542	
1543	
1544	

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

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

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

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

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

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

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

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

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

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

1545  
1546 Method 9223 B, Chromogenic Substrate Coliform Test  
1547 (also referred to as the variations "Autoanalysis Colilert  
1548 System" and "Colisure Test"), referenced in Sections  
1549 611.802 and 611.1004.  
1550  
1551 Method 9230 B, Fecal Streptococcus and Enterococcus  
1552 Groups, Multiple Tube Techniques, referenced in Section  
1553 611.802.  
1554  
1555 Method 9230 C, Fecal Streptococcus and Enterococcus  
1556 Groups, Membrane Filter Techniques, referenced in  
1557 Section 611.802.  
1558  
1559 "Standard Methods for the Examination of Water and  
1560 Wastewater," 21<sup>st</sup> Edition, 2005 (referred to as "Standard Methods,  
1561 21<sup>st</sup> ed.").

1562  
1563 Method 2130 B, Turbidity, Nephelometric Method,  
1564 referenced in Section 611.531.  
1565  
1566 Method 2320 B, Alkalinity, Titration Method, referenced in  
1567 Section 611.611.  
1568  
1569 Method 2510 B, Conductivity, Laboratory Method,  
1570 referenced in Section 611.611.  
1571  
1572 Method 2550, Temperature, Laboratory, and Field  
1573 Methods, referenced in Section 611.611.  
1574  
1575 Method 3111 B, Metals by Flame Atomic Absorption  
1576 Spectrometry, Direct Air-Acetylene Flame Method,  
1577 referenced in Sections 611.611 and 611.612.  
1578  
1579 Method 3111 D, Metals by Flame Atomic Absorption  
1580 Spectrometry, Direct Nitrous Oxide-Acetylene Flame  
1581 Method, referenced in Section 611.611.  
1582  
1583 Method 3112 B, Metals by Cold-Vapor Atomic Absorption  
1584 Spectrometry, Cold-Vapor Atomic Absorption  
1585 Spectrometric Method, referenced in Section 611.611.  
1586

1587	<u>Method 3113 B, Metals by Electrothermal Atomic</u>
1588	<u>Absorption Spectrometry, Electrothermal Atomic</u>
1589	<u>Absorption Spectrometric Method, referenced in Sections</u>
1590	<u>611.611 and 611.612.</u>
1591	
1592	<u>Method 3114 B, Metals by Hydride Generation/Atomic</u>
1593	<u>Absorption Spectrometry, Manual Hydride</u>
1594	<u>Generation/Atomic Absorption Spectrometric Method,</u>
1595	<u>referenced in Section 611.611.</u>
1596	
1597	<u>Method 3120 B, Metals by Plasma Emission Spectroscopy,</u>
1598	<u>Inductively-Coupled Plasma (ICP) Method, referenced in</u>
1599	<u>Sections 611.611 and 611.612.</u>
1600	
1601	<u>Method 3500-Ca B, Calcium, EDTA Titrimetric Method,</u>
1602	<u>referenced in Section 611.611.</u>
1603	
1604	<u>Method 3500-Ca D, Calcium, EDTA Titrimetric Method,</u>
1605	<u>referenced in Section 611.611.</u>
1606	
1607	<u>Method 3500-Mg B, Magnesium, Calculation Method,</u>
1608	<u>referenced in Section 611.611.</u>
1609	
1610	<u>Method 4110 B, Determination of Anions by Ion</u>
1611	<u>Chromatography, Ion Chromatography with Chemical</u>
1612	<u>Suppression of Eluent Conductivity, referenced in Section</u>
1613	<u>611.611.</u>
1614	
1615	Method 4500-Cl D, Chlorine, Amperometric Titration
1616	Method, referenced in Section 611.381.
1617	
1618	Method 4500-Cl E, Chlorine, Low-Level Amperometric
1619	Titration Method, referenced in Section 611.381.
1620	
1621	Method 4500-Cl F, Chlorine, DPD Ferrous Titrimetric
1622	Method, referenced in Section 611.381.
1623	
1624	Method 4500-Cl G, Chlorine, DPD Colorimetric Method,
1625	referenced in Section 611.381.
1626	
1627	Method 4500-Cl H, Chlorine, Syringaldazine (FACTS)
1628	Method, referenced in Section 611.381.
1629	

1630	Method 4500-Cl <sup>-</sup> I, Chlorine, Iodometric Electrode Method,
1631	referenced in Section 611.381.
1632	
1633	<u>Method 4500-ClO<sub>2</sub> C, Chlorine Dioxide, Amperometric</u>
1634	<u>Method I, referenced in Section 611.531.</u>
1635	
1636	Method 4500-ClO <sub>2</sub> E, Chlorine Dioxide, Amperometric
1637	Method II (Proposed), referenced in Section <del>and</del> 611.381.
1638	
1639	<u>Method 4500-CN<sup>-</sup> E, Cyanide, Colorimetric Method,</u>
1640	<u>referenced in Section 611.611.</u>
1641	
1642	<u>Method 4500-CN<sup>-</sup> F, Cyanide, Cyanide-Selective Electrode</u>
1643	<u>Method, referenced in Section 611.611.</u>
1644	
1645	<u>Method 4500-CN<sup>-</sup> G, Cyanide, Cyanides Amenable to</u>
1646	<u>Chlorination after Distillation, referenced in Section</u>
1647	<u>611.611.</u>
1648	
1649	<u>Method 4500-F<sup>-</sup> B, Fluoride, Preliminary Distillation Step,</u>
1650	<u>referenced in Section 611.611.</u>
1651	
1652	<u>Method 4500-F<sup>-</sup> C, Fluoride, Ion-Selective Electrode</u>
1653	<u>Method, referenced in Section 611.611.</u>
1654	
1655	<u>Method 4500-F<sup>-</sup> D, Fluoride, SPADNS Method, referenced</u>
1656	<u>in Section 611.611.</u>
1657	
1658	<u>Method 4500-F<sup>-</sup> E, Fluoride, Complexone Method,</u>
1659	<u>referenced in Section 611.611.</u>
1660	
1661	<u>Method 4500-H<sup>+</sup> B, pH Value, Electrometric Method,</u>
1662	<u>referenced in Section 611.611.</u>
1663	
1664	<u>Method 4500-NO<sub>2</sub><sup>-</sup> B, Nitrogen (Nitrite), Colorimetric</u>
1665	<u>Method, referenced in Section 611.611.</u>
1666	
1667	<u>Method 4500-NO<sub>3</sub><sup>-</sup> D, Nitrogen (Nitrate), Nitrate Electrode</u>
1668	<u>Method, referenced in Section 611.611.</u>
1669	
1670	<u>Method 4500-NO<sub>3</sub><sup>-</sup> E, Nitrogen (Nitrate), Cadmium</u>
1671	<u>Reduction Method, referenced in Section 611.611.</u>
1672	

1673	<u>Method 4500-NO<sub>3</sub><sup>-</sup> F, Nitrogen (Nitrate), Automated</u>
1674	<u>Cadmium Reduction Method, referenced in Section</u>
1675	<u>611.611.</u>
1676	
1677	<u>Method 4500-O<sub>3</sub> B, Ozone (Residual) (Proposed), Indigo</u>
1678	<u>Colorimetric Method, referenced in Section 611.531.</u>
1679	
1680	<u>Method 4500-P E, Phosphorus, Ascorbic Acid Method,</u>
1681	<u>referenced in Section 611.611.</u>
1682	
1683	<u>Method 4500-P F, Phosphorus, Automated Ascorbic Acid</u>
1684	<u>Reduction Method, referenced in Section 611.611.</u>
1685	
1686	<u>Method 4500-SiO<sub>2</sub> C, Silica, Molybdosilicate Method,</u>
1687	<u>referenced in Section 611.611.</u>
1688	
1689	<u>Method 4500-SiO<sub>2</sub> D, Silica, Heteropoly Blue Method,</u>
1690	<u>referenced in Section 611.611.</u>
1691	
1692	<u>Method 4500-SiO<sub>2</sub> E, Silica, Automated Method for</u>
1693	<u>Molybdate-Reactive Silica, referenced in Section 611.611.</u>
1694	
1695	Method 5310 B, TOC, Combustion-Infrared Method,
1696	referenced in Section 611.381.
1697	
1698	Method 5310 C, TOC, Persulfate-Ultraviolet Oxidation
1699	Method, referenced in Section 611.381.
1700	
1701	Method 5310 D, TOC, Wet-Oxidation Method, referenced
1702	in Section 611.381.
1703	
1704	Method 5910 B, UV-Absorbing Organic Constituents,
1705	Ultraviolet Absorption Method, referenced in Sections
1706	611.381 and 611.382.
1707	
1708	Method 6251, Disinfection By-Products: Haloacetic Acids
1709	and Trichlorophenol, referenced in Section 611.381.
1710	
1711	<u>Method 6610, Carbamate Pesticide Method, referenced in</u>
1712	<u>Section 611.645.</u>
1713	



1714	<u>Method 7110 B, Gross Alpha and Gross Beta</u>
1715	<u>Radioactivity, Evaporation Method for Gross Alpha-Beta,</u>
1716	<u>referenced in Section 611.720.</u>
1717	
1718	<u>Method 7110 C, Gross Alpha and Beta Radioactivity</u>
1719	<u>(Total, Suspended, and Dissolved), Coprecipitation Method</u>
1720	<u>for Gross Alpha Radioactivity in Drinking Water</u>
1721	<u>(Proposed), referenced in Section 611.720.</u>
1722	
1723	<u>Method 7120, Gamma-Emitting Radionuclides, referenced</u>
1724	<u>in Section 611.720.</u>
1725	
1726	<u>Method 7500-Cs B, Radioactive Cesium, Precipitation</u>
1727	<u>Method, referenced in Section 611.720.</u>
1728	
1729	<u>Method 7500-<sup>3</sup>H B, Tritium, Liquid Scintillation</u>
1730	<u>Spectrometric Method, referenced in Section 611.720.</u>
1731	
1732	<u>Method 7500-I B, Radioactive Iodine, Precipitation</u>
1733	<u>Method, referenced in Section 611.720.</u>
1734	
1735	<u>Method 7500-I C, Radioactive Iodine, Ion-Exchange</u>
1736	<u>Method, referenced in Section 611.720.</u>
1737	
1738	<u>Method 7500-I D, Radioactive Iodine, Distillation Method,</u>
1739	<u>referenced in Section 611.720.</u>
1740	
1741	<u>Method 7500-Ra B, Radium, Precipitation Method,</u>
1742	<u>referenced in Section 611.720.</u>
1743	
1744	<u>Method 7500-Ra C, Radium, Emanation Method,</u>
1745	<u>referenced in Section 611.720.</u>
1746	
1747	<u>Method 7500-Ra D, Radium, Sequential Precipitation</u>
1748	<u>Method, referenced in Section 611.720.</u>
1749	
1750	<u>Method 7500-Sr B, Total Radioactive Strontium and</u>
1751	<u>Strontium 90, Precipitation Method, referenced in Section</u>
1752	<u>611.720.</u>
1753	
1754	<u>Method 7500-U B, Uranium, Radiochemical Method,</u>
1755	<u>referenced in Section 611.720.</u>
1756	

1757 Method 7500-U C, Uranium, Isotopic Method, referenced  
1758 in Section 611.720.

1759  
1760 Method 9221 A, Multiple-Tube Fermentation Technique  
1761 for Members of the Coliform Group, Introduction,  
1762 referenced in Sections 611.526 and 611.531.

1763  
1764 Method 9221 B, Multiple-Tube Fermentation Technique  
1765 for Members of the Coliform Group, Standard Total  
1766 Coliform Fermentation Technique, referenced in Sections  
1767 611.526 and 611.531.

1768  
1769 Method 9221 C, Multiple-Tube Fermentation Technique  
1770 for Members of the Coliform Group, Estimation of  
1771 Bacterial Density, referenced in Sections 611.526 and  
1772 611.531.

1773  
1774 Method 9221 D, Multiple-Tube Fermentation Technique  
1775 for Members of the Coliform Group, Presence-Absence (P-  
1776 A) Coliform Test, referenced in Section 611.526.

1777  
1778 Method 9221 E, Multiple-Tube Fermentation Technique  
1779 for Members of the Coliform Group, Fecal Coliform  
1780 Procedure, referenced in Sections 611.526 and 611.531.

1781  
1782 Method 9221 F, Multiple-Tube Fermentation Technique for  
1783 Members of the Coliform Group, Escherichia Coli  
1784 Procedure (Proposed), referenced in Section 611.802.

1785  
1786 Method 9222 A, Membrane Filter Technique for Members  
1787 of the Coliform Group, Introduction, referenced in Sections  
1788 611.526 and 611.531.

1789  
1790 Method 9222 B, Membrane Filter Technique for Members  
1791 of the Coliform Group, Standard Total Coliform Membrane  
1792 Filter Procedure, referenced in Sections 611.526 and  
1793 611.531.

1794  
1795 Method 9222 C, Membrane Filter Technique for Members  
1796 of the Coliform Group, Delayed-Incubation Total Coliform  
1797 Procedure, referenced in Sections 611.526 and 611.531.  
1798

1799 Method 9222 D, Membrane Filter Technique for Members  
1800 of the Coliform Group, Fecal Coliform Membrane Filter  
1801 Procedure, referenced in Section 611.531.  
1802

1803 Method 9222 G, Membrane Filter Technique for Members  
1804 of the Coliform Group, MF Partition Procedures,  
1805 referenced in Section 611.526.  
1806

1807 Method 9223, Chromogenic Substrate Coliform Test (also  
1808 referred to as the variations "Autoanalysis Colilert System"  
1809 and "Colisure Test"), referenced in Sections 611.526 and  
1810 611.531.  
1811

1812 Method 9223 B, Chromogenic Substrate Coliform Test  
1813 (also referred to as the variations "Autoanalysis Colilert  
1814 System" and "Colisure Test"), referenced in Sections  
1815 611.802 and 611.1004.  
1816

1817 BOARD NOTE: Individual Methods from Standard Methods are  
1818 available online at [www.standardmethods.org](http://www.standardmethods.org).  
1819

1820 Analytical Technology, Inc. ATI Orion, 529 Main Street, Boston, MA  
1821 02129.  
1822

1823 Technical Bulletin 601, "Standard Method of Testing for Nitrate in  
1824 Drinking Water," July, 1994, PN 221890-001 (referred to as  
1825 "Technical Bulletin 601"), referenced in Section 611.611.  
1826

1827 ASTM. American Society for Testing and Materials, 100 Barr Harbor  
1828 Drive, West Conshohocken, PA 19428-2959 (610-832-9585).  
1829

1830 ASTM Method D511-93 A and B, "Standard Test Methods for  
1831 Calcium and Magnesium in Water," "Test Method A –  
1832 Complexometric Titration" & "Test Method B – Atomic  
1833 Absorption Spectrophotometric," approved 1993, referenced in  
1834 Section 611.611.  
1835

1836 ASTM Method D511-03 A and B, "Standard Test Methods for  
1837 Calcium and Magnesium in Water," "Test Method A –  
1838 Complexometric Titration" & "Test Method B – Atomic  
1839 Absorption Spectrophotometric," approved 2003, referenced in  
1840 Section 611.611.  
1841

1842 ASTM Method D515-88 A, "Standard Test Methods for  
1843 Phosphorus in Water," "Test Method A – Colorimetric Ascorbic  
1844 Acid Reduction," approved August 19, 1988, referenced in Section  
1845 611.611.

1846  
1847 ASTM Method ~~D859-94~~D859-88, "Standard Test Method for  
1848 Silica in Water," approved ~~1994~~August 19, 1988, referenced in  
1849 Section 611.611.

1850  
1851 ASTM Method D859-00, "Standard Test Method for Silica in  
1852 Water," approved 2000, referenced in Section 611.611.

1853  
1854 ASTM Method D859-05, "Standard Test Method for Silica in  
1855 Water," approved 2005, referenced in Section 611.611.

1856  
1857 ASTM Method D1067-92 B, "Standard Test Methods for Acidity  
1858 or Alkalinity in Water," "Test Method B – Electrometric or Color-  
1859 Change Titration," approved May 15, 1992, referenced in Section  
1860 611.611.

1861  
1862 ASTM Method D1067-02 B, "Standard Test Methods for Acidity  
1863 or Alkalinity in Water," "Test Method B – Electrometric or Color-  
1864 Change Titration," approved in 2002, referenced in Section  
1865 611.611.

1866  
1867 ASTM Method ~~D1125-95 (1999)~~D1125-94 A, "Standard Test  
1868 Methods for Electrical Conductivity and Resistivity of Water,"  
1869 "Test Method A – Field and Routine Laboratory Measurement of  
1870 Static (Non-Flowing) Samples," approved June 15, 1995,  
1871 reapproved 1999June 15, 1994, referenced in Section 611.611.

1872  
1873 ASTM Method D1179-93 B, "Standard Test Methods for Fluoride  
1874 in Water," "Test Method B – Ion Selective Electrode," approved  
1875 1993, referenced in Section 611.611.

1876  
1877 ASTM Method D1179-99 B, "Standard Test Methods for Fluoride  
1878 in Water," "Test Method B – Ion Selective Electrode," approved  
1879 1999, referenced in Section 611.611.

1880  
1881 ASTM Method D1179-04 B, "Standard Test Methods for Fluoride  
1882 in Water," "Test Method B – Ion Selective Electrode," approved  
1883 2004, referenced in Section 611.611.

1884

1885	ASTM Method D1253-86, "Standard Test Method for Residual
1886	Chlorine in Water," reapproved 1992, referenced in Section
1887	611.381.
1888	
1889	ASTM Method D1253-96, "Standard Test Method for Residual
1890	Chlorine in Water," reapproved 1996, referenced in Section
1891	611.381.
1892	
1893	ASTM Method D1253-03, "Standard Test Method for Residual
1894	Chlorine in Water," reapproved 2003, referenced in
1895	<u>Sections Section 611.381 and 611.531.</u>
1896	
1897	ASTM Method <u>D1293-95 A or B</u> <del>D1293-84</del> , "Standard Test
1898	Methods for pH of Water," "Test Method A – Precise Laboratory
1899	Measurement" & "Test Method B – Routine or Continuous
1900	Measurement," approved <u>1995</u> <del>October 26, 1984</del> , referenced in
1901	Section 611.611.
1902	
1903	<u>ASTM Method D1293-99 A or B, "Standard Test Methods for pH</u>
1904	<u>of Water," "Test Method A – Precise Laboratory Measurement" &amp;</u>
1905	<u>"Test Method B – Routine or Continuous Measurement," approved</u>
1906	<u>1999, referenced in Section 611.611.</u>
1907	
1908	ASTM Method <u>D1688-95</u> <del>D1688-90</del> A or C, "Standard Test
1909	Methods for Copper in Water," "Test Method A – Atomic
1910	Absorption, Direct" & "Test Method C – Atomic Absorption,
1911	Graphite Furnace," approved <u>1995</u> <del>March 15, 1990</del> , referenced in
1912	Section 611.611.
1913	
1914	<u>ASTM Method D1688-02 A or C, "Standard Test Methods for</u>
1915	<u>Copper in Water," "Test Method A – Atomic Absorption, Direct"</u>
1916	<u>&amp; "Test Method C – Atomic Absorption, Graphite Furnace,"</u>
1917	<u>approved 2002, referenced in Section 611.611.</u>
1918	
1919	ASTM Method <u>D2036-98</u> <del>D2036-91</del> A or B, "Standard Test
1920	Methods for Cyanide in Water," "Test Method A – Total Cyanides
1921	after Distillation" & "Test Method B – Cyanides Amenable to
1922	Chlorination by Difference," approved <u>1998</u> <del>September 15, 1991</del> ,
1923	referenced in Section 611.611.
1924	
1925	<u>ASTM Method D2036-06 A or B, "Standard Test Methods for</u>
1926	<u>Cyanide in Water," "Test Method A – Total Cyanides after</u>
1927	<u>Distillation" &amp; "Test Method B – Cyanides Amenable to</u>

1928	<u>Chlorination by Difference," approved 2006, referenced in Section 611.611.</u>
1929	
1930	
1931	ASTM Method D2459-72, "Standard Test Method for Gamma Spectrometry in Water," approved July 28, 1972, discontinued
1932	1988, referenced in Section 611.720.
1933	
1934	
1935	ASTM Method D2460-90, "Standard Test Method for Radionuclides of Radium in Water," approved 1990, referenced in
1936	Section 611.720.
1937	
1938	
1939	ASTM Method D2907-91, "Standard Test Methods for Microquantities of Uranium in Water by Fluorometry," "Test
1940	Method A – Direct Fluorometric" & "Test Method B –
1941	Extraction," approved June 15, 1991, referenced in Section
1942	611.720.
1943	
1944	
1945	ASTM Method <del>D2972-97</del> D2972-93 B or C, "Standard Test
1946	Methods for Arsenic in Water," "Test Method B – Atomic
1947	Absorption, Hydride Generation" & "Test Method C – Atomic
1948	Absorption, Graphite Furnace," approved <del>1997</del> 1993, referenced in
1949	Section 611.611.
1950	
1951	<u>ASTM Method D2972-03 B or C, "Standard Test Methods for</u>
1952	<u>Arsenic in Water," "Test Method B – Atomic Absorption, Hydride</u>
1953	<u>Generation" &amp; "Test Method C – Atomic Absorption, Graphite</u>
1954	<u>Furnace," approved 2003, referenced in Section 611.611.</u>
1955	
1956	ASTM Method <del>D3223-97</del> D3223-91, "Standard Test Method for
1957	Total Mercury in Water," approved <del>1997</del> September 23, 1991,
1958	referenced in Section 611.611.
1959	
1960	<u>ASTM Method D3223-02, "Standard Test Method for Total</u>
1961	<u>Mercury in Water," approved 2002, referenced in Section 611.611.</u>
1962	
1963	ASTM Method D3454-91, "Standard Test Method for Radium-226
1964	in Water," approved 1991, referenced in Section 611.720.
1965	
1966	ASTM Method D3559-96 D, "Standard Test Methods for Lead in
1967	Water," "Test Method D – Atomic Absorption, Graphite Furnace,"
1968	approved August 6, 1990, referenced in Section 611.611.
1969	

1970	<u>ASTM Method D3559-03 D, "Standard Test Methods for Lead in</u>
1971	<u>Water," "Test Method D – Atomic Absorption, Graphite Furnace,"</u>
1972	<u>approved 2003, referenced in Section 611.611.</u>
1973	
1974	ASTM Method D3645-97 B, "Standard Test Methods for
1975	Beryllium in Water," "Method B – Atomic Absorption, Graphite
1976	Furnace," approved <del>1997</del> 1993, referenced in Section 611.611.
1977	
1978	<u>ASTM Method D3645-03 B, "Standard Test Methods for</u>
1979	<u>Beryllium in Water," "Method B – Atomic Absorption, Graphite</u>
1980	<u>Furnace," approved 2003, referenced in Section 611.611.</u>
1981	
1982	ASTM Method D3649-91, "Standard Test Method for High-
1983	Resolution Gamma-Ray Spectrometry of Water," approved 1991,
1984	referenced in Section 611.720.
1985	
1986	<u>ASTM Method D3649-98a, "Standard Test Method for High-</u>
1987	<u>Resolution Gamma-Ray Spectrometry of Water," approved 1998,</u>
1988	<u>referenced in Section 611.720.</u>
1989	
1990	ASTM Method D3697-92, "Standard Test Method for Antimony in
1991	Water," approved June 15, 1992, referenced in Section 611.611.
1992	
1993	<u>ASTM Method D3697-02, "Standard Test Method for Antimony in</u>
1994	<u>Water," approved 2002, referenced in Section 611.611.</u>
1995	
1996	ASTM Method <del>D3859-98</del> <u>D3859-93 A, "Standard Test Methods</u>
1997	<u>for Selenium in Water," "Method A – Atomic Absorption, Hydride</u>
1998	<u>Method," approved <del>1998</del>1993, referenced in Section 611.611.</u>
1999	
2000	<u>ASTM Method D3859-03 A, "Standard Test Methods for</u>
2001	<u>Selenium in Water," "Method A – Atomic Absorption, Hydride</u>
2002	<u>Method," approved 2003, referenced in Section 611.611.</u>
2003	
2004	ASTM Method D3867-90 A and B, "Standard Test Methods for
2005	Nitrite-Nitrate in Water," "Test Method A – Automated Cadmium
2006	Reduction" & "Test Method B – Manual Cadmium Reduction,"
2007	approved January 10, 1990, referenced in Section 611.611.
2008	
2009	ASTM Method D3972-90, "Standard Test Method for Isotopic
2010	Uranium in Water by Radiochemistry," approved 1990, referenced
2011	in Section 611.720.
2012	

2013	
2014	<u>ASTM Method D3972-02, "Standard Test Method for Isotopic Uranium in Water by Radiochemistry," approved 2002, referenced in Section 611.720.</u>
2015	
2016	
2017	ASTM Method D4107-91, "Standard Test Method for Tritium in Drinking Water," approved 1991, referenced in Section 611.720.
2018	
2019	
2020	<u>ASTM Method D4107-98, "Standard Test Method for Tritium in Drinking Water," approved 1998 (reapproved 2002), referenced in Section 611.720.</u>
2021	
2022	
2023	
2024	ASTM Method <del>D4327-97</del> <u>D4327-91</u> , "Standard Test Method for Anions in Water by Ion Chromatography," approved <del>1997</del> <u>October 15, 1991</u> , referenced in Section 611.611.
2025	
2026	
2027	
2028	<u>ASTM Method D4327-03, "Standard Test Method for Anions in Water by Ion Chromatography," approved 2003, referenced in Section 611.611.</u>
2029	
2030	
2031	
2032	ASTM Method D4785-88, "Standard Test Method for Low-Level Iodine-131 in Water," approved 1988, referenced in Section 611.720.
2033	
2034	
2035	
2036	<u>ASTM Method D4785-00a, "Standard Test Method for Low-Level Iodine-131 in Water," approved 2000, referenced in Section 611.720.</u>
2037	
2038	
2039	
2040	ASTM Method D5174-91, "Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry," approved 1991, referenced in Section 611.720.
2041	
2042	
2043	
2044	<u>ASTM Method D5174-02, "Standard Test Method for Trace Uranium in Water by Pulsed-Laser Phosphorimetry," approved 2002, referenced in Section 611.720.</u>
2045	
2046	
2047	
2048	<u>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.</u>
2049	
2050	
2051	
2052	
2053	<u>ASTM Method D5317-98, "Standard Test Method for Determination of Chlorinated Organic Acid Compounds in Water</u>
2054	



2055 by Gas Chromatography with an Electron Capture Detector,"  
2056 approved 1998 (reapproved 2003), referenced in Section 611.645.

2057  
2058 ASTM Method D5673-03, "Standard Test Method for Elements in  
2059 Water by Inductively-Coupled Plasma – Mass Spectrometry,"  
2060 approved 2003, referenced in Section 611.720.

2061  
2062 ASTM Method D5673-05, "Standard Test Method for Elements in  
2063 Water by Inductively-Coupled Plasma – Mass Spectrometry,"  
2064 approved 2005, referenced in Section 611.720.

2065  
2066 ASTM Method D6508-00(2005)e2 (rev. 2), "Standard Test  
2067 Method for Determination of Dissolved Inorganic Anions in  
2068 Aqueous Matrices Using Capillary Ion Electrophoresis and  
2069 Chromate Electrolyte," approved 2000 (revised 2005), referenced  
2070 in Section 611.611.

2071  
2072 ASTM Method D6581-00, "Standard Test Method for Bromate,  
2073 Bromide, Chlorate, and Chlorite in Drinking Water by Chemically  
2074 Suppressed Ion Chromatography," approved 2000, referenced in  
2075 Section 611.381.

2076  
2077 ASTM Method D6919-03, "Standard Test Method for  
2078 Determination of Dissolved Alkali and Alkaline Earth Cations and  
2079 Ammonium in Water and Wastewater by Ion Chromatography,"  
2080 approved 2003, referenced in Section 611.611.

2081  
2082 ASTM Method D6888-04, "Standard Test Method for Available  
2083 Cyanide with Ligand Displacement and Flow Injection Analysis  
2084 (FIA) Utilizing Gas Diffusion Separation and Amperometric  
2085 Detection," approved 2004, referenced in Section 611.611.

2086  
2087 Bran & Luebbe, 1025 Busch Parkway, Buffalo Grove, IL 60089.

2088  
2089 "Fluoride in Water and Wastewater," Industrial Method #129-  
2090 71W, December 1972 (referred to as "Technicon Methods: Method  
2091 #129-71W"). See 40 CFR 141.23(k)(1), footnote 11 (2007)(2006),  
2092 referenced in Section 611.611.

2093  
2094 "Fluoride in Water and Wastewater," #380-75WE, February 1976  
2095 (referred to as "Technicon Methods: Method #380-75WE"). See  
2096 40 CFR 141.23(k)(1), footnote 11 (2007)(2006), referenced in  
2097 Section 611.611.

2098  
2099  
2100  
2101  
2102  
2103  
2104  
2105  
2106  
2107  
2108  
2109  
2110  
2111  
2112  
2113  
2114  
2115  
2116  
2117  
2118  
2119  
2120  
2121  
2122  
2123  
2124  
2125  
2126  
2127  
2128  
2129  
2130  
2131  
2132  
2133  
2134  
2135  
2136  
2137  
2138  
2139  
2140

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

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

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

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

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

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

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

Environmental Resources Center, Georgia Institute of Technology, 620  
Cherry Street, Atlanta, GA 30332-0335 (404-894-3776).

"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.

ERDA Health and Safety Laboratory, New York, NY.

HASL Procedure Manual, HASL 300, 1973. See 40 CFR

2141 141.25(b)(2) (2007)~~(2006)~~, referenced in Section 611.720.  
2142

2143 Great Lakes Instruments, Inc., 8855 North 55<sup>th</sup> Street, Milwaukee, WI  
2144 53223.  
2145

2146 GLI Method 2, "Turbidity," Nov. 2, 1992, referenced in Section  
2147 611.531.  
2148

2149 The Hach Company, P.O. Box 389, Loveland, CO 80539-0389 (800-227-  
2150 4224).  
2151

2152 "Lead in Drinking Water by Differential Pulse Anodic Stripping  
2153 Voltammetry," Method 1001, August 1999, referenced in Section  
2154 611.611.  
2155

2156 "Determination of Turbidity by Laser Nephelometry," January  
2157 2000, Revision 2.0 (referred to as "Hach FilterTrak Method  
2158 10133"), referenced in Section 611.531.  
2159

2160 "Total Coliforms and E. coli Membrane Filtration Method with m-  
2161 ColiBlue24® Broth," Method No. 10029, Revision 2, August 17,  
2162 1999 (referred to as "m-ColiBlue24 Test"), referenced in Section  
2163 611.802 (also available from USEPA, Water Resource Center).  
2164

2165 IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092  
2166 (800-321-0207).  
2167

2168 "IDEXX SimPlate™ HPC Test Method for Heterotrophs in  
2169 Water," November 2000 (referred to as "SimPlate method"),  
2170 referenced in Section 611.531.  
2171

2172 Industrial Test Systems, Inc., 1875 Langston St., Rock Hill, SC 29730.  
2173

2174 Method D99-003, Revision 3.0, "Free Chlorine Species (HOCl  
2175 and OCl<sup>-</sup>) by Test Strip," November 21, 2003 (referred to as "ITS  
2176 Method D99-003"), referenced in Section 611.381.  
2177

2178 Lachat Instruments, 6645 W. Mill Rd., Milwaukee, WI 53218 (414-358-  
2179 4200).  
2180

2181 "Digestion and distillation of total cyanide in drinking and  
2182 wastewaters using MICRO DIST and determination of cyanide by  
2183 flow injection analysis," Revision 2.1, November 30, 2000

2184 (referred to as "QuikChem Method 10-204-00-1-X"), referenced in  
2185 Section 611.611.  
2186  
2187 Millipore Corporation, Technical Services Department, 80 Ashby Road,  
2188 Milford, MA 01730 (800-654-5476).  
2189  
2190 Colisure Presence/Absence Test for Detection and Identification of  
2191 Coliform Bacteria and Escherichia Coli in Drinking Water,  
2192 February 28, 1994 (referred to as "Colisure Test"), referenced in  
2193 Section 611.526.  
2194  
2195 NCRP. National Council on Radiation Protection, 7910 Woodmont Ave.,  
2196 Bethesda, MD (301-657-2652).  
2197  
2198 "Maximum Permissible Body Burdens and Maximum Permissible  
2199 Concentrations of Radionuclides in Air and in Water for  
2200 Occupational Exposure," NCRP Report Number 22, June 5, 1959,  
2201 referenced in Section 611.101.  
2202  
2203 NSF. National Sanitation Foundation International, 3475 Plymouth Road,  
2204 PO Box 130140, Ann Arbor, Michigan 48113-0140 (734-769-8010).  
2205  
2206 NSF Standard 61, section 9, November 1998, referenced in  
2207 Sections 611.126 and 611.356.  
2208  
2209 NTIS. National Technical Information Service, U.S. Department of  
2210 Commerce, 5285 Port Royal Road, Springfield, VA 22161 (703-487-4600  
2211 or 800-553-6847).  
2212  
2213 "Interim Radiochemical Methodology for Drinking Water," EPA  
2214 600/4-75-008 (revised), March 1976 (referred to as "USEPA  
2215 Interim Radiochemical Methods"), referenced in Section 611.720.  
2216 (Pages 1, 4, 6, 9, 13, 16, 24, 29, 34)  
2217  
2218 "Kelada Automated Test Methods for Total Cyanide, Acid  
2219 Dissociable Cyanide, ~~and~~ Thiocyanate," Revision 1.2, August  
2220 2001, EPA 821/B-01-009 (referred to as "Kelada 01"), referenced  
2221 in Section 611.611.  
2222  
2223 "Maximum Permissible Body Burdens and Maximum Permissible  
2224 Concentrations of Radionuclides in Air and in Water for  
2225 Occupational Exposure," NBS (National Bureau of Standards)  
2226 Handbook 69, as amended August 1963, U.S. Department of

2227 Commerce, referenced in Section 611.330.  
 2228  
 2229 Method 100.1, "Analytical Method for Determination of Asbestos  
 2230 Fibers in Water," EPA 600/4-83-043, September 1983, Doc. No.  
 2231 PB83-260471 (referred to as "USEPA Asbestos Methods-100.1"),  
 2232 referenced in Section 611.611.  
 2233  
 2234 Method 100.2, "Determination of Asbestos Structures over 10-mm  
 2235 in Length in Drinking Water," EPA 600/R-94-134, June 1994,  
 2236 Doc. No. PB94-201902 (referred to as "USEPA Asbestos  
 2237 Methods-100.2"), referenced in Section 611.611.  
 2238  
 2239 "Methods for Chemical Analysis of Water and Wastes," March  
 2240 1983, EPA 600/4-79-020, Doc. No. PB84-128677 (referred to as  
 2241 "USEPA Inorganic Methods"). (Methods 150.1, 150.2, and 245.2,  
 2242 which formerly appeared in this reference, are available from  
 2243 USEPA EMSL.), referenced in Section 611.611.  
 2244  
 2245 "Methods for the Determination of Inorganic Substances in  
 2246 Environmental Samples," August 1993, EPA 600/R-93-100, Doc.  
 2247 No. PB94-120821 (referred to as "USEPA Environmental  
 2248 Inorganic Methods"), referenced in Sections 611.381, 611.531, and  
 2249 611.611. (For methods 180.1, 300.0, 335.4, 353.2, and 365.1.)  
 2250  
 2251 "Methods for the Determination of Metals in Environmental  
 2252 Samples," June 1991, EPA 600/4-91-010, Doc. No. PB91-231498  
 2253 and "Methods for the Determination of Metals in Environmental  
 2254 Samples – Supplement I," May 1994, EPA 600/R-94-111, Doc.  
 2255 No. PB95-125472 (referred to as "USEPA Environmental Metals  
 2256 Methods"), referenced in Sections 611.611, 611.612, and 611.720.  
 2257 (For methods 200.7, 200.8, 200.9, and 245.1.)  
 2258  
 2259 "Methods for the Determination of Organic and Inorganic  
 2260 Compounds in Drinking Water, Volume 1" August 2000, EPA  
 2261 815/R-00/014, Doc. No. PB2000-106981 (referred to as "USEPA  
 2262 Organic and Inorganic Methods"), referenced in Section 611.381.  
 2263 (For methods 300.1 and 321.8.)  
 2264  
 2265 "Methods for the Determination of Organic Compounds in  
 2266 Drinking Water," December 1988, revised July 1991, EPA 600/4-  
 2267 88/039, Doc. No. PB91-231480 (referred to as "USEPA Organic  
 2268 Methods"), referenced in Sections 611.645 and 611.648. (For  
 2269 methods 502.2, 505, 507, 508, 508A, 515.1, and 531.1.)

2270  
 2271 "Methods for the Determination of Organic Compounds in  
 2272 Drinking Water – Supplement I," July 1990, EPA 600/4-90/020,  
 2273 Doc. No. PB91-146027 (referred to as "USEPA Organic  
 2274 Methods"), referenced in Section 611.645. (For methods 506, 547,  
 2275 550, 550.1, and 551.)  
 2276  
 2277 "Methods for the Determination of Organic Compounds in  
 2278 Drinking Water – Supplement II," August 1992, EPA 600/R-  
 2279 92/129, Doc. No. PB92-207703 (referred to as "USEPA Organic  
 2280 Methods"), referenced in Sections 611.381 and 611.645. (For  
 2281 methods 515.2, 524.2, 548.1, 549.1, 552.1, and 555.)  
 2282  
 2283 "Methods for the Determination of Organic Compounds in Drinking  
 2284 Water – Supplement III," August 1995, EPA 600/R-95/131, Doc.  
 2285 No. PB95-261616, (referred to as "USEPA Organic Methods"),  
 2286 referenced in Sections 611.381 and 611.645. (For methods 502.2,  
 2287 524.2, 551.1, and 552.2.)  
 2288  
 2289 "Prescribed Procedures for Measurement of Radioactivity in  
 2290 Drinking Water," EPA 600/4-80/032, August 1980; (Doc. No. PB  
 2291 80-224744) (referred to as "USEPA Radioactivity Methods"),  
 2292 referenced in Section 611.720. (For methods 900, 901, 901.1, 902,  
 2293 903, 903.1, 904, 905, 906, 908, 908.1)  
 2294  
 2295 "Procedures for Radiochemical Analysis of Nuclear Reactor  
 2296 Aqueous Solutions," H.L. Krieger and S. Gold, EPA-R4-73-014,  
 2297 May 1973, Doc. No. PB222-154/7BA, referenced in Section  
 2298 611.720.  
 2299  
 2300 "Radiochemical Analytical Procedures for Analysis of  
 2301 Environmental Samples," March 1979, Doc. No. EMSL LV  
 2302 053917 (referred to as "USEPA Radiochemical Analyses"),  
 2303 referenced in Section 611.720. (Pages 1, 19, 33, 65, 87, 92)  
 2304  
 2305 "Radiochemistry Procedures Manual," EPA 520/5-84-006, August  
 2306 1984, Doc. No. PB84-215581 (referred to as "USEPA  
 2307 Radiochemistry Methods"), referenced in Section 611.720.  
 2308 (Methods 00-01, 00-02, 00-07, H-02, Ra-03, Ra-04, Ra-05, Sr-04)  
 2309  
 2310 "Technical Notes on Drinking Water Methods," EPA 600/R-  
 2311 94/173, October 1994, Doc. No. PB95-104766 (referred to as  
 2312 "USEPA Technical Notes"), referenced in Sections 611.531,

2313 611.611, and 611.685.

2314  
2315 BOARD NOTE: USEPA made the following assertion with  
2316 regard to this reference at 40 CFR 141.23(k)(1) and 141.24(e) and  
2317 (n)(11) (2007)(2006): "This document contains other analytical  
2318 test procedures and approved analytical methods that remain  
2319 available for compliance monitoring until July 1, 1996." Also  
2320 available online at [http://nepis.epa.gov/EPA/html/Pubs/](http://nepis.epa.gov/EPA/html/Pubs/pubtitleORD.htm)  
2321 [pubtitleORD.htm](http://nepis.epa.gov/EPA/html/Pubs/pubtitleORD.htm) under the document designation "600R94173."

2322  
2323 "Method 1613: Tetra- through Octa-Chlorinated Dioxins and  
2324 Furans by Isotope Dilution HRGC/HRMS," October 1994, EPA  
2325 821/B-94/005, Doc. No. 94-104774 (referred to as "Dioxin and  
2326 Furan Method 1613"), referenced in Section 611.645.

2327  
2328 USEPA Method 326.0, Revision 1.0, "Determination of Inorganic  
2329 Oxyhalide Disinfection By-Products in Drinking Water Using Ion  
2330 Chromatography Incorporating the Addition of a Suppressor  
2331 Acidified Postcolumn Reagent for Trace Bromate Analysis,"  
2332 USEPA, June 2002, EPA 815/R-03/007, Doc. No. PB2003-107402  
2333 (referred to as "OGWDW Methods, Method 326.0, rev. 1.0"),  
2334 referenced in Sections 611.381 and 611.382.

2335  
2336 BOARD NOTE: Also available from United States Environmental  
2337 Protection Agency, Office of Ground Water and Drinking Water.

2338  
2339 New Jersey Department of Environment, Division of Environmental  
2340 Quality, Bureau of Radiation and Inorganic Analytical Services, 9 Ewing  
2341 Street, Trenton, NJ 08625.

2342  
2343 "Determination of Radium 228 in Drinking Water," August 1990  
2344 (referred to as "New Jersey Radium Method"), referenced in  
2345 Section 611.720.

2346  
2347 New York Department of Health, Radiological Sciences Institute, Center  
2348 for Laboratories and Research, Empire State Plaza, Albany, NY 12201.

2349  
2350 "Determination of Ra-226 and Ra-228 (Ra-02)," January 1980,  
2351 Revised June 1982 (referred to as "New York Radium Method"),  
2352 referenced in Section 611.720.

2353  
2354 Palintest, Ltd., 21 Kenton Lands Road, P.O. Box 18395, Erlanger, KY  
2355 (800-835-9629).

2356  
2357 "Lead in Drinking Water by Differential Pulse Anodic Stripping  
2358 Voltammetry," Method 1001, August 1999 (referred to as  
2359 "Palintest Method 1001"), referenced in Section 611.611.  
2360

2361 Standard Methods Online, available online from the Standard Methods  
2362 Organization at [www.standardmethods.org](http://www.standardmethods.org).  
2363

2364 Method 6610 B-04, Carbamate Pesticides, High-Performance  
2365 Liquid Chromatographic Method, referenced in Section 611.645.  
2366

2367 Method 9230 B-04, Fecal Streptococcus and Enterococcus Groups,  
2368 Multiple Tube Techniques, referenced in Section 611.802.  
2369

2370 Syngenta Crop Protection, Inc., 410 Swing Road, Post Office Box 18300,  
2371 Greensboro, NC 27419 (336-632-6000).  
2372

2373 "Atrazine in Drinking Water by Immunoassay," February 2001  
2374 (referred to as "Syngenta AG-625"), referenced in Section  
2375 611.645.  
2376

2377 United States Department of Energy, available at the Environmental  
2378 Measurements Laboratory, U.S. Department of Energy, 376 Hudson  
2379 Street, New York, NY 10014-3621.  
2380

2381 "EML Procedures Manual," 27<sup>th</sup> Edition, Volume 1, 1990 (referred  
2382 to as "USDOE Manual"), referenced in Section 611.720.  
2383

2384 United States Environmental Protection Agency, Office of Ground Water  
2385 and Drinking Water (accessible on-line and available by download from  
2386 <http://www.epa.gov/safewater/methods/>).  
2387

2388 USEPA OGWDW Methods, Method 317.0, Revision 2.0,  
2389 "Determination of Inorganic Oxyhalide Disinfection By-Products  
2390 in Drinking Water Using Ion Chromatography with the Addition of  
2391 a Postcolumn Reagent for Trace Bromate Analysis," USEPA, July  
2392 2001, EPA 815/B-01/001 (referred to as "OGWDW Methods,  
2393 Method 317.0, rev. 2.0"), referenced in ~~Sections~~ Section 611.381  
2394 and 611.382.  
2395

2396 USEPA OGWDW Methods, Method 326.0, Revision 1.0,  
2397 "Determination of Inorganic Oxyhalide Disinfection By-Products  
2398 in Drinking Water Using Ion Chromatography Incorporating the



2399 Addition of a Suppressor Acidified Postcolumn Reagent for Trace  
 2400 Bromate Analysis," USEPA, June 2002, EPA 815/R-03/007  
 2401 (referred to as "OGWDW Methods, Method 326.0, rev. 1.0"),  
 2402 referenced in Sections 611.381 and 611.382.

2403  
 2404 BOARD NOTE: Also available from NTIS.

2405  
 2406 USEPA OGWDW Methods, Method 327.0, Revision 1.1,  
 2407 "Determination of Chlorine Dioxide and Chlorite Ion in Drinking  
 2408 Water Using Lissamine Green B and Horseradish Peroxidase with  
 2409 Detection by Visible Spectrophotometry," USEPA, May 2005,  
 2410 EPA 815/R-05/008 (referred to as "OGWDW Methods, Method  
 2411 327.0, rev. 1.1"), referenced in SectionsSection 611.381 and  
 2412 611.531.

2413  
 2414 USEPA OGWDW Methods, Method 515.4, Revision 1.0,  
 2415 "Determination of Chlorinated Acids in Drinking Water by Liquid-  
 2416 Liquid Microextraction, Derivatization and Fast Gas  
 2417 Chromatography with Electron Capture Detection," April 2000,  
 2418 EPA 815/B-00/001 (document file name "met515\_4.pdf")  
 2419 (referred to as "OGWDW Methods, Method 515.4, rev. 1.0"),  
 2420 referenced in Section 611.645.

2421  
 2422 USEPA OGWDW Methods, Method 531.2, Revision 1.0,  
 2423 "Measurement of N-methylcarbamoyloximes and N-  
 2424 methylcarbamates in Water by Direct Aqueous Injection HPLC  
 2425 with Postcolumn Derivatization," September 2001, EPA 815/B-  
 2426 01/002 (document file name "met531\_2.pdf") (referred to as  
 2427 "OGWDW Methods, Method 531.2, rev. 1.0"), referenced in  
 2428 Section 611.645.

2429  
 2430 USEPA OGWDW Methods, Method 552.3, Revision 1.0,  
 2431 "Determination of Haloacetic Acids and Dalapon in Drinking  
 2432 Water by Liquid-liquid Microextraction, Derivatization, and Gas  
 2433 Chromatography with Electron Capture Detection," USEPA, July  
 2434 2003, EPA 815/B-03/002 (referred to as "OGWDW Methods,  
 2435 Method 552.3, rev. 1.0"), referenced in SectionsSection 611.381  
 2436 and 611.645.

2437  
 2438 USEPA OGWDW Methods, Method 1622 (05), "Method 1622:  
 2439 Cryptosporidium in Water by Filtration/IMS/FA," December 2005,  
 2440 EPA 815/R-05/001 (referred to as "USEPA Method 1622 (05)"),  
 2441 referenced in Sections 611.1004 and 611.1007.

2442  
2443 USEPA OGWDW Methods, Method 1622 (01), "Method 1622:  
2444 Cryptosporidium in Water by Filtration/IMS/FA," April 2001,  
2445 EPA 821/R-01/026, (referred to as "USEPA Method 1622 (01)"),  
2446 referenced in Section 611.1007.  
2447  
2448 USEPA OGWDW Methods, Method 1622 (99), "Method 1622:  
2449 Cryptosporidium in Water by Filtration/IMS/FA," April 1999,  
2450 EPA 821/R-99/001, (referred to as "USEPA Method 1622 (99)"),  
2451 referenced in Section 611.1007.  
2452  
2453 USEPA OGWDW Methods, Method 1623 (05), "Method 1623:  
2454 Cryptosporidium and Giardia in Water by Filtration/IMS/FA,"  
2455 December 2005, EPA 815/R-05/002 (referred to as "USEPA  
2456 Method 1623 (05)"), referenced in Sections 611.1004 and  
2457 611.1007.  
2458  
2459 USEPA OGWDW Methods, Method 1623 (01), "Method 1623:  
2460 Cryptosporidium and Giardia in Water by Filtration/IMS/FA,"  
2461 April 2001, EPA 821/R-01/025 (referred to as "USEPA Method  
2462 1623 (01)"), referenced in Section 611.1007.  
2463  
2464 USEPA OGWDW Methods, Method 1623 (99), "Method 1623:  
2465 Cryptosporidium and Giardia in Water by Filtration/IMS/FA,"  
2466 January 1999, EPA 821/R-99/006 (referred to as "USEPA Method  
2467 1623 (99)"), referenced in Sections 611.1007.  
2468  
2469 United States Environmental Protection Agency, EMSL, Cincinnati, OH  
2470 45268 (513-569-7586).  
2471  
2472 "Interim Radiochemical Methodology for Drinking Water," EPA  
2473 600/4-75/008 (revised), March 1976 (referred to as "USEPA  
2474 Interim Radiochemical Methods"), referenced in Section 611.720.  
2475 See NTIS.  
2476  
2477 "Methods for the Determination of Organic Compounds in  
2478 Drinking Water," December 1988, revised July 1991, EPA 600/4-  
2479 88/039 (referred to as "USEPA Organic Methods"), referenced in  
2480 Sections 611.645 and 611.648. (For methods 504.1, 508.1, and  
2481 525.2 only.) See NTIS.  
2482  
2483 "Procedures for Radiochemical Analysis of Nuclear Reactor  
2484 Aqueous Solutions," referenced in Section 611.720. See NTIS.

2485  
2486 USEPA, Office of Research and Development, National Exposure  
2487 Research Laboratory, Microbiological & Chemical Exposure Assessment  
2488 Research Division (accessible on-line and available by download from  
2489 <http://www.epa.gov/nerlcwww/ordmeth.htm>).  
2490  
2491 USEPA Method 200.5, Revision 4.2, "Determination of Trace  
2492 Elements in Drinking Water by Axially Viewed Inductively-  
2493 Coupled Plasma – Atomic Emission Spectrometry," October 2003,  
2494 EPA 600/R-06/115 (referred to as "USEPA NERL Method  
2495 200.5"), referenced in Sections 611.611 and 611.612.  
2496  
2497 USEPA Method 415.3, Revision 1.1, "Determination of Total  
2498 Organic Carbon and Specific UV Absorbance at 254 nm in Source  
2499 Water and Drinking Water," February 2005, EPA 600/R-05/055  
2500 (referred to as "USEPA NERL Method 415.3 (rev. 1.1)"),  
2501 referenced in Section 611.381.  
2502  
2503 USEPA, Science and Technology Branch, Criteria and Standards  
2504 Division, Office of Drinking Water, Washington, D.C. 20460.  
2505  
2506 "Guidance Manual for Compliance with the Filtration and  
2507 Disinfection Requirements for Public Water Systems using Surface  
2508 Water Sources," October 1989, referenced in Sections 611.111 and  
2509 611.212.  
2510  
2511 USEPA Water Resource Center (RC-4100T), 1200 Pennsylvania Avenue,  
2512 NW, Washington, DC 20460:  
2513  
2514 "Charm E\*Colite Presence/Absence Test for Detection and  
2515 Identification of Coliform Bacteria and Escherichia coli in  
2516 Drinking Water," January 9, 1998 (referred to as "E\*Colite Test"),  
2517 referenced in Section 611.802 (also available from Charm  
2518 Sciences, Inc.).  
2519  
2520 "Total Coliforms and E. coli Membrane Filtration Method with m-  
2521 ColiBlue24® Broth," Method No. 10029, Revision 2, August 17,  
2522 1999 (referred to as "m-ColiBlue24 Test"), referenced in Section  
2523 611.802 (also available from The Hach Company).  
2524  
2525 "EPA Method 1600: Enterococci in Water by Membrane Filtration  
2526 Using Membrane-Enterococcus Indoxyl-b-D-Glucoside Agar  
2527 (mEI)," September 2002, EPA 821/R-02/022 (referred to as

2528 "USEPA Method 1600") is an approved variation of Standard  
2529 Methods, Method 9230 C, "Fecal Streptococcus and Enterococcus  
2530 Groups, Membrane Filter Techniques" (which has not itself been  
2531 approved for use by USEPA) (accessible on-line and available by  
2532 download from <http://www.epa.gov/nerlcwww/1600sp02.pdf>),  
2533 referenced in Section 611.802.

2534  
2535 "Method 1601: Male-specific ( $F^+$ ) and Somatic Coliphage in  
2536 Water by Two-step Enrichment Procedure," April 2001, EPA  
2537 821/R-01/030 (referred to as "USEPA Method 1601") (accessible  
2538 on-line and available by download from  
2539 <http://www.epa.gov/nerlcwww/1601ap01.pdf>), referenced in  
2540 Section 611.802.

2541  
2542 "Method 1602: Male-specific ( $F^+$ ) and Somatic Coliphage in  
2543 Water by Single Agar Layer (SAL) Procedure," April 2001, EPA  
2544 821/R-01/029 (referred to as "USEPA Method 1602") (accessible  
2545 on-line and available by download from  
2546 <http://www.epa.gov/nerlcwww/1602ap01.pdf>), referenced in  
2547 Section 611.802.

2548  
2549 "Method 1604: Total Coliforms and Escherichia coli in Water by  
2550 Membrane Filtration Using a Simultaneous Detection Technique  
2551 (MI Medium)," September 2002, EPA 821/R-02/024 (referred to  
2552 as "USEPA Method 1604") (accessible on-line and available by  
2553 download from <http://www.epa.gov/nerlcwww/1604sp02.pdf>),  
2554 referenced in Section 611.802.

2555  
2556 USGS. Books and Open-File Reports Section, United States Geological  
2557 Survey, Federal Center, Box 25286, Denver, CO 80225-0425.

2558  
2559 Methods available upon request by method number from "Methods  
2560 for Analysis by the U.S. Geological Survey National Water  
2561 Quality Laboratory – Determination of Inorganic and Organic  
2562 Constituents in Water and Fluvial Sediments," Open File Report  
2563 93-125, 1993, or Book 5, Chapter A-1, "Methods for  
2564 Determination of Inorganic Substances in Water and Fluvial  
2565 Sediments," 3rd ed., Open-File Report 85-495, 1989, as  
2566 appropriate (referred to as "USGS Methods").

2567  
2568 I-1030-85, referenced in Section 611.611.

2569  
2570 I-1601-85, referenced in Section 611.611.

2571	
2572	I-1700-85, referenced in Section 611.611.
2573	
2574	I-2598-85, referenced in Section 611.611.
2575	
2576	I-2601-90, referenced in Section 611.611.
2577	
2578	I-2700-85, referenced in Section 611.611.
2579	
2580	I-3300-85, referenced in Section 611.611.
2581	
2582	Methods available upon request by method number from "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments," Chapter A5 in Book 5 of "Techniques of Water-Resources Investigations of the United States Geological Survey," 1997.
2583	
2584	
2585	
2586	
2587	
2588	R-1110-76, referenced in Section 611.720.
2589	
2590	R-1111-76, referenced in Section 611.720.
2591	
2592	R-1120-76, referenced in Section 611.720.
2593	
2594	R-1140-76, referenced in Section 611.720.
2595	
2596	R-1141-76, referenced in Section 611.720.
2597	
2598	R-1142-76, referenced in Section 611.720.
2599	
2600	R-1160-76, referenced in Section 611.720.
2601	
2602	R-1171-76, referenced in Section 611.720.
2603	
2604	R-1180-76, referenced in Section 611.720.
2605	
2606	R-1181-76, referenced in Section 611.720.
2607	
2608	R-1182-76, referenced in Section 611.720.
2609	
2610	Waters Corporation, Technical Services Division, 34 Maple St., Milford, MA 01757 (800-252-4752 or <u>508-482-2131</u> , fax: 508-482-3625).
2611	
2612	
2613	"Waters Test Method for Determination of Nitrite/Nitrate in Water

Using Single Column Ion Chromatography," Method B-1011, August 1987 (referred to as "Waters Method B-1011"), referenced in Section 611.611.

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

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

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

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

40 CFR 3.2000 ~~(2007)~~(2006) (What Are the Requirements Authorized State, Tribe, and Local Programs' Reporting Systems Must Meet?), referenced in Section 611.105.

40 CFR 136.3(a) ~~(2007)~~(2006), referenced in Section 611.1004.

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

d) This Part incorporates no later amendments or editions.

(Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### SUBPART G: LEAD AND COPPER

#### Section 611.350 General Requirements

a) Applicability and Scope

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

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

2657 samples collected at consumers' taps.

2658  
2659 b) Definitions. For the purposes of only this Subpart G, the following terms have the  
2660 following meanings:

2661  
2662 "Action level" means that concentration of lead or copper in water  
2663 computed pursuant to subsection (c) of this Section that determines, in  
2664 some cases, the treatment requirements of this Subpart G that a supplier  
2665 must complete. The action level for lead is 0.015 mg/l. The action level  
2666 for copper is 1.3 mg/l.

2667  
2668 "Corrosion inhibitor" means a substance capable of reducing the  
2669 corrosivity of water toward metal plumbing materials, especially lead and  
2670 copper, by forming a protective film on the interior surface of those  
2671 materials.

2672  
2673 "Effective corrosion inhibitor residual" means a concentration of inhibitor  
2674 in the drinking water sufficient to form a passivating film on the interior  
2675 walls of a pipe.

2676  
2677 "Exceed," as this term is applied to either the lead or the copper action  
2678 level, means that the 90th percentile level of the supplier's samples  
2679 collected during a six-month monitoring period is greater than the action  
2680 level for that contaminant.

2681  
2682 "First draw sample" means a one-liter sample of tap water, collected in  
2683 accordance with Section 611.356(b)(2), that has been standing in  
2684 plumbing pipes for at least six hours and which is collected without  
2685 flushing the tap.

2686  
2687 "Large system" means a water system that regularly serves water to more  
2688 than 50,000 persons.

2689  
2690 "Lead service line" means a service line made of lead that connects the  
2691 water main to the building inlet, including any lead pigtail, gooseneck, or  
2692 other fitting that is connected to such lead line.

2693  
2694 "Maximum permissible concentration" or "MPC" means that  
2695 concentration of lead or copper for finished water entering the supplier's  
2696 distribution system, designated by the Agency by a SEP pursuant to  
2697 Sections 611.110 and 611.353(b) that reflects the contaminant removal  
2698 capability of the treatment properly operated and maintained.

2699 BOARD NOTE: Derived from 40 CFR 141.83(b)(4) (2007)(2002). (See

2700 Section 611.353(b)(4)(B).)

2701

2702 "Medium-sized system" means a water system that regularly serves water

2703 to more than 3,300 up to 50,000 or fewer persons.

2704

2705 "Meet," as this term is applied to either the lead or the copper action level,

2706 means that the 90<sup>th</sup> percentile level of the supplier's samples collected

2707 during a six-month monitoring period is less than or equal to the action

2708 level for that contaminant.

2709

2710 "Method detection limit" or "MDL" is as defined at Section 611.646(a).

2711 The MDL for lead is 0.001 mg/ℓ. The MDL for copper is 0.001 mg/ℓ, or

2712 0.020 mg/ℓ by atomic absorption direct aspiration method.

2713 BOARD NOTE: Derived from 40 CFR 141.89(a)(1)(iii) (2007)(2002).

2714

2715 "Monitoring period" means any of the six-month periods of time during

2716 which a supplier must complete a cycle of monitoring under this Subpart

2717 G.

2718 BOARD NOTE: USEPA refers to these as "monitoring periods." The

2719 Board uses "six-month monitoring period" to avoid confusion with

2720 "compliance period," as used elsewhere in this Part and defined at Section

2721 611.101.

2722

2723 "Multiple-family residence" means a building that is currently used as a

2724 multiple-family residence, but not one that is also a "single-family

2725 structure."

2726

2727 "90<sup>th</sup> percentile level" means that concentration of lead or copper

2728 contaminant exceeded by ten percent or fewer of all samples collected

2729 during a six-month monitoring period pursuant to Section 611.356 (i.e.,

2730 that concentration of contaminant greater than or equal to the results

2731 obtained from 90 percent of the samples). The 90<sup>th</sup> percentile levels for

2732 copper and lead must be determined pursuant to subsection (c)(3) of this

2733 Section.

2734 BOARD NOTE: Derived from 40 CFR 141.80(c) (2007)(2002).

2735

2736 "Optimal corrosion control treatment" means the corrosion control

2737 treatment that minimizes the lead and copper concentrations at users' taps

2738 while ensuring that the treatment does not cause the water system to

2739 violate any national primary drinking water regulations.

2740

2741 "Practical quantitation limit" or "PQL" means the lowest concentration of

2742 a contaminant that a well-operated laboratory can reliably achieve within



2743 specified limits of precision and accuracy during routine laboratory  
2744 operating conditions. The PQL for lead is 0.005 mg/ℓ. The PQL for  
2745 copper is 0.050 mg/ℓ.  
2746 BOARD NOTE: Derived from 40 CFR 141.89(a)(1)(ii) and (a)(1)(iv)  
2747 (2007)~~(2002)~~.

2748  
2749 "Service line sample" means a one-liter sample of water, collected in  
2750 accordance with Section 611.356(b)(3), that has been standing for at least  
2751 six hours in a service line.

2752  
2753 "Single-family structure" means a building that was constructed as a  
2754 single-family residence and which is currently used as either a residence  
2755 or a place of business.

2756  
2757 "Small system" means a water system that regularly serves water to 3,300  
2758 or fewer persons.  
2759 BOARD NOTE: Derived from 40 CFR 141.2 (2007)~~(2002)~~.

2760  
2761 c) Lead and Copper Action Levels.

2762  
2763 1) The lead action level is exceeded if the 90<sup>th</sup> percentile lead level is greater  
2764 than 0.015 mg/ℓ.

2765  
2766 2) The copper action level is exceeded if the 90<sup>th</sup> percentile copper level is  
2767 greater than 1.3 mg/ℓ.

2768  
2769 3) Suppliers must compute the 90<sup>th</sup> percentile lead and copper levels as  
2770 follows:

2771  
2772 A) List the results of all lead or copper samples taken during a six-  
2773 month monitoring period in ascending order, ranging from the  
2774 sample with the lowest concentration first to the sample with the  
2775 highest concentration last. Assign each sampling result a number,  
2776 ascending by single integers beginning with the number 1 for the  
2777 sample with the lowest contaminant level. The number assigned to  
2778 the sample with the highest contaminant level must be equal to the  
2779 total number of samples taken.

2780  
2781 B) Determine the number for the 90<sup>th</sup> percentile sample by  
2782 multiplying the total number of samples taken during the six-  
2783 month monitoring period by 0.9.

2784  
2785 C) The contaminant concentration in the sample with the number

2786 yielded by the calculation in subsection (c)(3)(B) of this Section is  
 2787 the 90<sup>th</sup> percentile contaminant level.

2788  
 2789 D) For suppliers that collect five samples per six-month monitoring  
 2790 period, the 90<sup>th</sup> percentile is computed by taking the average of the  
 2791 highest and second highest concentrations.

2792  
 2793 E) For a supplier that has been allowed by the Agency to collect fewer  
 2794 than five samples in accordance with Section 611.356(c), the  
 2795 sample result with the highest concentration is considered the 90<sup>th</sup>  
 2796 percentile value.

2797  
 2798 d) Corrosion Control Treatment Requirements.

- 2799  
 2800 1) All suppliers must install and operate optimal corrosion control treatment.  
 2801  
 2802 2) Any supplier that complies with the applicable corrosion control treatment  
 2803 requirements specified by the Agency pursuant to Sections 611.351 and  
 2804 611.352 is deemed in compliance with the treatment requirement of  
 2805 subsection (d)(1) of this Section.

2806  
 2807 e) Source water treatment requirements. Any supplier whose system exceeds the  
 2808 lead or copper action level must implement all applicable source water treatment  
 2809 requirements specified by the Agency pursuant to Section 611.353.

2810  
 2811 f) Lead service line replacement requirements. Any supplier whose system exceeds  
 2812 the lead action level after implementation of applicable corrosion control and  
 2813 source water treatment requirements must complete the lead service line  
 2814 replacement requirements contained in Section 611.354.

2815  
 2816 g) Public education requirements. Pursuant to Section 611.355, the supplier must  
 2817 provide a consumer notice of the lead tap water monitoring results to the persons  
 2818 served at each site (tap) that is tested. Any supplier whose system exceeds the  
 2819 lead action level must implement the public education requirements-~~contained in~~  
 2820 ~~Section 611.355.~~

2821  
 2822 h) Monitoring and analytical requirements. Suppliers must complete all tap water  
 2823 monitoring for lead and copper, monitoring for water quality parameters, source  
 2824 water monitoring for lead and copper, and analyses of the monitoring results  
 2825 under this Subpart G in compliance with Sections 611.356, 611.357, 611.358, and  
 2826 611.359.

2827  
 2828 i) Reporting requirements. Suppliers must report to the Agency any information

2829 required by the treatment provisions of this Subpart G and Section 611.360.  
2830

- 2831 j) Recordkeeping requirements. Suppliers must maintain records in accordance with  
2832 Section 611.361.
- 2833
- 2834 k) Violation of national primary drinking water regulations. Failure to comply with  
2835 the applicable requirements of this Subpart G, including conditions imposed by  
2836 the Agency by SEP pursuant to these provisions and Section 611.110, will  
2837 constitute a violation of the national primary drinking water regulations for lead  
2838 or copper.

2839  
2840 BOARD NOTE: Derived from 40 CFR 141.80 (2007), as amended at 72 Fed. Reg.  
2841 57782 (October 10, 2007)(2002).

2842  
2843 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)  
2844

2845 **Section 611.351 Applicability of Corrosion Control**

- 2846
- 2847 a) Corrosion control required. Suppliers must complete the applicable corrosion  
2848 control treatment requirements described in Section 611.352 on or before the  
2849 deadlines set forth in this Section.
- 2850
- 2851 1) Large systems. Each large system supplier (one regularly serving more  
2852 than 50,000 persons) must complete the corrosion control treatment steps  
2853 specified in subsection (d) of this Section, unless it is deemed to have  
2854 optimized corrosion control under subsection (b)(2) or (b)(3) of this  
2855 Section.
- 2856
- 2857 2) Medium-sized and small systems. Each small system supplier (one  
2858 regularly serving 3,300 or fewer persons) and each medium-sized system  
2859 (one regularly serving more than 3,300 up to 50,000 persons) must  
2860 complete the corrosion control treatment steps specified in subsection (e)  
2861 of this Section, unless it is deemed to have optimized corrosion control  
2862 under one of subsections (b)(1), (b)(2), or (b)(3) of this Section.
- 2863
- 2864 b) Suppliers deemed to have optimized corrosion control. A supplier is deemed to  
2865 have optimized corrosion control, and is not required to complete the applicable  
2866 corrosion control treatment steps identified in this Section, if the supplier satisfies  
2867 one of the criteria specified in subsections (b)(1) through (b)(3) of this Section.  
2868 Any such system deemed to have optimized corrosion control under this  
2869 subsection, and which has treatment in place, must continue to operate and  
2870 maintain optimal corrosion control treatment and meet any requirements that the  
2871 Agency determines are appropriate to ensure optimal corrosion control treatment

- 2872 is maintained.
- 2873
- 2874 1) Small- or medium-sized system meeting action levels. A small system or
- 2875 medium-sized system supplier is deemed to have optimized corrosion
- 2876 control if the system meets the lead and copper action levels during each
- 2877 of two consecutive six-month monitoring periods with monitoring
- 2878 conducted in accordance with Section 611.356.
- 2879
- 2880 2) SEP for equivalent activities to corrosion control. The Agency must, by a
- 2881 SEP granted pursuant to Section 611.110, deem any supplier to have
- 2882 optimized corrosion control treatment if it determines that the supplier has
- 2883 conducted activities equivalent to the corrosion control steps applicable
- 2884 under this Section. In making this determination, the Agency must specify
- 2885 the water quality control parameters representing optimal corrosion
- 2886 control in accordance with Section 611.352(f). A water supplier that is
- 2887 deemed to have optimized corrosion control under this subsection (b)(2)
- 2888 must operate in compliance with the Agency-designated optimal water
- 2889 quality control parameters in accordance with Section 611.352(g) and
- 2890 must continue to conduct lead and copper tap and water quality parameter
- 2891 sampling in accordance with Sections 611.356(d)(3) and 611.357(d),
- 2892 respectively. A supplier must provide the Agency with the following
- 2893 information in order to support an Agency SEP determination under this
- 2894 subsection (b)(2):
- 2895
- 2896 A) The results of all test samples collected for each of the water
- 2897 quality parameters in Section 611.352(c)(3);
- 2898
- 2899 B) A report explaining the test methods the supplier used to evaluate
- 2900 the corrosion control treatments listed in Section 611.352(c)(1), the
- 2901 results of all tests conducted, and the basis for the supplier's
- 2902 selection of optimal corrosion control treatment;
- 2903
- 2904 C) A report explaining how the supplier has installed corrosion
- 2905 control and how the supplier maintains it to insure minimal lead
- 2906 and copper concentrations at consumer's taps; and
- 2907
- 2908 D) The results of tap water samples collected in accordance with
- 2909 Section 611.356 at least once every six months for one year after
- 2910 corrosion control has been installed.
- 2911
- 2912 3) Results less than practical quantitation level (PQL) for lead. Any supplier
- 2913 is deemed to have optimized corrosion control if it submits results of tap
- 2914 water monitoring conducted in accordance with Section 611.356 and

2915 source water monitoring conducted in accordance with Section 611.358  
 2916 that demonstrate that for two consecutive six-month monitoring periods  
 2917 the difference between the 90th percentile tap water lead level, computed  
 2918 pursuant to Section 611.350(c)(3), and the highest source water lead  
 2919 concentration is less than the practical quantitation level for lead specified  
 2920 in Section 611.359(a)(1)(B)(i).

- 2921
- 2922 A) Those systems whose highest source water lead level is below the
- 2923 method detection limit (MDL) may also be deemed to have
- 2924 optimized corrosion control under this subsection (b) if the 90th
- 2925 percentile tap water lead level is less than or equal to the PQL for
- 2926 lead for two consecutive six-month monitoring periods.
- 2927
- 2928 B) Any water system deemed to have optimized corrosion control in
- 2929 accordance with this subsection (b) must continue monitoring for
- 2930 lead and copper at the tap no less frequently than once every three
- 2931 calendar years using the reduced number of sites specified in
- 2932 Section 611.356(c) and collecting the samples at times and
- 2933 locations specified in Section 611.356(d)(4)(D). Any such system
- 2934 that has not conducted a round of monitoring pursuant to Section
- 2935 611.356(d) since September 30, 1997, must have completed a
- 2936 round of monitoring pursuant to this subsection (b) no later than
- 2937 September 30, 2000.
- 2938
- 2939 C) Any water system deemed to have optimized corrosion control
- 2940 pursuant to this subsection (b) must notify the Agency in writing
- 2941 pursuant to Section 611.360(a)(3) of any upcoming long-term
- 2942 change in treatment or the addition of a new source, as described in
- 2943 that Section. The Agency must review and approve the addition of
- 2944 a new source or any long-term change in water treatment before
- 2945 the addition or long-term change is implemented by the water
- 2946 system ~~require any such system to conduct additional monitoring~~
- 2947 ~~or to take other action if the Agency determines that the additional~~
- 2948 ~~monitoring is necessary and appropriate to ensure that the supplier~~
- 2949 ~~maintains minimal levels of corrosion in its distribution system.~~
- 2950
- 2951 D) ~~As of July 12, 2001,~~ a supplier is not deemed to have optimized
- 2952 corrosion control under this subsection (b), and must implement
- 2953 corrosion control treatment pursuant to subsection (b)(3)(E) of this
- 2954 Section, unless it meets the copper action level.
- 2955
- 2956 E) Any supplier triggered into corrosion control because it is no
- 2957 longer deemed to have optimized corrosion control under this

2958 subsection must implement corrosion control treatment in  
2959 accordance with the deadlines in subsection (e) of this Section.  
2960 Any such large system supplier must adhere to the schedule  
2961 specified in that subsection (e) for a medium-sized system supplier,  
2962 with the time periods for completing each step being triggered by  
2963 the date the supplier is no longer deemed to have optimized  
2964 corrosion control under this subsection (b).  
2965

- 2966 c) Suppliers not required to complete corrosion control steps for having met both  
2967 action levels.  
2968
- 2969 1) Any small system or medium-sized system supplier, otherwise required to  
2970 complete the corrosion control steps due to its exceedence of the lead or  
2971 copper action level, may cease completing the treatment steps after the  
2972 supplier has fulfilled both of the following conditions:  
2973
- 2974 A) It has met both the copper action level and the lead action level  
2975 during each of two consecutive six-month monitoring periods  
2976 conducted pursuant to Section 611.356; and  
2977
- 2978 B) The supplier has submitted the results for those two consecutive  
2979 six-month monitoring periods to the Agency.  
2980
- 2981 2) A supplier that has ceased completing the corrosion control steps pursuant  
2982 to subsection (c)(1) of this Section (or the Agency, if appropriate) must  
2983 resume completion of the applicable treatment steps, beginning with the  
2984 first treatment step that the supplier previously did not complete in its  
2985 entirety, if the supplier thereafter exceeds the lead or copper action level  
2986 during any monitoring period.  
2987
- 2988 3) The Agency may, by SEP, require a supplier to repeat treatment steps  
2989 previously completed by the supplier where it determines that this is  
2990 necessary to properly implement the treatment requirements of this  
2991 Section. Any such SEP must explain the basis for this decision.  
2992
- 2993 4) The requirement for any small- or medium-sized system supplier to  
2994 implement corrosion control treatment steps in accordance with subsection  
2995 (e) of this Section (including systems deemed to have optimized corrosion  
2996 control under subsection (b)(1) of this Section) is triggered whenever any  
2997 small- or medium-sized system supplier exceeds the lead or copper action  
2998 level.  
2999
- 3000 d) Treatment steps and deadlines for large systems. Except as provided in

3001 subsections (b)(2) and (b)(3) of this Section, large system suppliers must complete  
 3002 the following corrosion control treatment steps (described in the referenced  
 3003 portions of Sections 611.352, 611.356, and 611.357) on or before the indicated  
 3004 dates.

- 3005
- 3006 1) Step 1: The supplier must have conducted initial monitoring (Sections  
 3007 611.356(d)(1) and 611.357(b)) during two consecutive six-month  
 3008 monitoring periods on or before January 1, 1993.
- 3009
- 3010 2) Step 2: The supplier must have completed corrosion control studies  
 3011 (Section 611.352(c)) on or before July 1, 1994.
- 3012
- 3013 3) Step 3: The Agency must have approved optimal corrosion control  
 3014 treatment (Section 611.352(d)) by a SEP issued pursuant to Section  
 3015 611.110 on or before January 1, 1995.
- 3016
- 3017 4) Step 4: The supplier must have installed optimal corrosion control  
 3018 treatment (Section 611.352(e)) by January 1, 1997.
- 3019
- 3020 5) Step 5: The supplier must have completed follow-up sampling (Sections  
 3021 611.356(d)(2) and 611.357(c)) by January 1, 1998.
- 3022
- 3023 6) Step 6: The Agency must have reviewed installation of treatment and  
 3024 approve optimal water quality control parameters (Section 611.352(f)) by  
 3025 July 1, 1998.
- 3026
- 3027 7) Step 7: The supplier must operate in compliance with the Agency-  
 3028 specified optimal water quality control parameters (Section 611.352(g))  
 3029 and continue to conduct tap sampling (Sections 611.356(d)(3) and  
 3030 611.357(d)).

3031

3032 e) Treatment steps and deadlines for small- and medium-sized system suppliers.  
 3033 Except as provided in subsection (b) of this Section, small- and medium-sized  
 3034 system suppliers must complete the following corrosion control treatment steps  
 3035 (described in the referenced portions of Sections 611.352, 611.356, and 611.357)  
 3036 by the indicated time periods.

- 3037
- 3038 1) Step 1: The supplier must conduct initial tap sampling (Sections  
 3039 611.356(d)(1) and 611.357(b)) until the supplier either exceeds the lead  
 3040 action level or the copper action level or it becomes eligible for reduced  
 3041 monitoring under Section 611.356(d)(4). A supplier exceeding the lead  
 3042 action level or the copper action level must recommend optimal corrosion  
 3043 control treatment (Section 611.352(a)) within six months after the end of

- 3044                    the monitoring period during which it exceeds one of the action levels.  
 3045
- 3046                    2)    Step 2: Within 12 months after the end of the monitoring period during  
 3047                    which a supplier exceeds the lead action level or the copper action level,  
 3048                    the Agency may require the supplier to perform corrosion control studies  
 3049                    (Section 611.352(b)). If the Agency does not require the supplier to  
 3050                    perform such studies, the Agency must, by a SEP issued pursuant to  
 3051                    Section 611.110, specify optimal corrosion control treatment (Section  
 3052                    611.352(d)) within the appropriate of the following timeframes:  
 3053
- 3054                    A)    ~~For~~ medium-sized systems, within 18 months after the end of  
 3055                    the monitoring period during which such supplier exceeds the lead  
 3056                    action level or the copper action level; or,  
 3057
- 3058                    B)    ~~For~~ small systems, within 24 months after the end of the  
 3059                    monitoring period during which such supplier exceeds the lead  
 3060                    action level or the copper action level.  
 3061
- 3062                    3)    Step 3: If the Agency requires a supplier to perform corrosion control  
 3063                    studies under step 2 (subsection (e)(2) of this Section), the supplier must  
 3064                    complete the studies (Section 611.352(c)) within 18 months after the  
 3065                    Agency requires that such studies be conducted.  
 3066
- 3067                    4)    Step 4: If the supplier has performed corrosion control studies under step  
 3068                    2 (subsection (e)(2) of this Section), the Agency must, by a SEP issued  
 3069                    pursuant to Section 611.110, approve optimal corrosion control treatment  
 3070                    (Section 611.352(d)) within six months after completion of step 3  
 3071                    (subsection (e)(3) of this Section).  
 3072
- 3073                    5)    Step 5: The supplier must install optimal corrosion control treatment  
 3074                    (Section 611.352(e)) within 24 months after the Agency approves such  
 3075                    treatment.  
 3076
- 3077                    6)    Step 6: The supplier must complete follow-up sampling (Sections  
 3078                    611.356(d)(2) and 611.357(c)) within 36 months after the Agency  
 3079                    approves optimal corrosion control treatment.  
 3080
- 3081                    7)    Step 7: The Agency must review the supplier's installation of treatment  
 3082                    and, by a SEP issued pursuant to Section 611.110, approve optimal water  
 3083                    quality control parameters (Section 611.352(f)) within six months after  
 3084                    completion of step 6 (subsection (e)(6) of this Section).  
 3085
- 3086                    8)    Step 8: The supplier must operate in compliance with the Agency-



3087 approved optimal water quality control parameters (Section 611.352(g))  
3088 and continue to conduct tap sampling (Sections 611.356(d)(3) and  
3089 611.357(d)).  
3090

3091 BOARD NOTE: Derived from 40 CFR 141.81 (2007), as amended at 72 Fed. Reg.  
3092 57782 (October 10, 2007)(2003).  
3093

3094 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)  
3095

3096 **Section 611.353 Source Water Treatment**  
3097

3098 Suppliers must complete the applicable source water monitoring and treatment requirements  
3099 (described in the referenced portions of subsection (b) of this Section, and in Sections 611.356  
3100 and 611.358) by the following deadlines.  
3101

3102 a) Deadlines for completing source water treatment steps.  
3103

3104 1) Step 1: A supplier exceeding the lead action level or the copper action  
3105 level must complete lead and copper and source water monitoring (Section  
3106 611.358(b)) and make a treatment recommendation to the Agency  
3107 (subsection (b)(1) of this Section) within 180 days~~six months~~ after the end  
3108 of the monitoring period during which the supplier exceeded~~exceeding~~  
3109 the pertinent action level.  
3110

3111 2) Step 2: The Agency must, by a SEP issued pursuant to Section 611.110,  
3112 make a determination regarding source water treatment (subsection (b)(2)  
3113 of this Section) within six months after submission of monitoring results  
3114 under step 1.  
3115

3116 3) Step 3: If the Agency requires installation of source water treatment, the  
3117 supplier must install that treatment (subsection (b)(3) of this Section)  
3118 within 24 months after completion of step 2.  
3119

3120 4) Step 4: The supplier must complete follow-up tap water monitoring  
3121 (Section 611.356(d)(2)) and source water monitoring (Section 611.358(c))  
3122 within 36 months after completion of step 2.  
3123

3124 5) Step 5: The Agency must, by a SEP issued pursuant to Section 611.110,  
3125 review the supplier's installation and operation of source water treatment  
3126 and specify MPCs for lead and copper (subsection (b)(4) of this Section)  
3127 within six months after completion of step 4.  
3128

3129 6) Step 6: The supplier must operate in compliance with the Agency-

3130 specified lead and copper MPCs (subsection (b)(4) of this Section) and  
3131 continue source water monitoring (Section 611.358(d)).  
3132

3133 b) Description of Source Water Treatment Requirements.  
3134

3135 1) System treatment recommendation. Any supplier that exceeds the lead  
3136 action level or the copper action level must recommend in writing to the  
3137 Agency the installation and operation of one of the source water  
3138 treatments listed in subsection (b)(2) of this Section. A supplier may  
3139 recommend that no treatment be installed based on a demonstration that  
3140 source water treatment is not necessary to minimize lead and copper levels  
3141 at users' taps.  
3142

3143 2) Agency determination regarding source water treatment.  
3144

3145 A) The Agency must complete an evaluation of the results of all  
3146 source water samples submitted by the supplier to determine  
3147 whether source water treatment is necessary to minimize lead or  
3148 copper levels in water delivered to users' taps.  
3149

3150 B) If the Agency determines that treatment is needed, the Agency  
3151 must, by a SEP issued pursuant to Section 611.110, either require  
3152 installation and operation of the source water treatment  
3153 recommended by the supplier (if any) or require the installation  
3154 and operation of another source water treatment from among the  
3155 following:  
3156

3157 i) ion exchange;

3158 ii) reverse osmosis;

3159 iii) lime softening; or  
3160

3161 iv) coagulation/filtration.  
3162

3163 C) The Agency may request and the supplier must submit such  
3164 additional information, on or before a certain date, as the Agency  
3165 determines is necessary to aid in its review.  
3166

3167 D) The Agency must notify the supplier in writing of its determination  
3168 and set forth the basis for its decision.  
3169

3170 3) Installation of source water treatment. Each supplier must properly install  
3171  
3172

- 3173 and operate the source water treatment approved by the Agency under  
3174 subsection (b)(2) of this Section.  
3175  
3176 4) Agency review of source water treatment and specification of maximum  
3177 permissible source water levels (MPCs).  
3178  
3179 A) The Agency must review the source water samples taken by the  
3180 supplier both before and after the supplier installs source water  
3181 treatment, and determine whether the supplier has properly  
3182 installed and operated the approved source water treatment.  
3183  
3184 B) Based on its review, the Agency must, by a SEP issued pursuant to  
3185 Section 611.110, approve the lead and copper MPCs for finished  
3186 water entering the supplier's distribution system. Such levels must  
3187 reflect the contaminant removal capability of the treatment  
3188 properly operated and maintained.  
3189  
3190 C) The Agency must explain the basis for its decision under  
3191 subsection (b)(4)(B) of this Section.  
3192  
3193 5) Continued operation and maintenance. Each supplier must maintain lead  
3194 and copper levels below the MPCs approved by the Agency at each  
3195 sampling point monitored in accordance with Section 611.358. The  
3196 supplier is out of compliance with this subsection if the level of lead or  
3197 copper at any sampling point is greater than the MPC approved by the  
3198 Agency pursuant to subsection (b)(4)(B) of this Section.  
3199  
3200 6) Modification of Agency treatment decisions.  
3201  
3202 A) On its own initiative, or in response to a request by a supplier, the  
3203 Agency may, by a SEP issued pursuant to Section 611.110, modify  
3204 its determination of the source water treatment under subsection  
3205 (b)(2) of this Section, or the lead and copper MPCs under  
3206 subsection (b)(4) of this Section.  
3207  
3208 B) A request for modification by a supplier must be in writing,  
3209 explain why the modification is appropriate, and provide  
3210 supporting documentation.  
3211  
3212 C) The Agency may, by a SEP issued pursuant to Section 611.110,  
3213 modify its determination where it concludes that such change is  
3214 necessary to ensure that the supplier continues to minimize lead  
3215 and copper concentrations in source water.

- 3216  
3217  
3218  
3219  
3220  
3221  
3222  
3223  
3224  
3225  
3226  
3227  
3228  
3229  
3230  
3231  
3232  
3233  
3234  
3235  
3236  
3237  
3238  
3239  
3240  
3241  
3242  
3243  
3244  
3245  
3246
- D) A revised determination made pursuant to subsection (b)(6)(C) of this Section must set forth the new treatment requirements, explain the basis for the Agency's decision, and provide an implementation schedule for completing the treatment modifications.
  - E) Any interested person may submit information to the Agency, in writing, that bears on whether the Agency should, within its discretion, issue a SEP to modify its determination pursuant to subsection (h)(1) of this Section. An Agency determination not to act on a submission of such information by an interested person is not an Agency determination for the purposes of Sections 39 and 40 of the Act [415 ILCS 5/39 and 40].
- 7) Treatment decisions by USEPA. Pursuant to the procedures in 40 CFR 142.19, the USEPA Regional Administrator reserves the prerogative to review treatment determinations made by the Agency under subsections (b)(2), (b)(4), or (b)(6) of this Section and issue federal treatment determinations consistent with the requirements of 40 CFR 141.83(b)(2), (b)(4), and (b)(6), where the Administrator finds that the following is true:
- A) the Agency has failed to issue a treatment determination by the applicable deadline contained in subsection (a) of this Section;
  - B) the Agency has abused its discretion in a substantial number of cases or in cases affecting a substantial population; or
  - C) the technical aspects of the Agency's determination would be indefensible in an expected federal enforcement action taken against a supplier.

3247 BOARD NOTE: Derived from 40 CFR 141.83 (2007), as amended at 72 Fed. Reg.  
3248 57782 (October 10, 2007)(2002).

3249 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

3250  
3251  
3252 **Section 611.354 Lead Service Line Replacement**

- 3253  
3254 a) Suppliers required to replace lead service lines.
- 1) If the results from tap samples taken pursuant to Section 611.356(d)(2) exceed the lead action level after the supplier has installed corrosion control or source water treatment (whichever sampling occurs later), the
- 3255  
3256  
3257  
3258

3259 supplier must recommence replacing lead service lines in accordance with  
3260 the requirements of subsection (b) of this Section.

3261  
3262 2) If a supplier is in violation of Section 611.351 or Section 611.353 for  
3263 failure to install source water or corrosion control treatment, the Agency  
3264 may, by a SEP issued pursuant to Section 611.110, require the supplier to  
3265 commence lead service line replacement under this Section after the date  
3266 by which the supplier was required to conduct monitoring under Section  
3267 611.356(d)(2) has passed.

3268  
3269 b) Annual replacement of lead service lines.

3270  
3271 1) Initiation of a lead service line replacement program.

3272  
3273 A1) A supplier that is required to commence lead service line  
3274 replacement pursuant to subsection (a) of this Section must  
3275 annually replace at least seven percent of the initial number of lead  
3276 service lines in its distribution system.

3277  
3278 B2) The initial number of lead service lines is the number of lead lines  
3279 in place at the time the replacement program begins.

3280  
3281 C3) The supplier must identify the initial number of lead service lines  
3282 in its distribution system, including an identification of the portions  
3283 of the system owned by the supplier, based on a materials  
3284 evaluation, including the evaluation required under Section  
3285 611.356(a) and relevant legal authorities (e.g., contracts, local  
3286 ordinances) regarding the portion owned by the system.

3287  
3288 D4) The first year of lead service line replacement must begin on the  
3289 first day following the end of the monitoring period in which date  
3290 the supplier exceeded the action level pursuant to in-tap sampling  
3291 referenced in subsection (a) of this Section.

3292  
3293 E) If monitoring is required annually or less frequently, the end of the  
3294 monitoring period is September 30 of the calendar year in which  
3295 the sampling occurs.

3296  
3297 F) If the Agency has established an alternate monitoring period by a  
3298 SEP issued pursuant to Section 611.110, then the end of the  
3299 monitoring period will be the last day of that period.

3300  
3301 2) Resumption of a lead service line replacement program after cessation.

3302  
3303  
3304  
3305  
3306  
3307  
3308  
3309  
3310  
3311  
3312  
3313  
3314  
3315  
3316  
3317  
3318  
3319  
3320  
3321  
3322  
3323  
3324  
3325  
3326  
3327  
3328  
3329  
3330  
3331  
3332  
3333  
3334  
3335  
3336  
3337  
3338  
3339  
3340  
3341  
3342  
3343  
3344

- A) A supplier that is resuming a program after cessation of its lead service line replacement program, as allowed pursuant to subsection (f) of this Section, must update its inventory of lead service lines to include those sites that it had previously determined did not require replacement pursuant to the sampling provision of subsection (c) of this Section.
  
- B) The supplier will then divide the updated number of remaining lead service lines by the number of remaining years in the program to determine the number of lines that must be replaced per year (seven percent lead service line replacement is based on a 15-year replacement program, so that, for example, a supplier resuming lead service line replacement after previously conducting two years of replacement would divide the updated inventory by 13).
  
- C) For a supplier that has completed a 15-year lead service line replacement program, the Agency must, by a SEP issued pursuant to Section 611.110, determine a schedule for replacing or retesting lines that were previously tested out under the completed replacement program, whenever the supplier has re-exceeded the action level.

- c) Service lines not needing replacement. A supplier is not required to replace any individual lead service line for which the lead concentrations in all service line samples taken from that line pursuant to Section 611.356(b)(3) are less than or equal to 0.015 mg/l.
  
- d) A water supplier must replace that portion of the lead service line that it owns. In cases where the supplier does not own the entire lead service line, the supplier must notify the owner of the line, or the owner's authorized agent, that the supplier will replace the portion of the service line that it owns and must offer to replace the owner's portion of the line. A supplier is not required to bear the cost of replacing the privately-owned portion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by State, local, or common law. A water supplier that does not replace the entire length of the service line also must complete the following tasks:
  - 1) Notice Prior to Commencement of Work.
    - A) At least 45 days prior to commencing the partial replacement of a

3345 lead service line, the water supplier must provide notice to the  
3346 residents of all buildings served by the line explaining that they  
3347 may experience a temporary increase of lead levels in their  
3348 drinking water, along with guidance on measures consumers can  
3349 take to minimize their exposure to lead.

3350  
3351 B) The Agency, by issuing an appropriate SEP, may allow the water  
3352 supplier to provide notice under the previous sentence less than 45  
3353 days prior to commencing partial lead service line replacement  
3354 where it determines that such replacement is in conjunction with  
3355 emergency repairs.

3356  
3357 C) In addition, the water supplier must inform the residents served by  
3358 the line that the supplier will, at the supplier's expense, collect a  
3359 sample from each partially-replaced lead service line that is  
3360 representative of the water in the service line for analysis of lead  
3361 content, as prescribed by Section 611.356(b)(3), within 72 hours  
3362 after the completion of the partial replacement of the service line.  
3363 The supplier must collect the sample and report the results of the  
3364 analysis to the owner and the residents served by the line within  
3365 three business days of receiving the results.

3366  
3367 D) Mailed notices post-marked within three business days of receiving  
3368 the results must be considered "on time."

3369  
3370 2) The water supplier must provide the information required by subsection  
3371 (d)(1) of this Section to the residents of individual dwellings by mail or by  
3372 other methods approved by the Agency by a SEP issued pursuant to  
3373 Section 611.110. In instances where multi-family dwellings are served by  
3374 the service line, the water supplier must have the option to post the  
3375 information at a conspicuous location.

3376  
3377 e) Agency determination of shorter replacement schedule.

3378  
3379 1) The Agency must, by a SEP issued pursuant to Section 611.110, require a  
3380 supplier to replace lead service lines on a shorter schedule than that  
3381 otherwise required by this Section if it determines, taking into account the  
3382 number of lead service lines in the system, that such a shorter replacement  
3383 schedule is feasible.

3384  
3385 2) The Agency must notify the supplier of its finding pursuant to subsection  
3386 (e)(1) of this Section within six months after the supplier is triggered into  
3387 lead service line replacement based on monitoring, as referenced in

- 3388 subsection (a) of this Section.  
 3389  
 3390 f) Cessation of service line replacement.  
 3391  
 3392 1) Any supplier may cease replacing lead service lines whenever it fulfills  
 3393 both of the following conditions:  
 3394  
 3395 A) First draw tap samples collected pursuant to Section 611.356(b)(2)  
 3396 meet the lead action level during each of two consecutive six-  
 3397 month monitoring periods; and  
 3398  
 3399 B) The supplier has submitted those results to the Agency.  
 3400  
 3401 2) If any of the supplier's first draw tap samples thereafter exceed the lead  
 3402 action level, the supplier must recommence replacing lead service lines  
 3403 pursuant to subsection (b)(2) of this Section.  
 3404  
 3405 g) To demonstrate compliance with subsections (a) through (d) of this Section, a  
 3406 supplier must report to the Agency the information specified in Section  
 3407 611.360(e).  
 3408

3409 BOARD NOTE: Derived from 40 CFR 141.84 (2007), as amended at 72 Fed. Reg.  
 3410 57782 (October 10, 2007)(2003).

3411  
 3412 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)  
 3413

3414 **Section 611.355 Public Education and Supplemental Monitoring**  
 3415

3416 A supplier that exceeds the lead action level based on tap water samples collected in accordance  
 3417 with Section 611.356 must deliver the public education materials required by  
 3418 subsections (a) and (b) of this Section in accordance with the requirements of  
 3419 subsection (b)(e) of this Section. A supplier that exceeds the lead action level must sample the  
 3420 tap water of any customer who requests it in accordance with subsection (c) of this Section. A  
 3421 supplier must deliver a consumer notice of lead tap water monitoring results to persons who are  
 3422 served by the supplier at each site that the supplier has tested, as specified in subsection (d) of  
 3423 this Section.  
 3424

- 3425 a) Content of written public education materials.  
 3426  
 3427 1) Community water systems and non-transient non-community water  
 3428 systems. A CWS or NTNCWS supplier must include the following  
 3429 elements in printed materials (e.g., brochures and pamphlets) in the same  
 3430 order as listed in subsections (a)(1)(A) through (a)(1)(F). In addition, the



3431 supplier must include the language set forth in subsections (a)(1)(A),  
 3432 (a)(1)(B), and (a)(1)(F) of this Section in the materials, exactly as written,  
 3433 except for the text in brackets in these subsections, for which the supplier  
 3434 must include system-specific information. Any additional information  
 3435 presented by a supplier must be consistent with the information set forth in  
 3436 subsections (a)(1)(A) through (a)(1)(F), and the supplier must present the  
 3437 additional information in plain language that can be understood by the  
 3438 general public. The supplier must submit all written public education  
 3439 materials to the Agency prior to delivery, as required by subsection (a)(3)  
 3440 of this Section, text set forth in Appendix E of this Part in all of the printed  
 3441 materials it distributes through its lead public education program. A  
 3442 supplier may delete information pertaining to lead service lines, upon  
 3443 approval by the Agency by a SEP issued pursuant to Section 611.110, if  
 3444 no lead service lines exist anywhere in the water system service area.  
 3445 Public education language at paragraphs (4)(B)(5) and (4)(D)(2) of  
 3446 Appendix E of this Part may be modified regarding building permit record  
 3447 availability and consumer access to these records, if approved by the  
 3448 Agency by a SEP issued pursuant to Section 611.110. A supplier may  
 3449 also continue to utilize pre-printed materials that meet the public education  
 3450 language requirements in 40 CFR 141.85 (1991). Any additional  
 3451 information presented by a supplier must be consistent with the  
 3452 information in Appendix E of this Part and be in plain English that can be  
 3453 understood by lay persons.

3454  
 3455 ~~BOARD NOTE: At corresponding 40 CFR 141.85 (a)(1) (2002), USEPA~~  
 3456 ~~allowed the use of pre-printed copies of the public notices whose content~~  
 3457 ~~met the requirements of the original lead and copper rule adopted on June~~  
 3458 ~~7, 1991 (56 Fed. Reg. 26548). Rather than reference a prior version of this~~  
 3459 ~~Section of the Illinois rules, the Board has retained the federal reference to~~  
 3460 ~~the prior requirements.~~

3461  
 3462 A) **IMPORTANT INFORMATION ABOUT LEAD IN YOUR**  
 3463 **DRINKING WATER. [INSERT NAME OF SUPPLIER] found**  
 3464 **elevated levels of lead in drinking water in some homes/buildings.**  
 3465 **Lead can cause serious health problems, especially for pregnant**  
 3466 **women and young children. Please read this information closely to**  
 3467 **see what you can do to reduce lead in your drinking water.**

3468  
 3469 BOARD NOTE: The supplier must use the verbatim text set forth  
 3470 in this subsection (a)(1)(A), with the exception that the supplier  
 3471 must insert its name in place of the bracketed text.

3472

3473 B) Health effects of lead. Lead can cause serious health problems if  
3474 too much enters your body from drinking water or other sources.  
3475 It can cause damage to the brain and kidneys, and can interfere  
3476 with the production of red blood cells that carry oxygen to all parts  
3477 of your body. The greatest risk of lead exposure is to infants,  
3478 young children, and pregnant women. Scientists have linked the  
3479 effects of lead on the brain with lowered IQ in children. Adults  
3480 with kidney problems and high blood pressure can be affected by  
3481 low levels of lead more than healthy adults. Lead is stored in the  
3482 bones, and it can be released later in life. During pregnancy, the  
3483 child receives lead from the mother's bones, which may affect  
3484 brain development.

3485  
3486 BOARD NOTE: The supplier must use the verbatim text set forth  
3487 in this subsection (a)(1)(B).  
3488

3489 C) Sources of Lead.

- 3490  
3491 i) Explain what lead is.  
3492  
3493 ii) Explain possible sources of lead in drinking water and how  
3494 lead enters drinking water. Include information on home  
3495 and building plumbing materials and service lines that may  
3496 contain lead.  
3497  
3498 iii) Discuss other important sources of lead exposure in  
3499 addition to drinking water (e.g., paint).  
3500

3501 BOARD NOTE: The supplier must use text that provides the  
3502 information described in this subsection (a)(1)(C).  
3503

3504 D) Discuss the steps the consumer can take to reduce his or her  
3505 exposure to lead in drinking water.

- 3506  
3507 i) Encourage running the water to flush out the lead.  
3508  
3509 ii) Explain concerns with using hot water from the tap and  
3510 specifically caution against the use of hot water for  
3511 preparing baby formula.  
3512  
3513 iii) Explain that boiling water does not reduce lead levels.  
3514

3515                    iv) Discuss other options consumers can take to reduce  
3516                    exposure to lead in drinking water, such as alternative  
3517                    sources or treatment of water.

3518  
3519                    v) Suggest that parents have their child's blood tested for lead.  
3520

3521                    BOARD NOTE: The supplier must use text that provides the  
3522                    information described in this subsection (a)(1)(D).

3523  
3524                    E) Explain why there are elevated levels of lead in the supplier's  
3525                    drinking water (if known) and what the supplier is doing to reduce  
3526                    the lead levels in homes and buildings in this area.

3527  
3528                    BOARD NOTE: The supplier must use text that provides the  
3529                    information described in this subsection (a)(1)(E).

3530  
3531                    F) For more information, call us at [INSERT THE SUPPLIER'S  
3532                    NUMBER] [(IF APPLICABLE), or visit our Web site at [INSERT  
3533                    THE SUPPLIER'S WEB SITE HERE]]. For more information on  
3534                    reducing lead exposure around your home/building and the health  
3535                    effects of lead, visit USEPA's Web site at <http://www.epa.gov/lead>  
3536                    or contact your health care provider.

3537  
3538                    BOARD NOTE: The supplier must use the verbatim text set forth  
3539                    in this subsection (a)(1)(F), with the exception that the supplier  
3540                    must insert its name in place of the first segment of bracketed text,  
3541                    and it must add the second segment of bracketed text and substitute  
3542                    its Web address for the internal bracketed text.

3543  
3544                    2) ~~Community Non-transient non-community water systems. In addition to~~  
3545                    ~~including the elements A NTNCWS must either include the text specified~~  
3546                    ~~in subsection (a)(1) of this Section, or must include the text set forth in~~  
3547                    ~~Appendix F of this Part in all of the printed materials it distributes through~~  
3548                    ~~its lead public education program. A water supplier may delete~~  
3549                    ~~information pertaining to lead service lines upon approval by the Agency~~  
3550                    ~~by a SEP issued pursuant to Section 611.110 if no lead service lines exist~~  
3551                    ~~anywhere in the water system service area. Any additional information~~  
3552                    ~~presented by a supplier must be consistent with the information below and~~  
3553                    ~~be in plain English that can be understood by lay persons. a CWS supplier~~  
3554                    ~~must do both of the following:~~

3555  
3556                    A) It must tell consumers how to get their water tested; and  
3557

3558  
3559  
3560  
3561  
3562  
3563  
3564  
3565  
3566  
3567  
3568  
3569  
3570  
3571  
3572  
3573  
3574  
3575  
3576  
3577  
3578  
3579  
3580  
3581  
3582  
3583  
3584  
3585  
3586  
3587  
3588  
3589  
3590  
3591  
3592  
3593  
3594  
3595  
3596  
3597  
3598  
3599

- B) It must discuss lead in plumbing components and the difference between low-lead and lead-free components.
- 3) Agency review and approval of written public education materials.
  - A) The supplier must submit all written public education materials to the Agency for review at least 60 days prior to its planned date for delivery of the materials to the public.
  - B) If the Agency determines that the form and content of the supplier's written public education materials is adequate, it may issue a SEP pursuant to Section 611.110 that expressly approves of the materials.
  - C) A supplier may immediately distribute its written public education materials after receipt of a SEP or a revised SEP that expressly approves those materials.
  - D) If the Agency determines that the form or content of the written public education materials submitted by the supplier does not comply with the requirements of this Section, it must issue a SEP pursuant to Section 611.110. The Agency may issue a revised SEP that expressly supercedes a SEP previously issued under this subsection (a)(1). Any SEP or revised SEP issued by the Agency must identify any deficiencies in the written public education materials with specificity sufficient to guide the supplier to correct the deficiencies in a way that would address the Agency's concerns.
  - E) The Agency must issue any SEP or revised SEP under subsection (a)(3)(D) of this Section no later than 30 days after the date on which it received a copy of the supplier's prospective written public education materials, unless the Agency and the supplier have agreed to a later date pursuant to subsection (a)(3)(F) of this Section. The Agency and the supplier may agree to a longer time within which the Agency may issue a SEP or a revised SEP, in which case the Agency must issue the SEP or revised SEP before expiration of the agreed longer time.

BOARD NOTE: The Board has provided that the Agency and the supplier may agree to a longer time before the Agency issues a SEP and for the Agency to issue a revised SEP that supercedes an

3600 already-issued SEP, in order to allow for negotiation of any issues  
3601 and the quickest possible distribution of the materials.

3602  
3603 F) If the supplier has not received a SEP from the Agency within 45  
3604 days after the date on which the Agency received its written public  
3605 education materials, those materials are deemed approved, and the  
3606 supplier may immediately proceed to distribute them.

3607  
3608 G) Once the supplier has revised its written public education materials  
3609 exactly as described by the Agency in a SEP issued under  
3610 subsection (a)(3)(D) of this Section, those materials are deemed  
3611 approved, and the supplier may immediately proceed to distribute  
3612 them.

3613  
3614 BOARD NOTE: At corresponding 40 CFR 141.85(a)(1) (2007), USEPA  
3615 allowed the State to require prior approval of written public information  
3616 materials. Rather than require prior Agency approval, the Board has  
3617 chosen to require submission to the Agency for review sufficiently in  
3618 advance of distribution to allow the Agency to raise any deficiencies that it  
3619 may perceive. The Board has used the mechanism of the SEP for the  
3620 Agency to communicate its concerns, as this would allow the supplier to  
3621 petition the Board for review of the Agency's determination pursuant to  
3622 Section 611.110(c).

3623  
3624 ~~b) Content of broadcast materials. A supplier must include the following~~  
3625 ~~information in all public service announcements submitted under its lead public~~  
3626 ~~education program to television and radio stations for broadcast:~~

3627  
3628 ~~1) Why should everyone want to know the facts about lead and drinking~~  
3629 ~~water? Because unhealthy amounts of lead can enter drinking water~~  
3630 ~~through the plumbing in your home. That's why I urge you to do what I~~  
3631 ~~did. I had my water tested for (insert "free" or the cost per sample). You~~  
3632 ~~can contact the (insert the name of the city or supplier) for information on~~  
3633 ~~testing and on simple ways to reduce your exposure to lead in drinking~~  
3634 ~~water.~~

3635  
3636 ~~2) To have your water tested for lead, or to get more information about this~~  
3637 ~~public health concern, please call (insert the phone number of the city or~~  
3638 ~~supplier).~~

3639  
3640 ~~be) Delivery of a public education materials program.~~

3641  
3642 ~~1) The public education materials of a supplier that serves In communities~~

3643 where a large significant proportion of the population speaks a language  
3644 other than non-English speaking consumers, public education materials  
3645 must contain information be communicated in the appropriate languages  
3646 regarding the importance of the notice, or it must contain a telephone  
3647 number or address where a person served may contact the supplier to  
3648 obtain a translated copy of the public education materials or to request  
3649 assistance in the appropriate language.

3650  
3651 2) A CWS supplier that exceeds the lead action level on the basis of tap  
3652 water samples collected in accordance with Section 611.356 and which is  
3653 not already conducting repeating public education tasks pursuant to  
3654 subsection (e)(3), (e)(7), or (e)(8) of this Section must, within 60 days  
3655 after the end of the monitoring period in which the exceedance occurred,  
3656 do each of the following complete the public education tasks according to  
3657 the following requirements:

3658  
3659 A) The CWS supplier must deliver printed materials that meet the  
3660 content requirements of subsection (a) of this Section to all of its  
3661 bill-paying customers.

3662  
3663 B) Methods of delivery for a CWS supplier.

3664  
3665 i) The CWS supplier must contact customers who are most at  
3666 risk by delivering education materials that meet the content  
3667 requirements of subsection (a) of this Section to local  
3668 public health agencies, even if the agencies are not located  
3669 within the supplier's service area, along with an  
3670 informational notice that encourages distribution to all of  
3671 the agencies' potentially affected customers or the supplier's  
3672 users. The supplier must contact the local public health  
3673 agencies directly by phone or in person. The local public  
3674 health agencies may provide a specific list of additional  
3675 community-based organizations that serve the target  
3676 populations, which may include organizations outside the  
3677 service area of the supplier. If such lists are provided, the  
3678 supplier must deliver education materials that meet the  
3679 content requirements of subsection (a) of this Section to  
3680 each of the organizations on the provided lists.

3681  
3682 ii) The CWS supplier must contact customers who are most at  
3683 risk by delivering materials that meet the content  
3684 requirements of subsection (a) of this Section to the  
3685 organizations listed in subsections (b)(2)(H)(i) through

3686  
3687  
3688  
3689  
3690  
3691  
3692  
3693  
3694  
3695  
3696  
3697  
3698  
3699  
3700  
3701  
3702  
3703  
3704  
3705  
3706  
3707  
3708  
3709  
3710  
3711  
3712  
3713  
3714  
3715  
3716  
3717  
3718  
3719  
3720  
3721  
3722  
3723  
3724  
3725  
3726  
3727  
3728

(b)(2)(H)(vi) that are located within the supplier's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or supplier's users.

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

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

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

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

[INSERT NAME OF SUPPLIER] found high levels of lead in drinking water in some homes. Lead can cause serious

3729 health problems. For more information please call  
3730 [INSERT NAME OF SUPPLIER] [or visit (INSERT  
3731 SUPPLIER'S WEB SITE HERE)]. The message or  
3732 delivery mechanism can be modified in consultation with  
3733 the Illinois Environmental Protection Agency, Division of  
3734 Public Water Supply; specifically, the Agency may allow a  
3735 separate mailing of public education materials to customers  
3736 if the water system cannot place the information on water  
3737 bills.

3738  
3739 D) The CWS supplier must post material meeting the content  
3740 requirements of subsection (a) of this Section on the supplier's  
3741 Web site if the CWS supplier serves a population greater than  
3742 100,000.

3743  
3744 E) The CWS supplier must submit a press release to newspaper,  
3745 television, and radio stations.

3746  
3747 F) In addition to subsections (b)(2)(A) through (b)(2)(E) of this  
3748 Section, the CWS supplier must implement at least three activities  
3749 from one or more of the categories listed below. The educational  
3750 content and selection of these activities must be determined in  
3751 consultation with the Agency.

3752  
3753 i) Public Service Announcements.

3754  
3755 ii) Paid advertisements.

3756  
3757 iii) Public Area Information Displays.

3758  
3759 iv) E-mails to customers.

3760  
3761 v) Public Meetings.

3762  
3763 vi) Household Deliveries.

3764  
3765 vii) Targeted Individual Customer Contact.

3766  
3767 viii) Direct material distribution to all multi-family homes and  
3768 institutions.

3769  
3770 ix) Other methods approved by the State.  
3771



3772 G) For a CWS supplier that is required to conduct monitoring  
3773 annually or less frequently, the end of the monitoring period is  
3774 September 30 of the calendar year in which the sampling occurs,  
3775 or, if the Agency has established an alternate monitoring period, by  
3776 a SEP issued pursuant to Section 611.110, the last day of that  
3777 period.

3778  
3779 H) Organizations that the CWS supplier must contact when required  
3780 to do so pursuant to subsection (b)(2)(B)(ii) of this Section.

3781  
3782 i) Public and private schools or school boards.

3783  
3784 ii) Women, Infants and Children (WIC) and Head Start  
3785 programs.

3786  
3787 iii) Public and private hospitals and medical clinics.

3788  
3789 vi) Pediatricians.

3790  
3791 v) Family planning clinics.

3792  
3793 vi) Local welfare agencies.

3794  
3795 BOARD NOTE: This subsection (b)(2)(H) corresponds with 40  
3796 CFR 141.85(b)(2)(ii)(B)(1) through (b)(2)(ii)(B)(6) (2007), as  
3797 added at 72 Fed. Reg. 57782 (Oct. 10, 2007). The Board found it  
3798 necessary to move the text of those federal provisions to comport  
3799 with Illinois Administrative Code codification requirements  
3800 relating to allowed indent levels in rules.

3801  
3802 I) Organizations that the CWS supplier must contact when required  
3803 to do so pursuant to subsection (b)(2)(B)(iii) of this Section.

3804  
3805 i) Licensed childcare centers.

3806  
3807 ii) Public and private preschools.

3808  
3809 iii) Obstetricians, gynecologists and midwives.

3810  
3811 BOARD NOTE: This subsection (b)(2)(H) corresponds with 40  
3812 CFR 141.85(b)(2)(ii)(C)(1) through (b)(2)(ii)(C)(3) (2007), as  
3813 added at 72 Fed. Reg. 57782 (Oct. 10, 2007). The Board found it  
3814 necessary to move the text of those federal provisions to comport

with Illinois Administrative Code codification requirements relating to allowed indent levels in rules.

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

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

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

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

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

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

- 3858 action level. Such a water supplier must also include the "alert"  
3859 language specified in this subsection (c)(2)(A);  
3860  
3861 B) Submit the information required by subsection (a)(1) of this  
3862 Section to the editorial departments of the major daily and weekly  
3863 newspapers circulated throughout the community;  
3864  
3865 C) Deliver pamphlets or brochures that contain the public education  
3866 materials in paragraphs (2) and (4) of Appendix E of this Part to  
3867 facilities and organizations, including the following:  
3868  
3869 i) Public schools or local school boards;  
3870  
3871 ii) The city or county health department;  
3872  
3873 iii) Women, Infants, and Children (WIC) and Head Start  
3874 programs, whenever available;  
3875  
3876 iv) Public and private hospitals and clinics;  
3877  
3878 v) Pediatricians;  
3879  
3880 vi) Family planning clinics; and  
3881  
3882 vii) Local welfare agencies; and  
3883  
3884 D) Submit the public service announcement in subsection (b) of this  
3885 Section to at least five of the radio and television stations with the  
3886 largest audiences within the community served by the supplier.  
3887  
3888 3) A CWS supplier must repeat the tasks contained in subsections (c)(2)(A)  
3889 through (c)(2)(D) of this Section for as long as the supplier exceeds the  
3890 lead action level, at the following minimum frequency:  
3891  
3892 A) Those of subsections (c)(2)(A) through (c)(2)(C) of this Section,  
3893 every 12 months; and  
3894  
3895 B) Those of subsection (c)(2)(D) of this Section, every six months.  
3896  
3897 4) Within 60 days after the end of the monitoring period in which a  
3898 NTNCWS supplier it exceeds the lead action level (unless it already is  
3899 repeating public education tasks pursuant to subsection (b)(5)(e)(5) of this  
3900 Section), it a NTNCWS supplier must deliver the public education

3901 materials specified by subsection (a) of this Section~~contained in Appendix~~  
3902 ~~E or F of this Part, as in subsections (b)(4)(A) and (b)(4)(B) of this~~  
3903 Section, subject to the limitation set forth in subsection (b)(4)(C) of this  
3904 Section~~follows:~~

- 3905
- 3906 A) The NTNCWS supplier must post ~~Post~~-informational posters on  
3907 lead in drinking water in a public place or common area in each of  
3908 the buildings served by the supplier; and
- 3909
- 3910 B) The NTNCWS supplier must distribute ~~Distribute~~-informational  
3911 pamphlets or brochures on lead in drinking water to each person  
3912 served by the NTNCWS supplier. The Agency may, by a SEP  
3913 granted pursuant to Section 611.110, allow the system to utilize  
3914 electronic transmission in lieu of or combined with printed  
3915 materials as long as it achieves at least the same coverage.
- 3916
- 3917 C) For a NTNCWS supplier that is required to conduct monitoring  
3918 annually or less frequently, the end of the monitoring period is  
3919 September 30 of the calendar year in which the sampling occurs,  
3920 or, if the Agency has established an alternate monitoring period, by  
3921 a SEP issued pursuant to Section 611.110, the last day of that  
3922 period.

- 3923
- 3924 5) A NTNCWS supplier must repeat the tasks set forth~~contained in~~  
3925 subsection (b)(4) of this Section at least once during each calendar year  
3926 in which the supplier exceeds the lead action level. The Agency must, on  
3927 a case-by-case basis, by a SEP issued pursuant to Section 611.110, extend  
3928 the time for the supplier to complete the public education tasks set forth in  
3929 subsection (b)(2) of this Section beyond the 60-day limit if it determines  
3930 that the extended time is needed for implementation purposes; however,  
3931 the Agency must issue the SEP granting any extension prior to expiration  
3932 of the 60-day deadline.
- 3933
- 3934 6) A supplier may discontinue delivery of public education materials after it  
3935 has met the lead action level during the most recent six-month monitoring  
3936 period conducted pursuant to Section 611.356. Such a supplier must begin  
3937 public education anew in accordance with this Section if it subsequently  
3938 exceeds the lead action level during any six-month monitoring period.
- 3939
- 3940 7) A CWS supplier may apply to the Agency, in writing, to use only the text  
3941 specified in subsection (a)(1) of this Section ~~Appendix F of this Part in~~  
3942 lieu of the text in subsections (a)(1) and (a)(2) of this Section ~~Appendix E~~  
3943 ~~of this Part~~ and to perform the tasks listed in subsections (b)(4)(c)(4) and

3944  
3945  
3946  
3947  
3948  
3949  
3950  
3951  
3952  
3953  
3954  
3955  
3956  
3957  
3958  
3959  
3960  
3961  
3962  
3963  
3964  
3965  
3966  
3967  
3968  
3969  
3970  
3971  
3972  
3973  
3974  
3975  
3976  
3977  
3978  
3979  
3980  
3981  
3982  
3983  
3984  
3985  
3986

(b)(5)(e)(5) of this Section in lieu of the tasks in subsections (b)(2)(e)(2) and (b)(3)(e)(3) of this Section if the following are true:

- A) The supplier is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and
- B) The system provides water as part of the cost of services provided, and it does not separately charge for water consumption.

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

- A) With respect to the requirements of subsection (b)(2)(F) of this Section, a supplier that serves 3,300 or fewer people must implement at least one of the activities listed in that subsection.
- B) With respect to the requirements of subsection (b)(2)(B) of this Section, a supplier that serves 3,300 or fewer people may limit the distribution of the public education materials required under that subsection to facilities and organizations that it serves which are most likely to be visited regularly by pregnant women and children.
- C) With respect to the requirements of subsection (b)(2)(E) of this Section, the Agency may, by a SEP issued pursuant to Section 611.110, waive this requirement for a supplier that serves 3,300 or fewer persons, as long as the supplier distributes notices to every household that it serves.

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

- A) ~~A CWS supplier serving 3,300 or fewer people may omit the task contained in subsection (e)(2)(D) of this Section. As long as it distributes notices containing the information contained in Appendix E of this Part to every household served by the system, such a supplier may further limit its public education programs as follows:~~
  - i) ~~A supplier serving 500 or fewer people may forego the task contained in subsection (e)(2)(B) of this Section. Such a system may limit the distribution of the public education~~

3987 materials required under subsection (e)(2)(C) of this  
3988 Section to facilities and organizations served by the  
3989 supplier that are most likely to be visited regularly by  
3990 pregnant women and children, unless it is notified by the  
3991 Agency in writing that it must make a broader distribution.  
3992

3993 ii) If approved by the Agency by a SEP issued pursuant to  
3994 Section 611.110, a system serving 501 to 3,300 people may  
3995 omit the task in subsection (e)(2)(B) of this Section or limit  
3996 the distribution of the public education materials required  
3997 under subsection (e)(2)(C) of this Section to facilities and  
3998 organizations served by the system that are most likely to  
3999 be visited regularly by pregnant women and children.  
4000

4001 B) A CWS supplier serving 3,300 or fewer people that delivers public  
4002 education in accordance with subsection (e)(8)(A) of this Section  
4003 must repeat the required public education tasks at least once during  
4004 each calendar year in which the supplier exceeds the lead action  
4005 level.  
4006

4007 cd) Supplemental monitoring and notification of results. A supplier that fails to meet  
4008 the lead action level on the basis of tap samples collected in accordance with  
4009 Section 611.356 must offer to sample the tap water of any customer who requests  
4010 it. The supplier is not required to pay for collecting or analyzing the sample, nor  
4011 is the supplier required to collect and analyze the sample itself.  
4012

4013 d) Requirement for consumer notice of tap water monitoring results.  
4014

4015 1) Consumer notice requirement. A supplier must provide a notice of the  
4016 individual tap results from lead tap water monitoring carried out under the  
4017 requirements of Section 611.356 to the persons served by the water system  
4018 at the specific sampling site from which the sample was taken (e.g., the  
4019 occupants of the residence where the tap was tested).  
4020

4021 2) Timing of consumer notice. The supplier must provide the consumer  
4022 notice as soon as practical, but no later than 30 days after it learns of the  
4023 tap monitoring results.  
4024

4025 3) Content of consumer notice. The consumer notice must include the results  
4026 of lead tap water monitoring for the tap that was tested, an explanation of  
4027 the health effects of lead, steps consumers can take to reduce exposure to  
4028 lead in drinking water, and contact information for the water utility. The  
4029 notice must also provide the maximum contaminant level goal and the

4030 action level for lead and the definitions for these two terms from Section  
4031 611.883(c).

4032  
4033 4) Delivery of consumer notice. The consumer notice must be provided to  
4034 persons served at the tap that was tested, either by mail or by another  
4035 method approved by the Agency, by a SEP issued pursuant to Section  
4036 611.110. For example, upon approval by the Agency, a NTNCWS  
4037 supplier could post the results on a bulletin board in the facility to allow  
4038 users to review the information. The supplier must provide the notice to  
4039 customers at sample taps tested, including consumers who do not receive  
4040 water bills.

4041  
4042 BOARD NOTE: Derived from 40 CFR 141.85 (2007), as amended at 72 Fed. Reg.  
4043 57782 (October 10, 2007)(2002).

4044  
4045 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

4046  
4047 **Section 611.356 Tap Water Monitoring for Lead and Copper**

4048  
4049 a) SamplingSample site location.

4050  
4051 1) Selecting a pool of targeted sampling sites.

4052  
4053 A) By the applicable date for commencement of monitoring under  
4054 subsection (d)(1) of this Section, each supplier must complete a  
4055 materials evaluation of its distribution system in order to identify a  
4056 pool of targeted sampling sites that meets the requirements of this  
4057 Section.

4058  
4059 B) The pool of targeted sampling sites must be sufficiently large to  
4060 ensure that the supplier can collect the number of lead and copper  
4061 tap samples required by subsection (c) of this Section.

4062  
4063 C) The supplier must select the sites for collection of first draw  
4064 samples from this pool of targeted sampling sites.

4065  
4066 D) The supplier must not select as sampling sites any faucets that have  
4067 point-of-use or point-of-entry treatment devices designed to  
4068 remove or capable of removing inorganic contaminants.

4069  
4070 2) Materials evaluation.

4071  
4072 A) A supplier must use the information on lead, copper, and

4073 galvanized steel collected pursuant to 40 CFR 141.42(d) (special  
4074 monitoring for corrosivity characteristics) when conducting a  
4075 materials evaluation.  
4076

4077 B) When an evaluation of the information collected pursuant to 40  
4078 CFR 141.42(d) is insufficient to locate the requisite number of lead  
4079 and copper sampling sites that meet the targeting criteria in  
4080 subsection (a) of this Section, the supplier must review the  
4081 following sources of information in order to identify a sufficient  
4082 number of sampling sites:  
4083

4084 i) All plumbing codes, permits, and records in the files of the  
4085 building departments that indicate the plumbing materials  
4086 that are installed within publicly- and privately-owned  
4087 structures connected to the distribution system;  
4088

4089 ii) All inspections and records of the distribution system that  
4090 indicate the material composition of the service  
4091 connections which connect a structure to the distribution  
4092 system;  
4093

4094 iii) All existing water quality information, which includes the  
4095 results of all prior analyses of the system or individual  
4096 structures connected to the system, indicating locations that  
4097 may be particularly susceptible to high lead or copper  
4098 concentrations; and  
4099

4100 iv) The supplier must seek to collect such information where  
4101 possible in the course of its normal operations (e.g.,  
4102 checking service line materials when reading water meters  
4103 or performing maintenance activities).  
4104

4105 3) Tiers of sampling sites. Suppliers must categorize the sampling sites  
4106 within their pool according to the following tiers:  
4107

4108 A) CWS Tier 1 sampling sites. "CWS Tier 1 sampling sites" must  
4109 include the following single-family structures:  
4110

4111 i) Those that contain copper pipes with lead solder installed  
4112 after 1982 or which contain lead pipes; or  
4113

4114 ii) Those that are served by a lead service line.  
4115



4116 BOARD NOTE: Subsection (a)(3)(A) was derived from segments  
4117 of 40 CFR 141.86(a)(3) (2007)~~(2003)~~. This allows the pool of  
4118 CWS tier 1 sampling sites to consist exclusively of structures  
4119 served by lead service lines.  
4120

4121 B) CWS Tier 2 sampling sites. "CWS Tier 2 sampling sites" must  
4122 include the following buildings, including multiple-family  
4123 structures:  
4124

4125 i) Those that contain copper pipes with lead solder installed  
4126 after 1982 or contain lead pipes; or  
4127

4128 ii) Those that are served by a lead service line.  
4129

4130 BOARD NOTE: Subsection (a)(3)(B) was derived from segments  
4131 of 40 CFR 141.86(a)(4) (2007)~~(2003)~~. This allows the pool of  
4132 CWS tier 2 sampling sites to consist exclusively of structures  
4133 served by lead service lines.  
4134

4135 C) CWS Tier 3 sampling sites. "CWS Tier 3 sampling sites" must  
4136 include the following single-family structures: those that contain  
4137 copper pipes with lead solder installed before 1983.  
4138

4139 BOARD NOTE: Subsection (a)(3)(C) was derived from segments  
4140 of 40 CFR 141.86(a)(5) (2007)~~(2003)~~.  
4141

4142 D) NTNCWS Tier 1 sampling sites. "NTNCWS Tier 1 sampling  
4143 sites" must include the following buildings:  
4144

4145 i) Those that contain copper pipes with lead solder installed  
4146 after 1982 or which contain lead pipes; or  
4147

4148 ii) Those that are served by a lead service line.  
4149

4150 BOARD NOTE: Subsection (a)(3)(D) was derived from segments  
4151 of 40 CFR 141.86(a)(6) (2007)~~(2003)~~. This allows the pool of  
4152 NTNCWS tier 1 sampling sites to consist exclusively of buildings  
4153 served by lead service lines.  
4154

4155 E) Alternative NTNCWS sampling sites. "Alternative NTNCWS  
4156 sampling sites" must include the following buildings: those that  
4157 contain copper pipes with lead solder installed before 1983.  
4158

4159 BOARD NOTE: Subsection (a)(3)(E) was derived from segments  
4160 of 40 CFR 141.86(a)(7) ~~(2007)(2003)~~.

4161  
4162 4) Selection of sampling sites. Suppliers must select sampling sites for their  
4163 sampling pool as follows:

4164  
4165 A) CWS Suppliers. CWS suppliers must use CWS tier 1 sampling  
4166 sites, except that the supplier may include CWS tier 2 or CWS tier  
4167 3 sampling sites in its sampling pool as follows:

4168  
4169 i) If multiple-family residences comprise at least 20 percent  
4170 of the structures served by a supplier, the supplier may use  
4171 CWS tier 2 sampling sites in its sampling pool; or

4172  
4173 BOARD NOTE: Subsection (a)(4)(A)(i) was derived from  
4174 a segment of 40 CFR 141.86(a)(3)(ii) ~~(2007)(2003)~~.

4175  
4176 ii) If the CWS supplier has an insufficient number of CWS tier  
4177 1 sampling sites on its distribution system, the supplier may  
4178 use CWS tier 2 sampling sites in its sampling pool; or

4179  
4180 BOARD NOTE: Subsection (a)(4)(A)(ii) was derived from  
4181 a segment of 40 CFR 141.86(a)(4) ~~(2007)(2003)~~.

4182  
4183 iii) If the CWS supplier has an insufficient number of CWS tier  
4184 1 and CWS tier 2 sampling sites on its distribution system,  
4185 the supplier may complete its sampling pool with CWS tier  
4186 3 sampling sites.

4187  
4188 BOARD NOTE: Subsection (a)(4)(A)(iii) was derived  
4189 from a segment of 40 CFR 141.86(a)(5) ~~(2007)(2003)~~.

4190  
4191 iv) If the CWS supplier has an insufficient number of CWS tier  
4192 1 sampling sites, CWS tier 2 sampling sites, and CWS tier  
4193 3 sampling sites, the supplier must use those CWS tier 1  
4194 sampling sites, CWS tier 2 sampling sites, and CWS tier 3  
4195 sampling sites that it has and complete its sampling pool  
4196 with representative sites throughout its distribution system  
4197 for the balance of its sampling sites. For the purpose of this  
4198 subsection (a)(4)(A)(iv), a representative site is a site in  
4199 which the plumbing materials used at that site would be  
4200 commonly found at other sites served by the water system.  
4201

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

B) NTNCWS suppliers.

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

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

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

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

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

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

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

- i) 50 percent of the samples from sampling sites that contain lead pipes or from sampling sites that have copper pipes with lead solder; and
- ii) 50 percent of those samples from sites served by a lead service line.
- iii) A supplier that cannot identify a sufficient number of sampling sites served by a lead service line must collect

4245 first-draw samples from all of the sites identified as being  
4246 served by such lines.  
4247

4248 BOARD NOTE: Subsection (a)(4)(C) was derived from segments  
4249 of 40 CFR 141.86(a)(8) (2007)~~(2003)~~. This allows the pool of  
4250 sampling sites to consist exclusively of structures or buildings  
4251 served by lead service lines.  
4252

4253 b) Sample collection methods.  
4254

4255 1) All tap samples for lead and copper collected in accordance with this  
4256 Subpart G, with the exception of lead service line samples collected under  
4257 Section 611.354(c) and samples collected under subsection (b)(5) of this  
4258 Section, must be first-draw samples.  
4259

4260 2) First-draw tap samples.  
4261

4262 A) Each first-draw tap sample for lead and copper must be one liter in  
4263 volume and have stood motionless in the plumbing system of each  
4264 sampling site for at least six hours.  
4265

4266 B) First-draw samples from residential housing must be collected  
4267 from the cold water kitchen tap or bathroom sink tap.  
4268

4269 C) First-draw samples from a non-residential building must be one  
4270 liter in volume and must be collected at an interior tap from which  
4271 water is typically drawn for consumption.  
4272

4273 D) Non-first-draw samples collected in lieu of first-draw samples  
4274 pursuant to subsection (b)(5) of this Section must be one liter in  
4275 volume and must be collected at an interior tap from which water  
4276 is typically drawn for consumption.  
4277

4278 E) First-draw samples may be collected by the supplier or the supplier  
4279 may allow residents to collect first-draw samples after instructing  
4280 the residents of the sampling procedures specified in this  
4281 subsection (b).  
4282

4283 i) To avoid problems of residents handling nitric acid,  
4284 acidification of first-draw samples may be done up to 14  
4285 days after the sample is collected.  
4286

4287 ii) After acidification to resolubilize the metals, the sample

4288 must stand in the original container for the time specified in  
4289 the approved USEPA method before the sample can be  
4290 analyzed.

4291  
4292 F) If a supplier allows residents to perform sampling under subsection  
4293 (b)(2)(D) of this Section, the supplier may not challenge the  
4294 accuracy of sampling results based on alleged errors in sample  
4295 collection.

4296  
4297 3) Service line samples.

4298  
4299 A) Each service line sample must be one liter in volume and have  
4300 stood motionless in the lead service line for at least six hours.

4301  
4302 B) Lead service line samples must be collected in one of the following  
4303 three ways:

4304  
4305 i) At the tap after flushing that volume of water calculated as  
4306 being between the tap and the lead service line based on the  
4307 interior diameter and length of the pipe between the tap and  
4308 the lead service line;

4309  
4310 ii) Tapping directly into the lead service line; or

4311  
4312 iii) If the sampling site is a single-family structure, allowing  
4313 the water to run until there is a significant change in  
4314 temperature that would be indicative of water that has been  
4315 standing in the lead service line.

4316  
4317 4) Follow-up first-draw tap samples.

4318  
4319 A) A supplier must collect each follow-up first-draw tap sample from  
4320 the same sampling site from which it collected the previous  
4321 samples.

4322  
4323 B) If, for any reason, the supplier cannot gain entry to a sampling site  
4324 in order to collect a follow-up tap sample, the supplier may collect  
4325 the follow-up tap sample from another sampling site in its  
4326 sampling pool, as long as the new site meets the same targeting  
4327 criteria and is within reasonable proximity of the original site.

4328  
4329 5) Substitute non-first-draw samples.

4330

- 4331 A) A NTNCWS supplier or a CWS supplier that meets the criteria of  
4332 Sections 611.355(be)(7)(A) and (be)(7)(B), that does not have  
4333 enough taps that can supply first-draw samples, as defined in  
4334 Section 611.102, may apply to the Agency in writing to substitute  
4335 non-first-draw samples by a SEP granted under Section 611.110.  
4336
- 4337 B) A supplier approved to substitute non-first-draw samples must  
4338 collect as many first-draw samples from appropriate taps as  
4339 possible and identify sampling times and locations that would  
4340 likely result in the longest standing time for the remaining sites.  
4341
- 4342 C) The Agency may grant a SEP that waives the requirement for prior  
4343 Agency approval of non-first-draw samplingsample sites selected  
4344 by the system.  
4345
- 4346 c) Number of samples.
- 4347
- 4348 1) Suppliers must collect at least one sample from the number of sites listed  
4349 in the first column of Table D of this Part (labelled "standard monitoring")  
4350 during each six-month monitoring period specified in subsection (d) of  
4351 this Section.  
4352
- 4353 2) A supplier conducting reduced monitoring pursuant to subsection (d)(4) of  
4354 this Section must collect one sample from the number of sites specified in  
4355 the second column of Table D of this Part (labelled "reduced monitoring")  
4356 during each reduced monitoring period specified in subsection (d)(4) of  
4357 this Section. Such reduced monitoring sites must be representative of the  
4358 sites required for standard monitoring. A supplier whose system has fewer  
4359 than five drinking water taps that can be used for human consumption and  
4360 which can meet the sampling site criteria of subsection (a) of this Section  
4361 to reach the required number of sampling sites listed in this subsection (c)  
4362 must collect multiple samples from individual taps. To accomplish this,  
4363 the supplier must collect at least one sample from each tap, then it must  
4364 collect additional samples from those same taps on different days during  
4365 the monitoring period, in order to collect a total number of samples that  
4366 meets the required number of sampling sites. Alternatively, the Agency  
4367 must, by a SEP issued pursuant to Section 611.110, allow a supplier  
4368 whose system has fewer than five drinking water taps to collect a number  
4369 of samples that is fewer than the number of sites specified in this  
4370 subsection (c) if it determines that 100 percent of all taps that can be used  
4371 for human consumption are sampled and that the reduced number of  
4372 samples will produce the same results as would the collection of multiple  
4373 samples from some taps. Any Agency approval of a reduction of the

4374 minimum number of samples must be based on a request from the supplier  
4375 or on on-site verification by the Agency. The Agency may, by a SEP  
4376 issued pursuant to Section 611.110, specify sampling locations when a  
4377 system is conducting reduced monitoring.  
4378

4379 d) Timing of monitoring.

4380  
4381 1) Initial tap sampling.

4382  
4383 The first six-month monitoring period for small, medium-sized and large  
4384 system suppliers must begin on the dates specified in Table E of this Part.  
4385

4386 A) All large system suppliers must monitor during each of two  
4387 consecutive six-month periods.  
4388

4389 B) All small- and medium-sized system suppliers must monitor during  
4390 each consecutive six-month monitoring period until the following  
4391 is true:  
4392

4393 i) The supplier exceeds the lead action level or the copper  
4394 action level and is therefore required to implement the  
4395 corrosion control treatment requirements under Section  
4396 611.351, in which case the supplier must continue  
4397 monitoring in accordance with subsection (d)(2) of this  
4398 Section; or  
4399

4400 ii) The supplier meets the lead action level and the copper  
4401 action level during each of two consecutive six-month  
4402 monitoring periods, in which case the supplier may reduce  
4403 monitoring in accordance with subsection (d)(4) of this  
4404 Section.  
4405

4406 2) Monitoring after installation of corrosion control and source water  
4407 treatment.  
4408

4409 A) Any large system supplier that installs optimal corrosion control  
4410 treatment pursuant to Section 611.351(d)(4) must have monitored  
4411 during each of two consecutive six-month monitoring periods  
4412 before January 1, 1998.  
4413

4414 B) Any small- or medium-sized system supplier that installs optimal  
4415 corrosion control treatment pursuant to Section 611.351(e)(5) must  
4416 monitor during each of two consecutive six-month monitoring

- 4417 periods before 36 months after the Agency approves optimal  
4418 corrosion control treatment, as specified in Section 611.351(e)(6).  
4419
- 4420 C) Any supplier that installs source water treatment pursuant to  
4421 Section 611.353(a)(3) must monitor during each of two  
4422 consecutive six-month monitoring periods before 36 months after  
4423 completion of step 2, as specified in Section 611.353(a)(4).  
4424
- 4425 3) Monitoring after the Agency specification of water quality parameter  
4426 values for optimal corrosion control.  
4427 After the Agency specifies the values for water quality control parameters  
4428 pursuant to Section 611.352(f), the supplier must monitor during each  
4429 subsequent six-month monitoring period, with the first six-month  
4430 monitoring period to begin on the date the Agency specifies the optimal  
4431 values.  
4432
- 4433 4) Reduced monitoring.  
4434
- 4435 A) Reduction to annual for small- and medium-sized system suppliers  
4436 meeting the lead and copper action levels. A small- or medium-  
4437 sized system supplier that meets the lead and copper action levels  
4438 during each of two consecutive six-month monitoring periods may  
4439 reduce the number of samples in accordance with subsection (c) of  
4440 this Section, and reduce the frequency of sampling to once per  
4441 year. A small- or medium-sized system supplier that collects  
4442 fewer than five samples as specified in subsection (c) of this  
4443 Section and which meets the lead and copper action levels during  
4444 each of two consecutive six-month monitoring periods may reduce  
4445 its frequency of sampling to once per year. In no case can the  
4446 supplier reduce the number of samples required below the  
4447 minimum of one sample per available tap. This reduced sampling  
4448 may only begin during the calendar year immediately following  
4449 the end of the second consecutive six-month monitoring period.  
4450
- 4451 B) SEP allowing reduction to annual for suppliers maintaining water  
4452 quality control parameters.  
4453
- 4454 i) Any supplier that meets the lead action level and which  
4455 maintains the range of values for the water quality control  
4456 parameters reflecting optimal corrosion control treatment  
4457 specified by the Agency under Section 611.352(f) during  
4458 each of two consecutive six-month monitoring periods may  
4459 reduce the frequency of monitoring to once per year and the



- 4460 number of lead and copper samples to that specified by  
4461 subsection (c) of this Section if it receives written approval  
4462 from the Agency in the form of a SEP granted pursuant to  
4463 Section 611.110. This reduced sampling may only begin  
4464 during the calendar year immediately following the end of  
4465 the second consecutive six-month monitoring period.  
4466  
4467 ii) The Agency must review monitoring, treatment, and other  
4468 relevant information submitted by the water system in  
4469 accordance with Section 611.360, and must notify the  
4470 system in writing by a SEP granted pursuant to Sections  
4471 611.110 when it determines the system is eligible to reduce  
4472 its monitoring frequency to once every three years pursuant  
4473 to this subsection (d)(4).  
4474  
4475 iii) The Agency must review, and where appropriate, revise its  
4476 determination under subsection (d)(4)(B)(i) of this Section  
4477 when the supplier submits new monitoring or treatment  
4478 data, or when other data relevant to the number and  
4479 frequency of tap sampling becomes available to the  
4480 Agency.  
4481  
4482 C) Reduction to triennial for small- and medium-sized system  
4483 suppliers.  
4484  
4485 i) Small- and medium-sized system suppliers meeting lead  
4486 and copper action levels. A small- or medium-sized system  
4487 supplier that meets the lead action level and which meets  
4488 the lead and copper action levels during three consecutive  
4489 years of monitoring may reduce the frequency of  
4490 monitoring for lead and copper from annually to once every  
4491 three years.  
4492  
4493 ii) SEP for suppliers meeting optimal corrosion control  
4494 treatment. Any supplier that maintains the range of values  
4495 for the water quality control parameters reflecting optimal  
4496 corrosion control treatment specified by the Agency under  
4497 Section 611.352(f) during three consecutive years of  
4498 monitoring may reduce its monitoring frequency from  
4499 annual to once every three years if it receives written  
4500 approval from the Agency in the form of a SEP granted  
4501 pursuant to Section 611.110. Samples collected once every  
4502 three years must be collected no later than every third

calendar year.

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

D) Sampling at a reduced frequency. A supplier that reduces the number and frequency of sampling must collect these samples from representative sites included in the pool of targeted sampling sites identified in subsection (a) of this Section, preferentially selecting those sampling sites from the highest tier first. Suppliers sampling annually or less frequently must conduct the lead and copper tap sampling during the months of June, July, August, or September, unless the Agency has approved a different sampling period in accordance with subsection (d)(4)(D)(i) of this Section.

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

ii) A supplier monitoring annually that has been collecting samples during the months of June through September and which receives Agency approval to alter its sample collection period under subsection (d)(4)(D)(i) of this

4546 Section must collect its next round of samples during a time  
 4547 period that ends no later than 21 months after the previous  
 4548 round of sampling. A supplier monitoring once every three  
 4549 years that has been collecting samples during the months of  
 4550 June through September and which receives Agency  
 4551 approval to alter the sampling collection period as provided  
 4552 in subsection (d)(4)(D)(i) of this Section must collect its  
 4553 next round of samples during a time period that ends no  
 4554 later than 45 months after the previous round of sampling.  
 4555 Subsequent rounds of sampling must be collected annually  
 4556 or once every three years, as required by this Section. A  
 4557 small system supplier with a waiver granted pursuant to  
 4558 subsection (g) of this Section that has been collecting  
 4559 samples during the months of June through September and  
 4560 which receives Agency approval to alter its sample  
 4561 collection period under subsection (d)(4)(D)(i) of this  
 4562 Section must collect its next round of samples before the  
 4563 end of the nine-year compliance cycle (as that term is  
 4564 defined in Section 611.101).  
 4565

4566 E) Any water system that demonstrates for two consecutive six-month  
 4567 monitoring periods that the tap water lead level computed under  
 4568 Section 611.350(c)(3) is less than or equal to 0.005 mg/l and that  
 4569 the tap water copper level computed under Section 611.350(c)(3) is  
 4570 less than or equal to 0.65 mg/l may reduce the number of samples  
 4571 in accordance with subsection (c) of this Section and reduce the  
 4572 frequency of sampling to once every three calendar years.  
 4573

4574 F) Resumption of standard monitoring.  
 4575  
 4576 i) Small- or medium-sized suppliers exceeding lead or copper  
 4577 action level. A small- or medium-sized system supplier  
 4578 subject to reduced monitoring that exceeds the lead action  
 4579 level or the copper action level must resume sampling in  
 4580 accordance subsection (d)(3) of this Section and collect the  
 4581 number of samples specified for standard monitoring under  
 4582 subsection (c) of this Section. Such a supplier must also  
 4583 conduct water quality parameter monitoring in accordance  
 4584 with Section 611.357(b), (c), or (d) (as appropriate) during  
 4585 the six-month monitoring period in which it exceeded the  
 4586 action level. Any such supplier may resume annual  
 4587 monitoring for lead and copper at the tap at the reduced  
 4588 number of sites specified in subsection (c) of this Section

4589 after it has completed two subsequent consecutive six-  
 4590 month rounds of monitoring that meet the criteria of  
 4591 subsection (d)(4)(A) of this Section. Any such supplier  
 4592 may resume monitoring once every three years for lead and  
 4593 copper at the reduced number of sites after it demonstrates  
 4594 through subsequent rounds of monitoring that it meets the  
 4595 criteria of either subsection (d)(4)(C) or (d)(4)(E) of this  
 4596 Section.

- 4598 ii) Suppliers failing to operate within water quality control  
 4599 parameters. Any supplier subject to reduced monitoring  
 4600 frequency that fails to meet the lead action level during any  
 4601 four-month monitoring period or that fails to operate within  
 4602 the range of values for the water quality control parameters  
 4603 specified pursuant to Section 611.352(f) for more than nine  
 4604 days in any six-month period specified in Section  
 4605 611.357(d) must conduct tap water sampling for lead and  
 4606 copper at the frequency specified in subsection (d)(3) of  
 4607 this Section, must collect the number of samples specified  
 4608 for standard monitoring under subsection (c) of this  
 4609 Section, and must resume monitoring for water quality  
 4610 parameters within the distribution system in accordance  
 4611 with Section 611.357(d). This standard tap water sampling  
 4612 must begin no later than the six-month period beginning  
 4613 January 1 of the calendar year following the lead action  
 4614 level exceedance or water quality parameter excursion. A  
 4615 supplier may resume reduced monitoring for lead and  
 4616 copper at the tap and for water quality parameters within  
 4617 the distribution system only if it fulfills the conditions set  
 4618 forth in subsection (d)(4)(H) of this Section.

4619  
 4620 BOARD NOTE: The Board moved the material from the last  
 4621 sentence of 40 CFR 141.86(d)(4)(vi)(B) and 40 CFR  
 4622 141.86(d)(4)(vi)(B)(I) through (d)(4)(vi)(B)(3) (2007) to  
 4623 subsections (d)(4)(H) and (d)(4)(H)(i) through (d)(4)(H)(iii), since  
 4624 Illinois Administrative Code codification requirements allow  
 4625 subsections only to four indent levels.

- 4626  
 4627 G) Any water supplier subject to a reduced monitoring frequency  
 4628 under subsection (d)(4) of this Section ~~that either adds a new~~  
 4629 ~~source of water or changes any water treatment must notify inform~~  
 4630 the Agency in writing in accordance with Section 611.360(a)(3) of  
 4631 any upcoming long-term change in treatment or addition of a new

4632 source as described in that Section. The Agency must review and  
 4633 approve the addition of a new source or long-term change in water  
 4634 treatment before it is implemented by the supplier. The Agency  
 4635 may, by a SEP granted pursuant to Section 611.110, require the  
 4636 system to resume sampling in accordance with subsection (d)(3) of  
 4637 this Section and collect the number of samples specified for  
 4638 standard monitoring under subsection (c) of this Section or take  
 4639 other appropriate steps such as increased water quality parameter  
 4640 monitoring or re-evaluation of its corrosion control treatment given  
 4641 the potentially different water quality considerations.  
 4642

- 4643 H) A supplier required under subsection (d)(4)(F) of this Section to  
 4644 resume monitoring in accordance with Section 611.357(d) may  
 4645 resume reduced monitoring for lead and copper at the tap and for  
 4646 water quality parameters within the distribution system under the  
 4647 following conditions:  
 4648
- 4649 i) The supplier may resume annual monitoring for lead and  
 4650 copper at the tap at the reduced number of sites specified in  
 4651 subsection (c) of this Section after it has completed two  
 4652 subsequent six-month rounds of monitoring that meet the  
 4653 criteria of subsection (d)(4)(B) of this Section and the  
 4654 supplier has received written approval from the Agency by  
 4655 a SEP pursuant to Section 611.110 that it is appropriate to  
 4656 resume reduced monitoring on an annual frequency. This  
 4657 sampling must begin during the calendar year immediately  
 4658 following the end of the second consecutive six-month  
 4659 monitoring period.  
 4660
  - 4661 ii) The supplier may resume monitoring for lead and copper  
 4662 once every three years at the tap at the reduced number of  
 4663 sites after it demonstrates through subsequent rounds of  
 4664 monitoring that it meets the criteria of either subsection  
 4665 (d)(4)(C) or (d)(4)(E) of this Section and the system has  
 4666 received a SEP under Section 611.110 from the Agency  
 4667 that it is appropriate to resume monitoring once every three  
 4668 years.  
 4669
  - 4670 iii) The supplier may reduce the number of water quality  
 4671 parameter tap water samples required in accordance with  
 4672 Section 611.357(e)(1) and the frequency with which it  
 4673 collects such samples in accordance with Section  
 4674 611.357(e)(2). Such a system may not resume monitoring

once every three years for water quality parameters at the tap until it demonstrates, in accordance with the requirements of Section 611.357(e)(2), that it has re-qualified for monitoring once every three years.

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

- e) Additional monitoring. The results of any monitoring conducted in addition to the minimum requirements of this Section must be considered by the supplier and the Agency in making any determinations (i.e., calculating the 90<sup>th</sup> percentile lead action level or the copper level) under this Subpart G.
- f) Invalidation of lead or copper tap water samples. A sample invalidated under this subsection does not count toward determining lead or copper 90<sup>th</sup> percentile levels under Section 611.350(c)(3) or toward meeting the minimum monitoring requirements of subsection (c) of this Section.
  - 1) The Agency must invalidate a lead or copper tap water sample if it determines that one of the following conditions exists:
    - A) The laboratory establishes that improper sample analysis caused erroneous results;
    - B) The sample was taken from a site that did not meet the site selection criteria of this Section;
    - C) The sample container was damaged in transit; or
    - D) There is substantial reason to believe that the sample was subject to tampering.
  - 2) The supplier must report the results of all samples to the Agency and all supporting documentation for samples the supplier believes should be invalidated.
  - 3) To invalidate a sample under subsection (f)(1) of this Section, the decision and the rationale for the decision must be documented in writing. The Agency may not invalidate a sample solely on the grounds that a follow-

- 4718 up sample result is higher or lower than that of the original sample.  
4719  
4720 4) The water supplier must collect replacement samples for any samples  
4721 invalidated under this Section if, after the invalidation of one or more  
4722 samples, the supplier has too few samples to meet the minimum  
4723 requirements of subsection (c) of this Section. Any such replacement  
4724 samples must be taken as soon as possible, but no later than 20 days after  
4725 the date the Agency invalidates the sample or by the end of the applicable  
4726 monitoring period, whichever occurs later. Replacement samples taken  
4727 after the end of the applicable monitoring period must not also be used to  
4728 meet the monitoring requirements of a subsequent monitoring period. The  
4729 replacement samples must be taken at the same locations as the  
4730 invalidated samples or, if that is not possible, at locations other than those  
4731 already used for sampling during the monitoring period.  
4732  
4733 g) Monitoring waivers for small system suppliers. Any small system supplier that  
4734 meets the criteria of this subsection (g) may apply to the Agency to reduce the  
4735 frequency of monitoring for lead and copper under this Section to once every nine  
4736 years (i.e., a "full waiver") if it meets all of the materials criteria specified in  
4737 subsection (g)(1) of this Section and all of the monitoring criteria specified in  
4738 subsection (g)(2) of this Section. Any small system supplier that meets the  
4739 criteria in subsections (g)(1) and (g)(2) of this Section only for lead, or only for  
4740 copper, may apply to the State for a waiver to reduce the frequency of tap water  
4741 monitoring to once every nine years for that contaminant only (i.e., a "partial  
4742 waiver").  
4743  
4744 1) Materials criteria. The supplier must demonstrate that its distribution  
4745 system and service lines and all drinking water supply plumbing,  
4746 including plumbing conveying drinking water within all residences and  
4747 buildings connected to the system, are free of lead-containing materials or  
4748 copper-containing materials, as those terms are defined in this subsection  
4749 (g)(1), as follows:  
4750  
4751 A) Lead. To qualify for a full waiver, or a waiver of the tap water  
4752 monitoring requirements for lead (i.e., a "lead waiver"), the water  
4753 supplier must provide certification and supporting documentation  
4754 to the Agency that the system is free of all lead-containing  
4755 materials, as follows:  
4756  
4757 i) It contains no plastic pipes that contain lead plasticizers, or  
4758 plastic service lines that contain lead plasticizers; and  
4759  
4760 ii) It is free of lead service lines, lead pipes, lead soldered pipe

4761 joints, and leaded brass or bronze alloy fittings and fixtures,  
4762 unless such fittings and fixtures meet the specifications of  
4763 NSF Standard 61, section 9, incorporated by reference in  
4764 Section 611.102.

4765  
4766 BOARD NOTE: Corresponding 40 CFR  
4767 141.86(g)(1)(i)(B) specifies "any standard established  
4768 pursuant to 42 USC 300g-6(e) (SDWA section 1417(e))."  
4769 USEPA has stated that the NSF standard is that standard.  
4770 See 62 Fed. Reg. 44684 (Aug. 22, 1997).

- 4771  
4772 B) Copper. To qualify for a full waiver, or a waiver of the tap water  
4773 monitoring requirements for copper (i.e., a "copper waiver"), the  
4774 water supplier must provide certification and supporting  
4775 documentation to the Agency that the system contains no copper  
4776 pipes or copper service lines.  
4777
- 4778 2) Monitoring criteria for waiver issuance. The supplier must have completed  
4779 at least one six-month round of standard tap water monitoring for lead and  
4780 copper at sites approved by the Agency and from the number of sites  
4781 required by subsection (c) of this Section and demonstrate that the 90<sup>th</sup>  
4782 percentile levels for any and all rounds of monitoring conducted since the  
4783 system became free of all lead-containing or copper-containing materials,  
4784 as appropriate, meet the following criteria:  
4785
- 4786 A) Lead levels. To qualify for a full waiver, or a lead waiver, the  
4787 supplier must demonstrate that the 90<sup>th</sup> percentile lead level does  
4788 not exceed 0.005 mg/l.  
4789
- 4790 B) Copper levels. To qualify for a full waiver, or a copper waiver, the  
4791 supplier must demonstrate that the 90<sup>th</sup> percentile copper level does  
4792 not exceed 0.65 mg/l.  
4793
- 4794 3) State approval of waiver application. The Agency must notify the supplier  
4795 of its waiver determination by a SEP issued pursuant to Section 611.110,  
4796 in writing, setting forth the basis of its decision and any condition of the  
4797 waiver. As a condition of the waiver, the Agency may require the supplier  
4798 to perform specific activities (e.g., limited monitoring, periodic outreach  
4799 to customers to remind them to avoid installation of materials that might  
4800 void the waiver) to avoid the risk of lead or copper concentration of  
4801 concern in tap water. The small system supplier must continue monitoring  
4802 for lead and copper at the tap as required by subsections (d)(1) through  
4803 (d)(4) of this Section, as appropriate, until it receives written notification



4804  
4805  
4806  
4807  
4808  
4809  
4810  
4811  
4812  
4813  
4814  
4815  
4816  
4817  
4818  
4819  
4820  
4821  
4822  
4823  
4824  
4825  
4826  
4827  
4828  
4829  
4830  
4831  
4832  
4833  
4834  
4835  
4836  
4837  
4838  
4839  
4840  
4841  
4842  
4843  
4844  
4845  
4846

from the Agency that the waiver has been approved.

- 4) Monitoring frequency for suppliers with waivers.
  - A) A supplier with a full waiver must conduct tap water monitoring for lead and copper in accordance with subsection (d)(4)(D) of this Section at the reduced number of sampling sites identified in subsection (c) of this Section at least once every nine years and provide the materials certification specified in subsection (g)(1) of this Section for both lead and copper to the Agency along with the monitoring results. Samples collected every nine years must be collected no later than every ninth calendar year.
  - B) A supplier with a partial waiver must conduct tap water monitoring for the waived contaminant in accordance with subsection (d)(4)(D) of this Section at the reduced number of sampling sites specified in subsection (c) of this Section at least once every nine years and provide the materials certification specified in subsection (g)(1) of this Section pertaining to the waived contaminant along with the monitoring results. Such a supplier also must continue to monitor for the non-waived contaminant in accordance with requirements of subsections (d)(1) through (d)(4) of this Section, as appropriate.
  - C) ~~Any~~If a supplier with a full or partial waiver adds a new source of water or changes any water treatment, the supplier must notify the Agency in writing in accordance with Section 611.360(a)(3) of any upcoming long-term change in treatment or addition of a new source, as described in that Section. The Agency must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the supplier. The Agency has the authority to require the supplier to add or modify waiver conditions (e.g., require recertification that the supplier's system is free of lead-containing or copper-containing materials, require additional rounds of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.
  - D) If a supplier with a full or partial waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate (e.g., as a result of new construction or repairs), the supplier must notify the Agency in writing no later than 60 days after becoming aware of such a change.

- 4847  
4848  
4849  
4850  
4851  
4852  
4853  
4854  
4855  
4856  
4857  
4858  
4859  
4860  
4861  
4862  
4863  
4864  
4865  
4866  
4867  
4868  
4869  
4870  
4871  
4872  
4873  
4874  
4875  
4876  
4877  
4878  
4879  
4880  
4881  
4882  
4883  
4884  
4885  
4886  
4887  
4888  
4889
- 5) Continued eligibility. If the supplier continues to satisfy the requirements of subsection (g)(4) of this Section, the waiver will be renewed automatically, unless any of the conditions listed in subsection (g)(5)(A) through (g)(5)(C) of this Section occur. A supplier whose waiver has been revoked may re-apply for a waiver at such time as it again meets the appropriate materials and monitoring criteria of subsections (g)(1) and (g)(2) of this Section.
- A) A supplier with a full waiver or a lead waiver no longer satisfies the materials criteria of subsection (g)(1)(A) of this Section or has a 90<sup>th</sup> percentile lead level greater than 0.005 mg/ℓ.
- B) A supplier with a full waiver or a copper waiver no longer satisfies the materials criteria of subsection (g)(1)(B) of this Section or has a 90<sup>th</sup> percentile copper level greater than 0.65 mg/ℓ.
- C) The State notifies the supplier, in writing, that the waiver has been revoked, setting forth the basis of its decision.
- 6) Requirements following waiver revocation. A supplier whose full or partial waiver has been revoked by the Agency is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:
- A) If the supplier exceeds the lead or copper action level, the supplier must implement corrosion control treatment in accordance with the deadlines specified in Section 611.351(e), and any other applicable requirements of this Subpart G.
- B) If the supplier meets both the lead and the copper action level, the supplier must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of samplingsample sites specified in subsection (c) of this Section.
- 7) Pre-existing waivers. Small system supplier waivers approved by the Agency in writing prior to April 11, 2000 must remain in effect under the following conditions:
- A) If the supplier has demonstrated that it is both free of lead-containing and copper-containing materials, as required by subsection (g)(1) of this Section and that its 90<sup>th</sup> percentile lead levels and 90th percentile copper levels meet the criteria of

4890 subsection (g)(2) of this Section, the waiver remains in effect so  
 4891 long as the supplier continues to meet the waiver eligibility criteria  
 4892 of subsection (g)(5) of this Section. The first round of tap water  
 4893 monitoring conducted pursuant to subsection (g)(4) of this Section  
 4894 must be completed no later than nine years after the last time the  
 4895 supplier monitored for lead and copper at the tap.  
 4896

- 4897 B) If the supplier has met the materials criteria of subsection (g)(1) of  
 4898 this Section but has not met the monitoring criteria of subsection  
 4899 (g)(2) of this Section, the supplier must conduct a round of  
 4900 monitoring for lead and copper at the tap demonstrating that it met  
 4901 the criteria of subsection (g)(2) of this Section no later than  
 4902 September 30, 2000. Thereafter, the waiver must remain in effect  
 4903 as long as the supplier meets the continued eligibility criteria of  
 4904 subsection (g)(5) of this Section. The first round of tap water  
 4905 monitoring conducted pursuant to subsection (g)(4) of this Section  
 4906 must be completed no later than nine years after the round of  
 4907 monitoring conducted pursuant to subsection (g)(2) of this Section.  
 4908

4909 BOARD NOTE: Derived from 40 CFR 141.86 (2007), as amended at 72 Fed. Reg.  
 4910 57782 (October 10, 2007)(2003).

4911 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)  
 4912  
 4913

4914 **Section 611.357 Monitoring for Water Quality Parameters**  
 4915

4916 All large system suppliers, and all small- and medium-sized system suppliers that exceed the  
 4917 lead action level or the copper action level, must monitor water quality parameters in addition to  
 4918 lead and copper in accordance with this Section. The requirements of this Section are  
 4919 summarized in Table G of this Part.  
 4920

- 4921 a) General Requirements.  
 4922

- 4923 1) Sample collection methods.  
 4924

- 4925 A) Use of tap samples. The totality of all tap samples collected by a  
 4926 supplier must be representative of water quality throughout the  
 4927 distribution system taking into account the number of persons  
 4928 served, the different sources of water, the different treatment  
 4929 methods employed by the supplier, and seasonal variability.  
 4930 Although a supplier may conveniently conduct tap sampling for  
 4931 water quality parameters at sites used for coliform sampling  
 4932 performed pursuant to Subpart L of this Part, it is not required to

do so, and a supplier is not required to perform tap sampling pursuant to this Section at taps targeted for lead and copper sampling under Section 611.356(a).

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

2) Number of samples.

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

B) Entry point samples.

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

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

b) Initial Sampling.

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

- 4976  
4977  
4978  
4979  
4980  
4981  
4982  
4983  
4984  
4985  
4986  
4987  
4988  
4989  
4990  
4991  
4992  
4993  
4994  
4995  
4996  
4997  
4998  
4999  
5000  
5001  
5002  
5003  
5004  
5005  
5006  
5007  
5008  
5009  
5010  
5011  
5012  
5013  
5014  
5015  
5016  
5017  
5018
- 2) Small- and medium-sized systems. Each small- and medium-sized system supplier must measure the applicable water quality parameters specified in subsection (b)(3) of this Section at the locations specified in this subsection during each six-month monitoring period specified in Section 611.356(d)(1) during which the supplier exceeds the lead action level or the copper action level.
  - 3) Water quality parameters.
    - A) pH;
    - B) Alkalinity;
    - C) Orthophosphate, when an inhibitor containing a phosphate compound is used;
    - D) Silica, when an inhibitor containing a silicate compound is used;
    - E) Calcium;
    - F) Conductivity; and
    - G) Water temperature.
  - c) Monitoring after installation of corrosion control.
    - 1) Large systems. Each large system supplier that installs optimal corrosion control treatment pursuant to Section 611.351(d)(4) must measure the water quality parameters at the locations and frequencies specified in subsections (c)(4) and (c)(5) of this Section during each six-month monitoring period specified in Section 611.356(d)(2)(A).
    - 2) Small- and medium-sized systems. Each small- or medium-sized system that installs optimal corrosion control treatment pursuant to Section 611.351(e)(5) must measure the water quality parameters at the locations and frequencies specified in subsections (c)(4) and (c)(5) of this Section during each six-month monitoring period specified in Section 611.356(d)(2)(B) in which the supplier exceeds the lead action level or the copper action level.
    - 3) Any groundwater system can limit entry point sampling described in subsection (c)(2) of this Section to those entry points that are representative of water quality and treatment conditions throughout the

5019 system. If water from untreated groundwater sources mixes with water  
 5020 from treated groundwater sources, the system must monitor for water  
 5021 quality parameters both at representative entry points receiving treatment  
 5022 and representative entry points receiving no treatment. Prior to the start of  
 5023 any monitoring under this subsection, the system must provide to the  
 5024 Agency written information identifying the selected entry points and  
 5025 documentation, including information on seasonal variability, sufficient to  
 5026 demonstrate that the sites are representative of water quality and treatment  
 5027 conditions throughout the system.  
 5028

4) Tap water samples, two samples at each tap for each of the following  
 5030 water quality parameters:

- 5032 A) pH;
- 5033
- 5034 B) Alkalinity;
- 5035
- 5036 C) Orthophosphate, when an inhibitor containing a phosphate  
 5037 compound is used;
- 5038
- 5039 D) Silica, when an inhibitor containing a silicate compound is used;  
 5040 and
- 5041
- 5042 E) Calcium, when calcium carbonate stabilization is used as part of  
 5043 corrosion control.  
 5044

5) Entry point samples, except as provided in subsection (c)(3) of this  
 5046 Section, one sample at each entry point to the distribution system every  
 5047 two weeks (bi-weekly) for each of the following water quality parameters:

- 5049 A) pH;
- 5050
- 5051 B) When alkalinity is adjusted as part of optimal corrosion control, a  
 5052 reading of the dosage rate of the chemical used to adjust alkalinity,  
 5053 and the alkalinity concentration; and
- 5054
- 5055 C) When a corrosion inhibitor is used as part of optimal corrosion  
 5056 control, a reading of the dosage rate of the inhibitor used, and the  
 5057 concentration of orthophosphate or silica (whichever is applicable).  
 5058

d) Monitoring after the Agency specifies water quality parameter values for optimal  
 5059 corrosion control.  
 5060  
 5061

5062  
5063  
5064  
5065  
5066  
5067  
5068  
5069  
5070  
5071  
5072  
5073  
5074  
5075  
5076  
5077  
5078  
5079  
5080  
5081  
5082  
5083  
5084  
5085  
5086  
5087  
5088  
5089  
5090  
5091  
5092  
5093  
5094  
5095  
5096  
5097  
5098  
5099  
5100  
5101  
5102  
5103  
5104

- 1) Large system suppliers. After the Agency has specified the values for applicable water quality control parameters reflecting optimal corrosion control treatment pursuant to Section 611.352(f), each large system supplier must measure the applicable water quality parameters in accordance with subsection (c) of this Section and determine compliance with the requirements of Section 611.352(g) every six months with the first six-month period to begin on either January 1 or July 1, whichever comes first, after the date the Agency~~State~~ specifies the optimal values under Section 611.352(f).
  - 2) Small- and medium-sized system suppliers. Each small- or medium-sized system supplier must conduct such monitoring during each six-month monitoring period specified in this subsection (d) in which the supplier exceeds the lead action level or the copper action level. For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to Section 611.356(d)(4) at the time of the action level exceedence, the ~~start~~end of the applicable six-month monitoring period under this subsection (d) must coincide with the ~~start~~end of the applicable monitoring period under Section 611.356(d)(4).
  - 3) Compliance with Agency-designated optimal water quality parameter values must be determined as specified under Section 611.352(g).
- e) Reduced monitoring.
- 1) Reduction in tap monitoring. A supplier that has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under subsection (d) of this Section must continue monitoring at the entry points to the distribution system as specified in subsection (c)(4) of this Section. Such a supplier may collect two samples from each tap for applicable water quality parameters from the reduced number of sites indicated in the second column of Table E of this Part during each subsequent six-month monitoring period.
  - 2) Reduction in monitoring frequency.
    - A) Staged reductions in monitoring frequency.
      - i) Annual monitoring. A supplier that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified pursuant to Section 611.352(f), during three consecutive years of monitoring

5105 may reduce the frequency with which it collects the number  
 5106 of tap samples for applicable water quality parameters  
 5107 specified in subsection (e)(1) of this Section from every six  
 5108 months to annually. This reduced sampling may only begin  
 5109 during the calendar year immediately following the end of  
 5110 the monitoring period in which the third consecutive year  
 5111 of six-month monitoring occurs.

5112  
 5113 ii) Triennial monitoring. A supplier that maintains the range  
 5114 of values for the water quality parameters reflecting  
 5115 optimal corrosion control treatment specified pursuant to  
 5116 Section 611.352(f) during three consecutive years of annual  
 5117 monitoring under subsection (e)(2)(A)(i) of this Section  
 5118 may reduce the frequency with which it collects the number  
 5119 of tap samples for applicable water quality parameters  
 5120 specified in subsection (e)(1) of this Section from annually  
 5121 to once every three years. This reduced sampling may only  
 5122 begin no later than the third calendar year following the end  
 5123 of the monitoring period in which the third consecutive  
 5124 year of monitoring occurs.

5125  
 5126 B) A water supplier may reduce the frequency with which it collects  
 5127 tap samples for applicable water quality parameters specified in  
 5128 subsection (e)(1) of this Section to every three years if it  
 5129 demonstrates that it has fulfilled the conditions set forth in  
 5130 subsections (e)(2)(B)(i) through (e)(2)(B)(iii) of this Section  
 5131 the following during two consecutive monitoring periods, subject to  
 5132 the conditions of subsection (e)(2)(B)(iv) of this Section.:

5133  
 5134 i) That its tap water lead level at the 90<sup>th</sup> percentile is less  
 5135 than or equal to the PQL for lead specified in Section  
 5136 611.359(a)(1)(B);

5137  
 5138 ii) That its tap water copper level at the 90<sup>th</sup> percentile is less  
 5139 than or equal to 0.65 mg/l for copper in Section  
 5140 611.350(c)(2); and

5141  
 5142 iii) That it also has maintained the range of values for the water  
 5143 quality parameters reflecting optimal corrosion control  
 5144 treatment specified by the Agency under Section  
 5145 611.352(f).  
 5146





5190 every entry point to the distribution system that is representative of  
5191 each well after treatment (hereafter called a sampling point). The  
5192 supplier must take one sample at the same sampling point unless  
5193 conditions make another sampling point more representative of  
5194 each source or treatment plant.  
5195

- 5196 B) A surface water supplier must take a minimum of one sample at  
5197 every entry point to the distribution system after any application of  
5198 treatment or in the distribution system at a point that is  
5199 representative of each source after treatment (hereafter called a  
5200 sampling point). The system must take each sample at the same  
5201 sampling point unless conditions make another sampling point  
5202 more representative of each source or treatment plant.  
5203

5204 BOARD NOTE: For the purposes of this subsection (a)(1)(B),  
5205 surface water systems include systems with a combination of  
5206 surface and ground sources.  
5207

- 5208 C) If a supplier draws water from more than one source and the  
5209 sources are combined before distribution, the supplier must sample  
5210 at an entry point to the distribution system during periods of  
5211 normal operating conditions (i.e., when water is representative of  
5212 all sources being used).  
5213

- 5214 D) The Agency may, by a SEP issued pursuant to Section 611.110,  
5215 reduce the total number of samples that must be analyzed by  
5216 allowing the use of compositing. Compositing of samples must be  
5217 done by certified laboratory personnel. Composite samples from a  
5218 maximum of five samples are allowed, provided that if the lead  
5219 concentration in the composite sample is greater than or equal to  
5220 0.001 mg/ℓ or the copper concentration is greater than or equal to  
5221 0.160 mg/ℓ, then the supplier must do either of the following:  
5222

- 5223 i) The supplier must take and analyze a follow-up sample  
5224 within 14 days at each sampling point included in the  
5225 composite; or  
5226  
5227 ii) If duplicates of or sufficient quantities from the original  
5228 samples from each sampling point used in the composite  
5229 are available, the supplier may use these instead of  
5230 resampling.  
5231

- 5232 2) SEP requiring an additional sample.

5233  
 5234  
 5235  
 5236  
 5237  
 5238  
 5239  
 5240  
 5241  
 5242  
 5243  
 5244  
 5245  
 5246  
 5247  
 5248  
 5249  
 5250  
 5251  
 5252  
 5253  
 5254  
 5255  
 5256  
 5257  
 5258  
 5259  
 5260  
 5261  
 5262  
 5263  
 5264  
 5265  
 5266  
 5267  
 5268  
 5269  
 5270  
 5271  
 5272  
 5273  
 5274  
 5275

- A) When the Agency determines that the results of sampling indicate an exceedence of the lead or copper MPC established under Section 611.353(b)(4), it must, by a SEP issued pursuant to Section 611.110, require the supplier to collect one additional sample as soon as possible after the initial sample at the same sampling point, but no later than two weeks after the supplier took the initial sample.
  
- B) If a supplier takes an Agency-required confirmation sample for lead or copper, the supplier must average the results obtained from the initial sample with the results obtained from the confirmation sample in determining compliance with the Agency-specified lead and copper MPCs.
  - i) Any analytical result below the MDL must be considered as zero for the purposes of averaging.
  - ii) Any value above the MDL but below the PQL must either be considered as the measured value or be considered one-half the PQL.
  
- b) Monitoring frequency after system exceeds tap water action level. A supplier that exceeds the lead action level or the copper action level in tap sampling must collect one source water sample from each entry point to the distribution system no later than within six months after the end of the monitoring period during which the lead or copper action level was exceeded. For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the Agency has established an alternate monitoring period by a SEP issued pursuant to Section 611.110, the last day of that period.~~exceedence.~~
  
- c) Monitoring frequency after installation of source water treatment. A supplier that installs source water treatment pursuant to Section 611.353(a)(3) must collect an additional source water sample from each entry point to the distribution system during each of two consecutive six-month monitoring periods on or before 36 months after completion of step 2, as specified in Section 611.353(a)(4).
  
- d) Monitoring frequency after the Agency has specified the lead and copper MPCs or has determined that source water treatment is not needed.
  - 1) A supplier must monitor at the frequency specified by subsection (d)(1)(A) or (d)(1)(B) of this Section where the Agency has specified the

5276  
5277  
5278  
5279  
5280  
5281  
5282  
5283  
5284  
5285  
5286  
5287  
5288  
5289  
5290  
5291  
5292  
5293  
5294  
5295  
5296  
5297  
5298  
5299  
5300  
5301  
5302  
5303  
5304  
5305  
5306  
5307  
5308  
5309  
5310  
5311  
5312  
5313  
5314  
5315  
5316  
5317  
5318

MPCs pursuant to Section 611.353(b)(4) or has determined that the supplier is not required to install source water treatment pursuant to Section 611.353(b)(2).

A) GWS suppliers.

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

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

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

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

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

e) Reduced monitoring frequency.

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

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

5319  
5320  
5321  
5322  
5323  
5324  
5325  
5326  
5327  
5328  
5329  
5330  
5331  
5332  
5333  
5334  
5335  
5336  
5337  
5338  
5339  
5340  
5341  
5342  
5343  
5344  
5345  
5346  
5347  
5348  
5349  
5350  
5351  
5352  
5353  
5354  
5355  
5356  
5357  
5358  
5359  
5360  
5361

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

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

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

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

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

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

(Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.359 Analytical Methods**

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

5362  
5363  
5364  
5365  
5366  
5367  
5368  
5369  
5370  
5371  
5372  
5373  
5374  
5375  
5376  
5377  
5378  
5379  
5380  
5381  
5382  
5383  
5384  
5385  
5386  
5387  
5388  
5389  
5390  
5391  
5392  
5393  
5394  
5395  
5396  
5397  
5398  
5399  
5400  
5401  
5402  
5403  
5404

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

- 1) Analyze performance evaluation samples that include lead and copper provided by USEPA Environmental Monitoring and Support Laboratory or equivalent samples provided by the Agency; and
- 2) Achieve quantitative acceptance limits as follows:
  - A) For lead:  $\pm 30$  percent of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.005 mg/l (the PQL for lead is 0.005 mg/l);
  - B) For copper:  $\pm 10$  percent of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.050 mg/l (the PQL for copper is 0.050 mg/l);
  - C) Achieve the method detection limit (MDL) for lead (0.001 mg/l, as defined in Section 611.350(a) according to the procedures in 35 Ill. Adm. Code 186 and appendix B to 40 CFR 136: "Definition and Procedure for the Determination of the Method Detection Limit – Revision 1.11-(2005)", incorporated by reference in Section 611.102(c). This need only be accomplished if the laboratory will be processing source water composite samples under Section ~~611.358(a)(1)(D)~~611.358(a)(1)(C); and
  - D) Be currently certified by USEPA or the Agency to perform analyses to the specifications described in subsection ~~(a)(1)(a)(2)~~ of this Section.

BOARD NOTE: Subsection (a) is derived from 40 CFR 141.89(a) and (a)(1) (2007), as amended at 72 Fed. Reg. 57782 (October 12, 2007)(2005).

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

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

5405  
5406  
5407  
5408  
5409  
5410  
5411  
5412  
5413  
5414  
5415  
5416  
5417  
5418  
5419  
5420  
5421  
5422  
5423  
5424  
5425  
5426  
5427  
5428  
5429  
5430  
5431  
5432  
5433  
5434  
5435  
5436  
5437  
5438  
5439  
5440  
5441  
5442  
5443  
5444  
5445  
5446  
5447

- c) Reporting lead and copper levels.
  - 1) All lead and copper levels greater than or equal to the lead and copper PQL ( $Pb \geq 0.005 \text{ mg/l}$  and  $Cu \geq 0.050 \text{ mg/l}$ ) must be reported as measured.
  - 2) All lead and copper levels measured less than the PQL and greater than the MDL ( $0.005 \text{ mg/l} > Pb > MDL$  and  $0.050 \text{ mg/l} > Cu > MDL$ ) must be either reported as measured or as one-half the PQL set forth in subsection (a) of this Section (i.e., reported as  $0.0025 \text{ mg/l}$  for lead or  $0.025 \text{ mg/l}$  for copper).
  - 3) All lead and copper levels below the lead and copper MDL ( $MDL > Pb$ ) must be reported as zero.

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

(Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 611.360 Reporting**

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

- a) Reporting for tap, lead, and copper, and water quality parameter monitoring.
  - 1) Except as provided in subsection (a)(1)(viii) of this Section, a supplier must report the following information for all samples specified in Section 611.356 and for all water quality parameter samples specified in Section 611.357 within ten days of the end of each applicable sampling period specified in Sections 611.356 and 611.357 (i.e., every six months, annually, every three years, or every nine years). For a monitoring period with a duration less than six months, the end of the monitoring period is the last date on which samples can be collected during that period, as specified in Sections 611.356 and 611.357.
    - A) The results of all tap samples for lead and copper, including the location of each site and the criteria under Section 611.356(a)(3) through (a)(7) under which the site was selected for the supplier's sampling pool;
    - B) Documentation for each tap water lead or copper sample for which

- 5448 the water supplier requests invalidation pursuant to Section  
 5449 611.356(f)(2);  
 5450  
 5451 C) This subsection (a)(1)(C) corresponds with 40 CFR  
 5452 141.90(a)(1)(iii), a provision that USEPA removed and marked  
 5453 "reserved." This statement preserves structural parity with the  
 5454 federal rules;  
 5455  
 5456 D) The 90<sup>th</sup> percentile lead and copper concentrations measured from  
 5457 among all lead and copper tap samples collected during each  
 5458 sampling period (calculated in accordance with Section  
 5459 611.350(c)(3)), unless the Agency calculates the system's 90<sup>th</sup>  
 5460 percentile lead and copper levels under subsection (h) of this  
 5461 Section;  
 5462  
 5463 E) With the exception of initial tap sampling conducted pursuant to  
 5464 Section 611.356(d)(1), the supplier must designate any site that  
 5465 was not sampled during previous sampling periods, and include an  
 5466 explanation of why sampling sites have changed;  
 5467  
 5468 F) The results of all tap samples for pH, and where applicable,  
 5469 alkalinity, calcium, conductivity, temperature, and orthophosphate  
 5470 or silica collected pursuant to Section 611.357(b) through (e);  
 5471  
 5472 G) The results of all samples collected at entry points for applicable  
 5473 water quality parameters pursuant to Section 611.357(b) through  
 5474 (e).  
 5475  
 5476 H) A water supplier must report the results of all water quality  
 5477 parameter samples collected under Section 611.357(c) through (f)  
 5478 during each six-month monitoring period specified in Section  
 5479 611.357(d) within the first 10 days following the end of the  
 5480 monitoring period, unless the Agency has specified, by a SEP  
 5481 granted pursuant to Section 611.110, a more frequent reporting  
 5482 requirement.  
 5483  
 5484 2) For a NTNCWS supplier, or a CWS supplier meeting the criteria of  
 5485 Sections 611.355(7)(A) and (7)(B), that does not have enough taps  
 5486 which can provide first-draw samples, the supplier must do either of the  
 5487 following:  
 5488  
 5489 A) Provide written documentation to the Agency that identifies  
 5490 standing times and locations for enough non-first-draw samples to



5491 make up its sampling pool under Section 611.356(b)(5) by the start  
5492 of the first applicable monitoring period under Section 611.356(d)  
5493 that commenced after April 11, 2000, unless the Agency has  
5494 waived prior Agency approval of non-first-draw ~~sample~~  
5495 sites selected by the supplier pursuant to Section 611.356(b)(5); or  
5496

5497 B) If the Agency has waived prior approval of non-first-draw  
5498 ~~sample~~ sites selected by the supplier, identify, in writing,  
5499 each site that did not meet the six-hour minimum standing time  
5500 and the length of standing time for that particular substitute sample  
5501 collected pursuant to Section 611.356(b)(5) and include this  
5502 information with the lead and copper tap sample results required to  
5503 be submitted pursuant to subsection (a)(1)(A) of this Section.  
5504

5505 3) At a time specified by the Agency, by a SEP issued pursuant to Section  
5506 611.110, or if no specific time is designated by the Agency, then as early  
5507 as possible prior to~~No later than 60 days after~~ the addition of a new source  
5508 or any change in water treatment, ~~unless the Agency requires earlier~~  
5509 ~~notification,~~ a water supplier deemed to have optimized corrosion control  
5510 under Section 611.351(b)(3), a water supplier subject to reduced  
5511 monitoring pursuant to Section 611.356(d)(4), or a water supplier subject  
5512 to a monitoring waiver pursuant to Section 611.356(g); must submit~~send~~  
5513 written documentation to the Agency describing the change or addition.  
5514 ~~In those instances where prior Agency approval of the treatment change or~~  
5515 ~~new source is not required, USEPA has stated that it encourages water~~  
5516 ~~systems to provide the notification to the Agency beforehand to minimize~~  
5517 ~~the risk the treatment change or new source will adversely affect optimal~~  
5518 ~~corrosion control.~~  
5519

5520 4) Any small system supplier applying for a monitoring waiver under Section  
5521 611.356(g), or subject to a waiver granted pursuant to Section  
5522 611.356(g)(3), must provide the following information to the Agency in  
5523 writing by the specified deadline:  
5524

5525 A) By the start of the first applicable monitoring period in Section  
5526 611.356(d), any small water system supplier applying for a  
5527 monitoring waiver must provide the documentation required to  
5528 demonstrate that it meets the waiver criteria of Sections  
5529 611.356(g)(1) and (g)(2).  
5530

5531 B) No later than nine years after the monitoring previously conducted  
5532 pursuant to Section 611.356(g)(2) or Section 611.356(g)(4)(A),  
5533 each small system supplier desiring to maintain its monitoring

5534 waiver must provide the information required by Sections  
 5535 611.356(g)(4)(A) and (g)(4)(B).  
 5536

5537 C) No later than 60 days after it becomes aware that it is no longer  
 5538 free of lead-containing or copper-containing material, as  
 5539 appropriate, each small system supplier with a monitoring waiver  
 5540 must provide written notification to the Agency, setting forth the  
 5541 circumstances resulting in the lead-containing or copper-containing  
 5542 materials being introduced into the system and what corrective  
 5543 action, if any, the supplier plans to remove these materials.  
 5544

5545 D) By October 10, 2000, any small system supplier with a waiver  
 5546 granted prior to April 11, 2000 and that had not previously met the  
 5547 requirements of Section 611.356(g)(2) must have provided the  
 5548 information required by that subsection.  
 5549

5550 5) Each GWS supplier that limits water quality parameter monitoring to a  
 5551 subset of entry points under Section 611.357(c)(3) must provide, by the  
 5552 commencement of such monitoring, written correspondence to the Agency  
 5553 that identifies the selected entry points and includes information sufficient  
 5554 to demonstrate that the sites are representative of water quality and  
 5555 treatment conditions throughout the system.  
 5556

5557 b) Reporting for source water monitoring.  
 5558

5559 1) A supplier must report the sampling results for all source water samples  
 5560 collected in accordance with Section 611.358 within ten days of the end of  
 5561 each source water sampling period (i.e., annually, per compliance period,  
 5562 per compliance cycle) specified in Section 611.358.  
 5563

5564 2) With the exception of the first round of source water sampling conducted  
 5565 pursuant to Section 611.358(b), a supplier must specify any site that was  
 5566 not sampled during previous sampling periods, and include an explanation  
 5567 of why the sampling point has changed.  
 5568

5569 c) Reporting for corrosion control treatment.  
 5570

5571 By the applicable dates under Section 611.351, a supplier must report the  
 5572 following information:  
 5573

5574 1) For a supplier demonstrating that it has already optimized corrosion  
 5575 control, the information required by Section 611.352(b)(2) or (b)(3).  
 5576

- 5577  
5578  
5579  
5580  
5581  
5582  
5583  
5584  
5585  
5586  
5587  
5588  
5589  
5590  
5591  
5592  
5593  
5594  
5595  
5596  
5597  
5598  
5599  
5600  
5601  
5602  
5603  
5604  
5605  
5606  
5607  
5608  
5609  
5610  
5611  
5612  
5613  
5614  
5615  
5616  
5617  
5618  
5619
- 2) For a supplier required to optimize corrosion control, its recommendation regarding optimal corrosion control treatment pursuant to Section 611.352(a).
  - 3) For a supplier required to evaluate the effectiveness of corrosion control treatments pursuant to Section 611.352(c), the information required by Section 611.352(c).
  - 4) For a supplier required to install optimal corrosion control approved by the Agency pursuant to Section 611.352(d), a copy of the Agency permit letter, which acts as certification that the supplier has completed installing the permitted treatment.
- d) Reporting for source water treatment. On or before the applicable dates in Section 611.353, a supplier must provide the following information to the Agency:
- 1) If required by Section 611.353(b)(1), its recommendation regarding source water treatment; or
  - 2) For suppliers required to install source water treatment pursuant to Section 611.353(b)(2), a copy of the Agency permit letter, which acts as certification that the supplier has completed installing the treatment approved by the Agency within 24 months after the Agency approved the treatment.
- e) Reporting for lead service line replacement. A supplier must report the following information to the Agency to demonstrate compliance with the requirements of Section 611.354:
- 1) No later than 12 months after the end of a monitoring period in which~~Within 12 months after~~ a supplier exceeds the lead action level in sampling referred to in Section 611.354(a), the supplier must submit~~report~~ each of the following to the Agency in writing:
    - A) The material~~A demonstration that it has conducted a materials evaluation, including the evaluation~~ conducted as required by Section 611.356(a);
    - B) The~~Identify the~~ initial number of lead service lines in its distribution system at the time the supplier exceeds the lead action level; and

5620  
5621  
5622  
5623  
5624  
5625  
5626  
5627  
5628  
5629  
5630  
5631  
5632  
5633  
5634  
5635  
5636  
5637  
5638  
5639  
5640  
5641  
5642  
5643  
5644  
5645  
5646  
5647  
5648  
5649  
5650  
5651  
5652  
5653  
5654  
5655  
5656  
5657  
5658  
5659  
5660  
5661  
5662

- C) ~~The~~ Provide the Agency with the supplier's schedule for annually replacing at least seven percent of the initial number of lead service lines in its distribution system.
  
- 2) Action by the supplier.
  - A) ~~No later than~~ Within 12 months after the end of a monitoring period in which a supplier exceeds the lead action level in sampling referred to in Section 611.354(a), and every 12 months thereafter, the supplier must demonstrate to the Agency in writing that the supplier has done either of the following:
    - iA) Replaced in the previous 12 months at least seven percent of the initial number of lead service lines in its distribution system (or any greater number of lines specified by the Agency pursuant to Section 611.354(e)); or
    - iiB) Conducted sampling that demonstrates that the lead concentration in all service line samples from individual lines, taken pursuant to Section 611.356(b)(3), is less than or equal to 0.015 mg/l.
  - ~~B~~ C) ~~When~~ Where the supplier makes a demonstration under subsection (e)(2)(~~A~~)(ii) of this Section, the total number of lines that the supplier has replaced, combined with the total number that meet the criteria of Section ~~611.354(c)~~611.354(b), must equal at least seven percent of the initial number of lead lines identified pursuant to subsection (e)(1)(~~a~~) of this Section (or the percentage specified by the Agency pursuant to Section 611.354(e)).
  
- 3) The annual letter submitted to the Agency pursuant to subsection (e)(2) of this Section must contain the following information:
  - A) The number of lead service lines originally scheduled to be replaced during the previous year of the supplier's replacement schedule;
  - B) The number and location of each lead service line actually replaced during the previous year of the supplier's replacement schedule; and
  - C) If measured, the water lead concentration from each lead service line sampled pursuant to Section 611.356(b)(3) and the location of

5663 each lead service line sampled, the sampling method used, and the  
5664 date of sampling.  
5665

- 5666 4) Any supplier that collects lead service line samples following partial lead  
5667 service line replacement required by Section 611.354 must report the  
5668 results to the Agency within the first ten days of the month following the  
5669 month in which the supplier receives the laboratory results, or as specified  
5670 by the Agency. The Agency may, by a SEP granted pursuant to Section  
5671 611.110, eliminate this requirement to report these monitoring results. A  
5672 supplier must also report any additional information as specified by the  
5673 Agency, and in a time and manner prescribed by the Agency, to verify that  
5674 all partial lead service line replacement activities have taken place.  
5675

5676 f) Reporting for public education program.  
5677

- 5678 1) Any water supplier that is subject to the public education requirements in  
5679 Section 611.355 must, within ten days after the end of each period in  
5680 which the supplier is required to perform public education tasks in  
5681 accordance with Section 611.355(b)~~611.355(e)~~, send written  
5682 documentation to the Agency that contains the following:  
5683  
5684 A) A demonstration that the supplier has delivered the public  
5685 education materials that meet the content requirements in  
5686 SectionSections 611.355(a) and (b) and the delivery requirements  
5687 in Section 611.355(b)~~611.355(e)~~; and  
5688  
5689 B) A list of all the newspapers, radio stations, television stations, and  
5690 facilities and organizations to which the supplier delivered public  
5691 education materials during the period in which the supplier was  
5692 required to perform public education tasks.  
5693  
5694 2) Unless required by the Agency, by a SEP issued pursuant to Section  
5695 611.110, a supplier that previously has submitted the information required  
5696 by subsection (f)(1)(B) of this Section need not resubmit the information  
5697 required by subsection (f)(1)(B) of this Section, as long as there have been  
5698 no changes in the distribution list and the supplier certifies that the public  
5699 education materials were distributed to the same list submitted previously.  
5700  
5701 3) No later than three months following the end of the monitoring period,  
5702 each supplier must mail a sample copy of the consumer notification of tap  
5703 results to the Agency, along with a certification that the notification has  
5704 been distributed in a manner consistent with the requirements of Section  
5705 611.355(d).

5706  
5707  
5708  
5709  
5710  
5711  
5712  
5713  
5714  
5715  
5716  
5717  
5718  
5719  
5720  
5721  
5722  
5723  
5724  
5725  
5726  
5727  
5728  
5729  
5730  
5731  
5732  
5733  
5734  
5735  
5736  
5737  
5738  
5739  
5740  
5741  
5742  
5743  
5744  
5745  
5746  
5747  
5748

- g) Reporting of additional monitoring data. Any supplier that collects sampling data in addition to that required by this Subpart G must report the results of that sampling to the Agency within the first ten days following the end of the applicable sampling periods specified by Sections 611.356 through 611.358 during which the samples are collected.
  
- h) Reporting of 90th percentile lead and copper concentrations where the Agency calculates a system's 90th percentile concentrations. A water supplier is not required to report the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, as required by subsection (a)(1)(D) of this Section if the following is true:
  - 1) The Agency has previously notified the water supplier that it will calculate the water system's 90<sup>th</sup> percentile lead and copper concentrations, based on the lead and copper tap results submitted pursuant to subsection (h)(2)(A) of this Section, and has specified a date before the end of the applicable monitoring period by which the supplier must provide the results of lead and copper tap water samples;
  
  - 2) The supplier has provided the following information to the Agency by the date specified in subsection (h)(1) of this Section:
    - A) The results of all tap samples for lead and copper including the location of each site and the criteria under Section 611.356(a)(3), (a)(4), (a)(5), (a)(6), or (a)(7) under which the site was selected for the system's sampling pool, pursuant to subsection (a)(1)(A) of this Section; and
  
    - B) An identification of sampling sites utilized during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed; and
  
  - 3) The Agency has provided the results of the 90<sup>th</sup> percentile lead and copper calculations, in writing, to the water supplier before the end of the monitoring period.

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

(Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

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

**Section 611.381 Analytical Requirements**

- a) A supplier must use only the analytical methods specified in this Section or their equivalents as approved by the Agency to demonstrate compliance with the requirements of this Subpart I and with the requirements of Subparts W and Y of this Part.
- b) Disinfection byproducts (DBPs).
  - 1) A supplier must measure disinfection byproducts (DBPs) by the appropriate of the following methods:
    - A) TTHM:
      - i) By purge and trap, gas chromatography, electrolytic conductivity detector, and photoionization detector: USEPA Organic Methods, Method 502.2. If TTHMs are the only analytes being measured in the sample, then a photoionization detector is not required.
      - ii) By purge and trap, gas chromatography, mass spectrometer: USEPA Organic Methods, Method 524.2.
      - iii) By liquid-liquid extraction, gas chromatography, electron capture detector: USEPA Organic Methods, Method 551.1.
    - B) HAA5:
      - i) By liquid-liquid extraction (diazomethane), gas chromatography, electron capture detector: Standard Methods, 19<sup>th</sup> or 21<sup>st</sup> ed., Method 6251 B.

BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entry for HAA5 by liquid-liquid extraction (diazomethane), gas chromatography, electron capture detector, in the table at corresponding 40 CFR 141.131(b)(1) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 6251 B (as approved in 1994). The Board has instead cited to the 21<sup>st</sup>

5792 edition of Standard Methods for the Examination of Water  
 5793 and Wastewater (the printed version of Standard Methods),  
 5794 since the version of Method 6251 that appears in that  
 5795 printed volume is that cited by USEPA as acceptable for  
 5796 use. USEPA later added Method 6251 B from the 21<sup>st</sup>  
 5797 edition of Standard Methods as an approved alternative  
 5798 method in appendix A to subpart C, added on June 3, 2008  
 5799 (at 73 Fed. Reg. 31616).

5800  
 5801 ii) By solid phase extractor (acidic methanol), gas  
 5802 chromatography, electron capture detector: USEPA  
 5803 Organic Methods, Method 552.1.

5804  
 5805 iii) By liquid-liquid extraction (acidic methanol), gas  
 5806 chromatography, electron capture detector: USEPA  
 5807 Organic Methods, Method 552.2 or 552.3.

5808  
 5809 C) Bromate:

5810  
 5811 i) By ion chromatography: USEPA Organic and Inorganic  
 5812 Methods, Method 300.1.

5813  
 5814 ii) By ion chromatography and post-column reaction: USEPA  
 5815 OGWDW Methods, Method 317.0, rev 2.0, or 326.0, rev.  
 5816 1.0.

5817  
 5818 iii) By inductively-coupled plasma ~~/~~mass spectrometer:  
 5819 USEPA Organic and Inorganic Methods, Method 321.8.

5820  
 5821 BOARD NOTE: Ion chromatography and post column reaction or  
 5822 inductively-coupled plasma ~~/~~mass spectrometry must be used for  
 5823 monitoring of bromate for purposes of demonstrating eligibility of  
 5824 reduced monitoring, as prescribed in Section 611.382(b)(3)(B).  
 5825 For inductively-coupled plasma ~~/~~mass spectrometry, samples  
 5826 must be preserved at the time of sampling with 50 mg  
 5827 ethylenediamine (EDA) per liter of sample, and the samples must  
 5828 be analyzed within 28 days.

5829  
 5830 D) Chlorite:

5831  
 5832 i) By amperometric titration: Standard Methods, 19<sup>th</sup> or 21<sup>st</sup>  
 5833 ed., Method 4500-ClO<sub>2</sub> E.

5834



5835 BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg.  
 5836 388), USEPA amended the entry for chlorite by  
 5837 amperometric titration, in the table at corresponding 40  
 5838 CFR 141.23(k)(1) to allow the use of Standard Methods  
 5839 Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 4500-ClO<sub>2</sub>  
 5840 E (as approved in 2000). The Board has instead cited to the  
 5841 21<sup>st</sup> edition of Standard Methods for the Examination of  
 5842 Water and Wastewater (the printed version of Standard  
 5843 Methods), since the version of Method 4500-ClO<sub>2</sub> that  
 5844 appears in that printed volume is that cited by USEPA as  
 5845 acceptable for use. USEPA later added Method 4500-ClO<sub>2</sub>  
 5846 E from the 21<sup>st</sup> edition of Standard Methods as an approved  
 5847 alternative method in appendix A to subpart C, added on  
 5848 June 3, 2008 (at 73 Fed. Reg. 31616).  
 5849

- 5850 ii) By spectrophotometry: USEPA OGWDW Methods,  
 5851 Method 327.0, rev. 1.1.
- 5852
- 5853 iii) By ion chromatography: USEPA Environmental Inorganic  
 5854 Methods, Method 300.0; USEPA Organic and Inorganic  
 5855 Methods, Method 300.1; USEPA OGWDW Methods,  
 5856 Method 317.0, rev. 2.0, or 326.0, rev. 1.0; or ASTM  
 5857 Method D6581-00.
- 5858

5859 BOARD NOTE: Amperometric titration or spectrophotometry  
 5860 may be used for routine daily monitoring of chlorite at the entrance  
 5861 to the distribution system, as prescribed in Section  
 5862 611.382(b)(2)(A)(i). Ion chromatography must be used for routine  
 5863 monthly monitoring of chlorite and additional monitoring of  
 5864 chlorite in the distribution system, as prescribed in Section  
 5865 611.382(b)(2)(A)(ii) and (b)(2)(B).  
 5866

- 5867 2) Analyses under this Section for DBPs must be conducted by laboratories  
 5868 that have received certification by USEPA or the Agency except as  
 5869 specified under subsection (b)(3) of this Section. To receive certification  
 5870 to conduct analyses for the DBP contaminants listed in Sections 611.312  
 5871 and 611.381 and Subparts W and Y of this Part, the laboratory must fulfill  
 5872 the requirements of subsections (b)(2)(A), (b)(2)(C), and (b)(2)(D) of this  
 5873 Section.  
 5874
- 5875 A) The laboratory must analyze performance evaluation (PE) samples  
 5876 that are acceptable to USEPA or the Agency at least once during  
 5877 each consecutive 12-month period by each method for which the  
 5878 laboratory desires certification.

5879  
 5880  
 5881  
 5882  
 5883  
 5884  
 5885  
 5886  
 5887  
 5888  
 5889  
 5890  
 5891  
 5892  
 5893  
 5894  
 5895  
 5896  
 5897  
 5898  
 5899  
 5900  
 5901  
 5902  
 5903  
 5904  
 5905  
 5906  
 5907  
 5908  
 5909  
 5910  
 5911  
 5912  
 5913  
 5914  
 5915  
 5916  
 5917  
 5918  
 5919  
 5920  
 5921

- 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;
  - 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.

- 5922 D) The laboratory must report quantitative data for concentrations at  
 5923 least as low as the minimum reporting levels (MRLs) listed in  
 5924 subsections (b)(2)(D)(i) through (b)(2)(D)(xi) of this Section,  
 5925 subject to the limitations of subsections (b)(2)(D)(xii) and  
 5926 (b)(2)(D)(xiii) of this Section, for all DBP samples analyzed for  
 5927 compliance with Sections 611.312 and 611.385 and Subparts W  
 5928 and Y of this Part:  
 5929
- 5930 i) Chloroform (a THM): 0.0010 mg/l;
  - 5931
  - 5932 ii) Bromodichloromethane (a THM): 0.0010 mg/l;
  - 5933
  - 5934 iii) Dibromochloromethane (a THM): 0.0010 mg/l;
  - 5935
  - 5936 iv) Bromoform (a THM): 0.0010 mg/l;
  - 5937
  - 5938 v) Monochloroacetic Acid (an HAA5): 0.0020 mg/l;
  - 5939
  - 5940 vi) Dichloroacetic Acid (an HAA5): 0.0010 mg/l;
  - 5941
  - 5942 vii) Trichloroacetic Acid (an HAA5): 0.0010 mg/l;
  - 5943
  - 5944 viii) Monobromoacetic Acid (an HAA5): 0.0010 mg/l;
  - 5945
  - 5946 ix) Dibromoacetic Acid (an HAA5): 0.0010 mg/l;
  - 5947
  - 5948 x) Chlorite: 0.020 mg/l, applicable to monitoring as required  
 5949 by Section 611.382(b)(2)(A)(ii) and (b)(2)(B); and
  - 5950
  - 5951 xi) Bromate: 0.0050, or 0.0010 mg/l if the laboratory uses  
 5952 USEPA OGWDW Methods, Method 317.0, rev. 2.0, or  
 5953 326.0 or USEPA Organic and Inorganic Methods, Method  
 5954 321.8.
  - 5955
  - 5956 xii) The calibration curve must encompass the regulatory MRL  
 5957 concentration. Data may be reported for concentrations  
 5958 lower than the regulatory MRL as long as the precision and  
 5959 accuracy criteria are met by analyzing an MRL check  
 5960 standard at the lowest reporting limit chosen by the  
 5961 laboratory. The laboratory must verify the accuracy of the  
 5962 calibration curve at the MRL concentration by analyzing an  
 5963 MRL check standard with a concentration less than or  
 5964 equal to 110% of the MRL with each batch of samples.

5965 The measured concentration for the MRL check standard  
 5966 must be  $\pm 50\%$  of the expected value, if any field sample in  
 5967 the batch has a concentration less than five times the  
 5968 regulatory MRL. Method requirements to analyze higher  
 5969 concentration check standards and meet tighter acceptance  
 5970 criteria for them must be met in addition to the MRL check  
 5971 standard requirement.

5972  
 5973 xiii) When adding the individual trihalomethane or haloacetic  
 5974 acid concentrations, for the compounds listed in  
 5975 subsections (b)(2)(D)(v) through (b)(2)(D)(ix) of this  
 5976 Section, to calculate the TTHM or HAA5 concentrations,  
 5977 respectively, a zero is used for any analytical result that is  
 5978 less than the MRL concentration for that DBP, unless  
 5979 otherwise specified by the Agency.  
 5980

5981 3) A party approved by USEPA or the Agency must measure daily chlorite  
 5982 samples at the entrance to the distribution system.  
 5983

5984 c) Disinfectant residuals.

5985  
 5986 1) A supplier must measure residual disinfectant concentrations for free  
 5987 chlorine, combined chlorine (chloramines), and chlorine dioxide by the  
 5988 appropriate of the methods listed in subsections (c)(1)(A) through (c)(1)(D)  
 5989 of this Section, subject to the provisions of subsection (c)(1)(E) of this  
 5990 Section:  
 5991

5992 A) Free Chlorine:

- 5993
- 5994 i) Amperometric titration using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>,  
 5995 or 21<sup>st</sup> ed., Method 4500-Cl D, or ASTM Method 1253-86,  
 5996 1253-96, or 1253-03;
- 5997
- 5998 ii) DPD ferrous titration using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or  
 5999 21<sup>st</sup> ed., Method 4500-Cl F;
- 6000
- 6001 iii) DPD colorimetric using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or  
 6002 21<sup>st</sup> ed., Method 4500-Cl G; or
- 6003
- 6004 iv) Syringaldazine (FACTS) using Standard Methods, 19<sup>th</sup>,  
 6005 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-Cl H.  
 6006

6007 B) Combined Chlorine:  
 6008

- 6009  
6010  
6011  
6012  
6013  
6014  
6015  
6016  
6017  
6018  
6019  
6020  
6021  
6022  
6023  
6024  
6025  
6026  
6027  
6028  
6029  
6030  
6031  
6032  
6033  
6034  
6035  
6036  
6037  
6038  
6039  
6040  
6041  
6042  
6043  
6044  
6045  
6046  
6047  
6048  
6049  
6050
- i) Amperometric titration using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-Cl D, or ASTM Method 1253-86, 1253-96, or 1253-03;
  - ii) DPD ferrous titration using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-Cl F; or
  - iii) DPD colorimetric using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-Cl G.
- C) Total Chlorine:
- i) Amperometric titration using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-Cl D, or ASTM Method 1253-86, 1253-96, or 1253-03;
  - ii) Low-level amperometric titration using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-Cl E;
  - iii) DPD ferrous titration using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-Cl F;
  - iv) DPD colorimetric using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-Cl G; or
  - v) Iodometric electrode using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-Cl I.
- D) Chlorine Dioxide:
- i) DPD using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-ClO<sub>2</sub> D;
  - ii) Amperometric Method II using Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 4500-ClO<sub>2</sub> E; or
  - iii) Lissamine Green spectrophotometric using USEPA OGWDW Method 327.0 (rev. 1.1).
- E) The methods listed are approved for measuring the specified disinfectant residual. The supplier may measure free chlorine or total chlorine for demonstrating compliance with the chlorine

MRDL and combined chlorine, or total chlorine may be measured for demonstrating compliance with the chloramine MRDL.

BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entries for free chlorine, combined chlorine, and chlorine dioxide in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-Cl D, E, F, G, H, or I or Method 4500-ClO<sub>2</sub> E (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 4500-Cl and Method 4500-ClO<sub>2</sub> that appear in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-Cl D, E, F, G, H, or I or Method 4500-ClO<sub>2</sub> E from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

2) Test strips.

A) ITS Method D99-003.

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

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

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

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

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

2) Bromide:

A) USEPA Inorganic Methods, Method 300.0;

- 6094  
 6095  
 6096  
 6097  
 6098  
 6099  
 6100  
 6101  
 6102  
 6103  
 6104  
 6105  
 6106  
 6107  
 6108  
 6109  
 6110  
 6111  
 6112  
 6113  
 6114  
 6115  
 6116  
 6117  
 6118  
 6119  
 6120  
 6121  
 6122  
 6123  
 6124  
 6125  
 6126  
 6127  
 6128  
 6129  
 6130  
 6131  
 6132  
 6133  
 6134  
 6135  
 6136
- B) USEPA Organic and Inorganic Methods, Method 300.1;
  - C) USEPA OGWDW Methods, Method 317.0 (rev. 2.0) or Method 326.0 (rev. 1.0); or
  - D) ASTM Method D6581-00.
- 3) Total Organic Carbon (TOC), by any of the methods listed in subsection (d)(3)(A)(i), (d)(3)(A)(ii), (d)(3)(A)(iii), or (d)(3)(B) of this Section, subject to the limitations of subsection (d)(3)(C) of this Section:
- A) Standard Methods, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed., using one of the following methods:
    - i) Method 5310 B (High-Temperature Combustion Method);
    - ii) Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method); or
    - iii) Method 5310 D (Wet-Oxidation Method).
- BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entries for total organic carbon, high-temperature combustion, persulfate-ultraviolet or heated persulfate, and wet oxidation at corresponding 40 CFR 141.131(d)(3) to allow the use of Standard Methods Online (at [ww.standardmethods.org](http://ww.standardmethods.org)), Method 5310 B, C, or D (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 5310 B, C, or D that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 5310 B, C, or D from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
- B) USEPA NERL Method 415.3 (rev. 1.1).
  - C) Inorganic carbon must be removed from the samples prior to analysis. TOC samples may not be filtered prior to analysis. TOC samples must be acidified at the time of sample collection to achieve pH less than or equal to 2 with minimal addition of the

acid specified in the method or by the instrument manufacturer.  
 Acidified TOC samples must be analyzed within 28 days.

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

A) Dissolved Organic Carbon (DOC). Standard Methods, 19<sup>th</sup> ed., 20<sup>th</sup> ed., or 21<sup>st</sup> ed., Method 5310 B (High-Temperature Combustion Method), Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method), or Method 5310 D (Wet-Oxidation Method) or USEPA NERL Method 415.3 (rev. 1.1). Prior to analysis, DOC samples must be filtered through the 0.45  $\mu m$  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  $mg/\ell$ ; and

BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388), USEPA amended the entries for specific ultraviolet absorbance-dissolved organic carbon at corresponding 40 CFR 141.131(d)(4)(i) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 5310 B, C, or D (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 5310 B, C, or D that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 5310 B, C, or D from the 21<sup>st</sup> edition of Standard Methods



6180 as an approved alternative method in appendix A to subpart C,  
6181 added on June 3, 2008 (at 73 Fed. Reg. 31616).

6182  
6183 B) Ultraviolet Absorption at 254 nm (UV<sub>254</sub>). Method 5910 B  
6184 (Ultraviolet Absorption Method). UV absorption must be measured  
6185 at 253.7 nm (may be rounded off to 254 nm). Prior to analysis,  
6186 UV<sub>254</sub> samples must be filtered through a 0.45 µm pore-diameter  
6187 filter. The pH of UV<sub>254</sub> samples may not be adjusted. Samples  
6188 must be analyzed as soon as practical after sampling, not to exceed  
6189 48 hours; and

6190  
6191 BOARD NOTE: On January 4, 2006 (at 71 Fed. Reg. 388),  
6192 USEPA amended the entries for specific ultraviolet absorbance-  
6193 ultraviolet absorption at 254 nm at corresponding 40 CFR  
6194 141.131(d)(4)(ii) to allow the use of Standard Methods Online (at  
6195 www.standardmethods.org), Method 5910 B (as approved in  
6196 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard  
6197 Methods for the Examination of Water and Wastewater (the  
6198 printed version of Standard Methods), since the version of Method  
6199 5910 B that appears in that printed volume is that cited by USEPA  
6200 as acceptable for use. USEPA later added Method 5910 B from  
6201 the 21<sup>st</sup> edition of Standard Methods as an approved alternative  
6202 method in appendix A to subpart C, added on June 3, 2008 (at 73  
6203 Fed. Reg. 31616).

6204  
6205 5) pH. All methods allowed in Section 611.611(a)(17) for measuring pH.

6206  
6207 6) Magnesium. All methods allowed in Section 611.611(a) for measuring  
6208 magnesium.  
6209

6210 BOARD NOTE: Derived from 40 CFR 141.131 (2007) and appendix A to 40 CFR 141,  
6211 as added at 73 Fed. Reg. 31616 (June 3, 2008)(2006).

6212  
6213 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

6214  
6215 SUBPART L: MICROBIOLOGICAL MONITORING AND  
6216 ANALYTICAL REQUIREMENTS

6217  
6218 **Section 611.526 Analytical Methodology**

6219  
6220 a) The standard sample volume required for total coliform analysis, regardless of  
6221 analytical method used, is 100 mL.

6222  
6223 b) Suppliers need only determine the presence or absence of total coliforms; a

- 6224 determination of total coliform density is not required.  
 6225  
 6226 c) Suppliers must conduct total coliform analyses in accordance with one of the  
 6227 following analytical methods, incorporated by reference in Section 611.102 (the  
 6228 time from sample collection to initiation of analysis may not exceed 30 hours, and  
 6229 the supplier is encouraged but not required to hold samples below 10° C during  
 6230 transit):  
 6231  
 6232 1) Total Coliform Fermentation Technique, as set forth in Standard Methods,  
 6233 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Methods 9221 A and B, as follows:  
 6234  
 6235 A) Lactose broth, as commercially available, may be used in lieu of  
 6236 lauryl tryptose broth if the supplier conducts at least 25 parallel  
 6237 tests between this medium and lauryl tryptose broth using the  
 6238 water normally tested and this comparison demonstrates that the  
 6239 false-positive rate and false-negative rate for total coliforms, using  
 6240 lactose broth, is less than 10 percent;  
 6241  
 6242 B) If inverted tubes are used to detect gas production, the media  
 6243 should cover these tubes at least one-half to two-thirds after the  
 6244 sample is added; and  
 6245  
 6246 C) No requirement exists to run the completed phase on 10 percent of  
 6247 all total coliform-positive confirmed tubes.  
 6248  
 6249 2) Total Coliform Membrane Filter Technique, as set forth in Standard  
 6250 Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Methods 9222 A, B, and C.  
 6251  
 6252 3) Presence-Absence (P-A) Coliform Test, as set forth in: Standard Methods,  
 6253 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 9221 D, as follows:  
 6254  
 6255 A) No requirement exists to run the completed phase on 10 percent of  
 6256 all total coliform-positive confirmed tubes; and  
 6257  
 6258 B) Six-times formulation strength may be used if the medium is filter-  
 6259 sterilized rather than autoclaved.  
 6260  
 6261 4) ONPG-MUG test: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.:  
 6262 Method 9223. (The ONPG-MUG test is also known as the Autoanalysis  
 6263 Colilert System).)  
 6264  
 6265 5) Colisure Test (Autoanalysis Colilert System). (The Colisure Test may be  
 6266 read after an incubation time of 24 hours.)

6267  
 6268 BOARD NOTE: USEPA included the P-A Coliform and Colisure Tests  
 6269 for testing finished water under the coliform rule, but did not include them  
 6270 for the purposes of the surface water treatment rule, under Section  
 6271 611.531, for which quantitation of total coliforms is necessary. For these  
 6272 reasons, USEPA included Standard Methods: Method 9221 C for the  
 6273 surface water treatment rule, but did not include it for the purposes of the  
 6274 total coliform rule, under this Section.

- 6275
- 6276 6) E\*Colite® Test (Charm Sciences, Inc.).
- 6277
- 6278 7) m-ColiBlue24® Test (Hatch Company).
- 6279
- 6280 8) ReadyCult Coliforms 100 Presence/Absence Test.
- 6281
- 6282 9) Membrane Filter Technique using Chromocult Coliform Agar.
- 6283
- 6284 10) Colitag® Test.
- 6285

6286 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended  
 6287 note 1 to the table at corresponding 40 CFR 141.21(f)(3) to allow the use of  
 6288 Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 9221 A, B, and  
 6289 D (as approved in 1999) or Method 9222 A, B, and C (as approved in 1997); and  
 6290 9223 B (as approved in 1997). The Board has cited to the 21<sup>st</sup> edition of Standard  
 6291 Methods for the Examination of Water and Wastewater (the printed version of  
 6292 Standard Methods) for Methods 9221 and 9223, since the cited versions of the  
 6293 methods appears in that reference. USEPA later added Method 9221 A, B, and D;  
 6294 Method 9222 A, B, and C; Method 9223 from the 21<sup>st</sup> edition of Standard  
 6295 Methods as an approved alternative method in appendix A to subpart C, added on  
 6296 June 3, 2008 (at 73 Fed. Reg. 31616).

- 6297
- 6298 d) This subsection corresponds with 40 CFR 141.21(f)(4), which USEPA has
- 6299 marked "reserved." This statement maintains structural consistency with the
- 6300 federal regulations.
- 6301
- 6302 e) Suppliers must conduct fecal coliform analysis in accordance with the following
- 6303 procedure:
- 6304
- 6305 1) When the MTF Technique or P-A Coliform Test is used to test for total
- 6306 coliforms, shake the lactose-positive presumptive tube or P-A vigorously
- 6307 and transfer the growth with a sterile 3-mm loop or sterile applicator stick
- 6308 into brilliant green lactose bile broth and EC medium, defined below, to
- 6309 determine the presence of total and fecal coliforms, respectively.

- 6310  
 6311  
 6312  
 6313  
 6314  
 6315  
 6316  
 6317  
 6318  
 6319  
 6320  
 6321  
 6322  
 6323  
 6324  
 6325  
 6326  
 6327  
 6328  
 6329  
 6330  
 6331  
 6332  
 6333  
 6334  
 6335  
 6336  
 6337  
 6338  
 6339  
 6340  
 6341  
 6342  
 6343  
 6344  
 6345  
 6346  
 6347  
 6348  
 6349  
 6350  
 6351  
 6352
- 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  $24 \pm 2$  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, 18<sup>th</sup> ed., 19<sup>th</sup> ed., and 20<sup>th</sup> ed.: Method 9221E.
  - 4) Suppliers need only determine the presence or absence of fecal coliforms; a determination of fecal coliform density is not required.
- f) Suppliers must conduct analysis of *E. coli* in accordance with one of the following analytical methods, incorporated by reference in Section 611.102:
- 1) EC medium supplemented with  $50 \mu\text{g}/\ell$  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  $24 \pm 2$  hours; or
  - 2) Nutrient agar supplemented with  $100 \mu\text{g}/\ell$  MUG (final concentration), as described in Standard Methods, 19<sup>th</sup> ed. and 20<sup>th</sup> 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, 18<sup>th</sup> 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

- 6353 35° Celsius for four hours, then observe the colony or colonies under  
 6354 ultraviolet light (366-nm) in the dark for fluorescence. If fluorescence is  
 6355 visible, E. coli are present.  
 6356
- 6357 3) Minimal Medium ONPG-MUG (MMO-MUG) Test, as set forth in  
 6358 Appendix D of this Part. (The Autoanalysis Colilert System is a MMO-  
 6359 MUG test.) If the MMO-MUG test is total coliform positive after a 24-  
 6360 hour incubation, test the medium for fluorescence with a 366-nm  
 6361 ultraviolet light (preferably with a six-watt lamp) in the dark. If  
 6362 fluorescence is observed, the sample is E. coli-positive. If fluorescence is  
 6363 questionable (cannot be definitively read) after 24 hours incubation,  
 6364 incubate the culture for an additional four hours (but not to exceed 28  
 6365 hours total), and again test the medium for fluorescence. The MMO-MUG  
 6366 test with hepes buffer is the only approved formulation for the detection of  
 6367 E. coli.  
 6368
- 6369 4) The Colisure Test (Autoanalysis Colilert System).  
 6370
- 6371 5) The membrane filter method with MI agar.  
 6372
- 6373 6) The E\*Colite® Test.  
 6374
- 6375 7) The m-ColiBlue24® Test.  
 6376
- 6377 8) ReadyCult Coliforms 100 Presence/Absence Test.  
 6378
- 6379 9) Membrane Filter Technique using Chromocult Coliform Agar.  
 6380
- 6381 10) Colitag® Test.  
 6382
- 6383 g) As an option to the method set forth in subsection (f)(3) of this Section, a supplier  
 6384 with a total coliform-positive, MUG-negative, MMO-MUG test may further  
 6385 analyze the culture for the presence of E. coli by transferring a 0.1 ml, 28-hour  
 6386 MMO-MUG culture to EC medium + MUG with a pipet. The formulation and  
 6387 incubation conditions of the EC medium + MUG, and observation of the results,  
 6388 are described in subsection (f)(1) of this Section.  
 6389
- 6390 h) This subsection corresponds with 40 CFR 141.21(f)(8), a central listing of all  
 6391 documents incorporated by reference into the federal microbiological analytical  
 6392 methods. The corresponding Illinois incorporations by reference are located at  
 6393 Section 611.102. This statement maintains structural parity with USEPA  
 6394 regulations.  
 6395

6396 BOARD NOTE: Derived from 40 CFR 141.21(f) (2007) and appendix A to 40 CFR 141,  
 6397 as added at 73 Fed. Reg. 31616 (June 3, 2008)(2003).  
 6398

6399 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)  
 6400

6401 **Section 611.531 Analytical Requirements**  
 6402

6403 The analytical methods specified in this Section must be used to demonstrate compliance with  
 6404 the requirements of only 611.Subpart B; they do not apply to analyses performed for the  
 6405 purposes of Sections 611.521 through 611.527 of this Subpart L. Measurements for pH,  
 6406 temperature, turbidity, and RDCs must be conducted under the supervision of a certified  
 6407 operator. Measurements for total coliforms, fecal coliforms and HPC must be conducted by a  
 6408 laboratory certified by the Agency to do such analysis. The following procedures must be  
 6409 performed by the following methods, incorporated by reference in Section 611.102:  
 6410

6411 a) A supplier shall do as follows:  
 6412

- 6413 1) Conduct analyses of pH in accordance with one of the methods listed at  
 6414 Section 611.611; and  
 6415
- 6416 2) Conduct analyses of total coliforms, fecal coliforms, heterotrophic  
 6417 bacteria, and turbidity in accordance with one of the following methods,  
 6418 and by using analytical test procedures contained in USEPA Technical  
 6419 Notes, incorporated by reference in Section 611.102, as follows:  
 6420

6421 A) Total Coliforms.  
 6422

6423 BOARD NOTE: The time from sample collection to initiation of  
 6424 analysis for source (raw) water samples required by Sections  
 6425 611.521 and 611.532 and Subpart B of this Part only must not  
 6426 exceed eight hours. The supplier is encouraged but not required to  
 6427 hold samples below 10° C during transit.  
 6428

- 6429 i) Total coliform fermentation technique: Standard Methods,  
 6430 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 9221 A, B, and C.  
 6431

6432 BOARD NOTE: Lactose broth, as commercially available,  
 6433 may be used in lieu of lauryl tryptose broth if the supplier  
 6434 conducts at least 25 parallel tests between this medium and  
 6435 lauryl tryptose broth using the water normally tested and  
 6436 this comparison demonstrates that the false-positive rate  
 6437 and false-negative rate for total coliforms, using lactose  
 6438 broth, is less than 10 percent. If inverted tubes are used to

6439 detect gas production, the media should cover these tubes at  
6440 least one-half to two-thirds after the sample is added. No  
6441 requirement exists to run the completed phase on 10  
6442 percent of all total coliform-positive confirmed tubes.  
6443

6444 ii) Total coliform membrane filter technique: Standard  
6445 Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 9222 A, B,  
6446 and C.  
6447

6448 iii) ONPG-MUG test (also known as the Autoanalysis Colilert  
6449 System): Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.:  
6450 Method 9223.  
6451

6452 BOARD NOTE: USEPA included the P-A Coliform and  
6453 Colisure Tests for testing finished water under the coliform  
6454 rule, under Section 611.526, but did not include them for  
6455 the purposes of the surface water treatment rule, under this  
6456 Section, for which quantitation of total coliforms is  
6457 necessary. For these reasons, USEPA included Standard  
6458 Methods: Method 9221 C for the surface water treatment  
6459 rule, but did not include it for the purposes of the total  
6460 coliform rule, under Section 611.526.  
6461

6462 B) Fecal Coliforms.  
6463

6464 BOARD NOTE: The time from sample collection to initiation of  
6465 analysis for source (raw) water samples required by Sections  
6466 611.521 and 611.532 and Subpart B of this Part only must not  
6467 exceed eight hours. The supplier is encouraged but not required to  
6468 hold samples below 10° C during transit.  
6469

6470 i) Fecal coliform procedure: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~  
6471 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 9221 E.  
6472

6473 BOARD NOTE: A-1 broth may be held up to seven  
6474 ~~daysthree months~~ in a tightly closed screwcap tube at 4° C  
6475 (39° F).  
6476

6477 ii) Fecal Coliform Membrane Filter Procedure: Standard  
6478 Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 9222 D.  
6479

6480 C) Heterotrophic bacteria.  
6481

6482 i) Pour plate method: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or  
6483 21<sup>st</sup> ed.: Method 9215 B.

6484  
6485 BOARD NOTE: The time from sample collection to  
6486 initiation of analysis must not exceed eight hours. The  
6487 supplier is encouraged but not required to hold samples  
6488 below 10° C during transit.

6489  
6490 ii) SimPlate method.

6491  
6492 D) Turbidity.  
6493 BOARD NOTE: Styrene divinyl benzene beads (e.g., AMCO-  
6494 AEPA-1 or equivalent) and stabilized formazin (e.g., Hach  
6495 StablCal™ or equivalent) are acceptable substitutes for formazin.

6496  
6497  
6498 i) Nephelometric method: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~  
6499 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 2130 B.

6500  
6501 ii) Nephelometric method: USEPA Environmental Inorganic  
6502 Methods: Method 180.1

6503  
6504 iii) GLI Method 2.

6505  
6506 iv) Hach FilterTrak Method 10133.

6507  
6508 E) Temperature: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.:  
6509 Method 2550.

6510  
6511 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended  
6512 the entries for total coliforms, fecal coliforms, heterotrophic bacteria, turbidity,  
6513 and temperature at corresponding 40 CFR 141.74(a)(1) to allow the use of  
6514 Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 2130 B (as  
6515 approved in 2001); Method 9215 B (as approved in 2000); Method 9221 A, B,  
6516 and C (as approved in 1999); Method 9222 A, B, C, and D (as approved in 1997);  
6517 and Method 9223 B (as approved in 1997). The Board has instead cited to the  
6518 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater  
6519 (the printed version of Standard Methods), since the versions of Method 2130,  
6520 Method 9215, Method 9221, Method 9222, and Method 9223 that appear in that  
6521 printed volume are those cited by USEPA as acceptable for use. USEPA later  
6522 added Method 2130 B; Method 9215 B; Method 9221 A, B, C, and E; Method  
6523 9222 A, B, C, and D; and Method 9223 from the 21<sup>st</sup> edition of Standard Methods



6524 as an approved alternative method in appendix A to subpart C, added on June 3,  
 6525 2008 (at 73 Fed. Reg. 31616).

6526  
 6527 b) A supplier must measure residual disinfectant concentrations with one of the  
 6528 following analytical methods ~~from Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, or 20<sup>th</sup> ed. (the~~  
 6529 ~~method for ozone, Method 4500-O<sub>3</sub>B, appears only in the 18<sup>th</sup> and 19<sup>th</sup> editions):~~

- 6530  
 6531 1) Free chlorine.  
 6532  
 6533 A) Amperometric Titration: ~~Method 4500-C1 D.~~  
 6534  
 6535 i) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
 6536 4500-C1 D.  
 6537  
 6538 ii) ASTM Method D 1253-03.  
 6539  
 6540 B) DPD Ferrous Titrimetric: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or  
 6541 21<sup>st</sup> ed.: Method 4500-C1 F.  
 6542  
 6543 C) DPD Colimetric: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed.:  
 6544 Method 4500-C1 G.  
 6545  
 6546 D) Syringaldazine (FACTS): Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or  
 6547 21<sup>st</sup> ed.: Method 4500-C1 H.

- 6548  
 6549 2) Total chlorine.  
 6550  
 6551 A) Amperometric Titration: ~~Method 4500-C1 D.~~  
 6552  
 6553 i) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
 6554 4500-C1 D.  
 6555  
 6556 ii) ASTM Method D 1253-03.  
 6557  
 6558 B) Amperometric Titration (low level measurement): Standard  
 6559 Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 4500-C1 E.  
 6560  
 6561 C) DPD Ferrous Titrimetric: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or  
 6562 21<sup>st</sup> ed.: Method 4500-C1 F.  
 6563  
 6564 D) DPD Colimetric: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed.:  
 6565 Method 4500-C1 G.  
 6566

- 6567 E) Iodometric Electrode: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup>  
6568 ed.: Method 4500-Cl I.  
6569  
6570 3) Chlorine dioxide.  
6571  
6572 A) Amperometric Titration: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup>  
6573 ed.: Method 4500-ClO<sub>2</sub> C or E.  
6574  
6575 B) DPD Method: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed.:  
6576 Method 4500-ClO<sub>2</sub> D.  
6577  
6578 C) Spectrophotometric: USEPA OGWDW Methods, Method 327.0.  
6579  
6580 4) Ozone: Indigo Method: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, or 21<sup>st</sup> ed.:  
6581 Method 4500-O<sub>3</sub> B.  
6582  
6583 5) Alternative test methods: The Agency may grant a SEP pursuant to  
6584 Section 611.110 that allows a supplier to use alternative chlorine test  
6585 methods as follows:  
6586  
6587 A) DPD colorimetric test kits: Residual disinfectant concentrations  
6588 for free chlorine and combined chlorine may also be measured by  
6589 using DPD colorimetric test kits.  
6590  
6591 B) Continuous monitoring for free and total chlorine: Free and total  
6592 chlorine residuals may be measured continuously by adapting a  
6593 specified chlorine residual method for use with a continuous  
6594 monitoring instrument, provided the chemistry, accuracy, and  
6595 precision remain the same. Instruments used for continuous  
6596 monitoring must be calibrated with a grab sample measurement at  
6597 least every five days or as otherwise provided by the Agency.  
6598

6599 BOARD NOTE: Suppliers may use a five-tube test or a 10-tube  
6600 test.  
6601

6602 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended  
6603 the entries for free chlorine, total chlorine, chlorine dioxide, and ozone at  
6604 corresponding 40 CFR 141.74(a)(2) to allow the use of Standard Methods Online  
6605 (at [www.standardmethods.org](http://www.standardmethods.org)), Method 4500-Cl D, E, F, G, and H (as approved  
6606 in 2000); Method 4500-ClO<sub>2</sub> C and E (as approved in 2000); and Method 4500-  
6607 O<sub>3</sub> B (as approved in 1997). The Board has instead cited to the 21<sup>st</sup> edition of  
6608 Standard Methods for the Examination of Water and Wastewater (the printed  
6609 version of Standard Methods), since the versions of Method 4500-Cl, Method

6610 4500-ClO<sub>2</sub>, and Method 4500-O<sub>3</sub> that appear in that printed volume are those  
 6611 cited by USEPA as acceptable for use. USEPA later added Method 4500-Cl D, E,  
 6612 F, G, and H; Method 4500-ClO<sub>2</sub> C and E; and Method 4500-O<sub>3</sub> B from the 21<sup>st</sup>  
 6613 edition of Standard Methods as an approved alternative method in appendix A to  
 6614 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).  
 6615

6616 BOARD NOTE: Derived from 40 CFR 141.74(a) (2007) and appendix A to 40 CFR  
 6617 141, as added at 73 Fed. Reg. 31616 (June 3, 2008)(2002).  
 6618

6619 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)  
 6620

6621 SUBPART N: INORGANIC MONITORING AND ANALYTICAL REQUIREMENTS  
 6622

6623 **Section 611.600 Applicability**  
 6624

6625 The following types of suppliers must conduct monitoring to determine compliance with the old  
 6626 MCLs in Section 611.300 and the revised MCLs in 611.301, as appropriate, in accordance with  
 6627 this Subpart N:  
 6628

- 6629 a) CWS suppliers.
- 6630
- 6631 b) NTNCWS suppliers.
- 6632
- 6633 c) Transient non-CWS suppliers to determine compliance with the nitrate and nitrite
- 6634 MCLs.
- 6635
- 6636 d) Detection limits. The following are detection limits for purposes of this Subpart
- 6637 N (MCLs from Section 611.301 are set forth for information purposes only):  
 6638

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 <sup>5</sup>
		Inductively-coupled plasma – mass spectrometry	0.0004
		Atomic absorption-gaseous	0.001

		hydride technique	
Arsenic	0.010 <sup>6</sup>	Atomic absorption-furnace technique	0.001
		Atomic absorption-furnace technique (stabilized temperature)	0.00005 <sup>7</sup>
		Atomic absorption-gaseous hydride technique	0.001
		Inductively-coupled plasma – mass spectrometry	0.0014 <sup>8</sup>
Asbestos	7 MFL <sup>1</sup>	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 <sup>5</sup>
		Inductively-coupled plasma <sup>2</sup>	0.0003
		Inductively-coupled plasma – mass spectrometry	0.0003
Cadmium	0.005	Atomic absorption-furnace technique	0.0001
		Inductively-coupled plasma	0.001

JCAR350611-0814065r01

Chromium	0.1	Atomic absorption-furnace technique	0.001
		Inductively-coupled plasma	0.007
		Inductively-coupled plasma	0.001
Cyanide	0.2	Distillation, spectrophotometric <sup>3</sup>	0.02
		Automated distillation, spectrophotometric <sup>3</sup>	0.005
		Distillation, selective electrode <sup>3</sup>	0.05
		UV, distillation, spectrophotometric	0.0005
		<u>Micro distillation, flow injection, Distillation, spectrophotometric</u>	0.0006
		<u>Ligand exchange with amperometry<sup>4</sup></u>	<u>0.0005</u>
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 <sup>5</sup>
		Inductively-coupled plasma <sup>2</sup>	0.005
		Inductively-coupled plasma – mass spectrometry	0.0005

Nitrate (as N)	10	Manual cadmium reduction	0.01
		Automated hydrazine reduction	0.01
		<u>Capillary ion electrophoresis</u>	<u>0.076</u>
		Automated cadmium reduction	0.05
		Ion-selective electrode	1
		Ion chromatography	0.01
Nitrite (as N)	1	Spectrophotometric	0.01
		Automated cadmium reduction	0.05
		Manual cadmium reduction	0.01
		Ion chromatography	0.004
		<u>Capillary ion electrophoresis</u>	<u>0.103</u>
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 <sup>5</sup>
		Inductively-coupled plasma – mass spectrometry	0.0003

Footnotes.

- <sup>1</sup> "MFL" means millions of fibers per liter less than 10  $\mu\text{m}$ .
- <sup>2</sup> Using a 2x preconcentration step as noted in Method 200.7. Lower MDLs may be achieved when using a 4x preconcentration.
- <sup>3</sup> 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 value for arsenic is effective January 23, 2006. Until then, the MCL is 0.05 mg/l.
- 7 The MDL reported for USEPA Method 200.9 (atomic absorption-platform furnace (stabilized temperature)) was determined using a 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.
- 8 Using selective ion monitoring, USEPA Method 200.8 (ICP-MS) is capable of obtaining an MDL of 0.0001 mg/l.
- 9 Measures total cyanides when UV-digester is used, and "free" cyanides when UV-digester is bypassed.

6639  
 6640 BOARD NOTE: Subsections (a) through (c) of this Section are derived from 40 CFR 141.23  
 6641 preamble ~~(2007)~~(2003) and subsection (d) of this Section is derived from 40 CFR 141.23  
 6642 (a)(4)(i) ~~(2007)~~ and appendix A to 40 CFR 141, as added at 73 Fed. Reg. 31616 (June 3,  
 6643 ~~2008~~)(2003). See the Board Note at Section 611.301(b) relating to the MCL for nickel.

6644  
 6645 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

6646  
 6647 **Section 611.611 Inorganic Analysis**

6648  
 6649 Analytical methods are from documents incorporated by reference in Section 611.102. These are  
 6650 mostly referenced by a short name defined by Section 611.102(a). Other abbreviations are  
 6651 defined in Section 611.101.

- 6652 a) Analysis for the following contaminants must be conducted using the following  
 6653 methods or an alternative approved pursuant to Section 611.480. Criteria for  
 6654 analyzing arsenic, chromium, copper, lead, nickel, selenium, sodium, and thallium  
 6655 with digestion or directly without digestion, and other analytical procedures, are  
 6656 contained in USEPA Technical Notes, incorporated by reference in Section  
 6657 611.102. ~~(This document also contains approved analytical test methods that  
 6658 remained available for compliance monitoring until July 1, 1996. These methods  
 6659 are not available for use after July 1, 1996.)~~

6660  
 6661  
 6662 BOARD NOTE: Because MDLs reported in USEPA Environmental Metals  
 6663 Methods 200.7 and 200.9 were determined using a 2x preconcentration step  
 6664 during sample digestion, MDLs determined when samples are analyzed by direct  
 6665 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, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed., Method 3120 B sample preconcentration using pneumatic nebulization may be required to achieve lower detection limits. Preconcentration may also be required for direct analysis of antimony, lead, and thallium by USEPA Environmental Metals Method 200.9; antimony and lead by Standard Methods, 18<sup>th</sup>, ~~or~~ 19<sup>th</sup>, or 21<sup>st</sup> ed., Method 3113 B; and lead by ASTM Method D3559-96 D or D3559-03 D unless multiple in-furnace depositions are made.

1) Alkalinity.

A) Titrimetric.

- i) ASTM Method D1067-92 B or D1067-02 B; or
- ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 2320 B.

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

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

2) Antimony.

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

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



- 6709 C) Atomic absorption, platform furnace technique: USEPA
- 6710 Environmental Metals Methods: Method 200.9.
- 6711
- 6712 D) Atomic absorption, furnace technique: Standard Methods, 18<sup>th</sup>, ~~or~~
- 6713 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3113 B.
- 6714

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

- 6728
- 6729 E) Axially viewed inductively-coupled plasma – atomic emission
- 6730 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.
- 6731

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

3) Arsenic.

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

- 6747
- 6748 A) Inductively-coupled plasma.
- 6749

BOARD NOTE: Effective January 23, 2006, a supplier may no longer employ analytical methods using the ICP-AES technology

because the detection limits for these methods are 0.008 mg/ℓ or higher. This restriction means that the two ICP-AES methods (USEPA Environmental Metals Method 200.7 and Standard Methods, Method 3120 B) approved for use for the MCL of 0.05 mg/ℓ may not be used for compliance determinations for the revised MCL of 0.010 mg/ℓ. However, prior to the 2005 through 2007 compliance period, a supplier may have compliance samples analyzed with these less sensitive methods.

- i) USEPA Environmental Metals Methods: Method 200.7; or
- ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for arsenic by inductively-coupled plasma in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 3120 B (as approved in 1999). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3120 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3120 B from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method for several other metals in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA, however, did not specifically add Method 2130 B as to arsenic in the June 3, 2008 action.

- B) Inductively-coupled plasma – mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.
- C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.
- D) Atomic absorption, furnace technique.
  - i) ASTM Method D2972-97 C or 2972-03 C; or
  - ii) Standard Methods, 18<sup>th</sup>, ~~or~~ 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3113 B.

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

E) Atomic absorption, hydride technique.

- i) ASTM Method D2972-97 B or 2972-03 B; or
- ii) Standard Methods, 18<sup>th</sup>, ~~or~~ 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3114 B.

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

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

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

- 6836  
6837  
6838  
6839  
6840 4) Asbestos: Transmission electron microscopy: USEPA Asbestos  
6841 Methods-100.1 and USEPA Asbestos Methods-100.2.  
6842  
6843 5) Barium.  
6844  
6845 A) Inductively-coupled plasma.  
6846  
6847 i) USEPA Environmental Metals Methods: Method 200.7; or  
6848  
6849 ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
6850 3120 B.  
6851

6852 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
6853 11200), USEPA amended the entry for barium by  
6854 inductively-coupled plasma in the table at corresponding 40  
6855 CFR 141.23(k)(1) to allow the use of Standard Methods  
6856 Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 3120 B (as  
6857 approved in 1999). The Board has instead cited to the 21<sup>st</sup>  
6858 edition of Standard Methods for the Examination of Water  
6859 and Wastewater (the printed version of Standard Methods),  
6860 since the version of Method 3120 that appears in that  
6861 printed volume is that cited by USEPA as acceptable for  
6862 use. USEPA later added Method 3120 B from the 21<sup>st</sup>  
6863 edition of Standard Methods as an approved alternative  
6864 method in appendix A to subpart C, added on June 3, 2008  
6865 (at 73 Fed. Reg. 31616).  
6866

- 6867 B) Inductively-coupled plasma – mass spectrometry: USEPA  
6868 Environmental Metals Methods: Method 200.8.  
6869  
6870 C) Atomic absorption, direct aspiration technique: Standard Methods,  
6871 18<sup>th</sup>, ~~or~~ 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3111 D.  
6872

6873 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
6874 USEPA amended the entry for barium by atomic absorption, direct  
6875 aspiration technique, in the table at corresponding 40 CFR  
6876 141.23(k)(1) to allow the use of Standard Methods Online (at  
6877 [www.standardmethods.org](http://www.standardmethods.org)), Method 3111 D (as approved in  
6878 1999). The Board has instead cited to the 21<sup>st</sup> edition of Standard

6879 Methods for the Examination of Water and Wastewater (the  
6880 printed version of Standard Methods), since the version of Method  
6881 3111 that appears in that printed volume is that cited by USEPA as  
6882 acceptable for use. USEPA later added Method 3111 D from the  
6883 21<sup>st</sup> edition of Standard Methods as an approved alternative  
6884 method in appendix A to subpart C, added on June 3, 2008 (at 73  
6885 Fed. Reg. 31616).

- 6886  
6887 D) Atomic absorption, furnace technique: Standard Methods, 18<sup>th</sup>,  
6888 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3113 B.

6889  
6890 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
6891 USEPA amended the entry for barium by atomic absorption,  
6892 furnace technique, in the table at corresponding 40 CFR  
6893 141.23(k)(1) to allow the use of Standard Methods Online (at  
6894 www.standardmethods.org), Method 3113 B (as approved in  
6895 1999). The Board has instead cited to the 21<sup>st</sup> edition of Standard  
6896 Methods for the Examination of Water and Wastewater (the  
6897 printed version of Standard Methods), since the version of Method  
6898 3113 that appears in that printed volume is that cited by USEPA as  
6899 acceptable for use. USEPA later added Method 3113 B from the  
6900 21<sup>st</sup> edition of Standard Methods as an approved alternative  
6901 method in appendix A to subpart C, added on June 3, 2008 (at 73  
6902 Fed. Reg. 31616).

- 6903  
6904 E) Axially viewed inductively-coupled plasma – atomic emission  
6905 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

6906  
6907 BOARD NOTE: USEPA added this method as an approved  
6908 alternative method in appendix A to subpart C of 40 CFR 141,  
6909 added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 6910 6) Beryllium.

- 6911 A) Inductively-coupled plasma.

- 6912  
6913 i) USEPA Environmental Metals Methods: Method 200.7; or  
6914  
6915 ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, or 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
6916  
6917 3120 B.  
6918  
6919

6920 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
6921 11200), USEPA amended the entry for beryllium by

6922 inductively-coupled plasma in the table at corresponding 40  
 6923 CFR 141.23(k)(1) to allow the use of Standard Methods  
 6924 Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 3120 B (as  
 6925 approved in 1999). The Board has instead cited to the 21<sup>st</sup>  
 6926 edition of Standard Methods for the Examination of Water  
 6927 and Wastewater (the printed version of Standard Methods),  
 6928 since the version of Method 3120 that appears in that  
 6929 printed volume is that cited by USEPA as acceptable for  
 6930 use. USEPA later added Method 3120 B from the 21<sup>st</sup>  
 6931 edition of Standard Methods as an approved alternative  
 6932 method in appendix A to subpart C, added on June 3, 2008  
 6933 (at 73 Fed. Reg. 31616).  
 6934

6935 B) Inductively-coupled plasma – mass spectrometry: USEPA  
 6936 Environmental Metals Methods: Method 200.8.

6937  
 6938 C) Atomic absorption, platform furnace technique: USEPA  
 6939 Environmental Metals Methods: Method 200.9.

6940 D) Atomic absorption, furnace technique.

6941  
 6942  
 6943 i) ASTM Method D3645-97 B or D3645-03 B; or

6944  
 6945 ii) Standard Methods, 18<sup>th</sup>, ~~or~~ 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3113  
 6946 B.

6947  
 6948 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 6949 11200), USEPA amended the entry for beryllium by atomic  
 6950 absorption, furnace technique, in the table at corresponding  
 6951 40 CFR 141.23(k)(1) to allow the use of Standard Methods  
 6952 Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 3113 B (as  
 6953 approved in 1999). The Board has instead cited to the 21<sup>st</sup>  
 6954 edition of Standard Methods for the Examination of Water  
 6955 and Wastewater (the printed version of Standard Methods),  
 6956 since the version of Method 3113 that appears in that  
 6957 printed volume is that cited by USEPA as acceptable for  
 6958 use. USEPA later added Method 3113 B from the 21<sup>st</sup>  
 6959 edition of Standard Methods as an approved alternative  
 6960 method in appendix A to subpart C, added on June 3, 2008  
 6961 (at 73 Fed. Reg. 31616).  
 6962

6963 E) Axially viewed inductively-coupled plasma – atomic emission  
 6964 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

6965  
6966 BOARD NOTE: USEPA added this method as an approved  
6967 alternative method in appendix A to subpart C of 40 CFR 141,  
6968 added on June 3, 2008 (at 73 Fed. Reg. 31616).  
6969

6970 7) Cadmium.

6971  
6972 A) Inductively-coupled plasma arc furnace: USEPA Environmental  
6973 Metals Methods: Method 200.7.

6974  
6975 B) Inductively-coupled plasma – mass spectrometry: USEPA  
6976 Environmental Metals Methods: Method 200.8.

6977  
6978 C) Atomic absorption, platform furnace technique: USEPA  
6979 Environmental Metals Methods: Method 200.9.

6980  
6981 D) Atomic absorption, furnace technique: Standard Methods, 18<sup>th</sup>, or  
6982 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3113 B.

6983  
6984 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
6985 USEPA amended the entry for cadmium by atomic absorption,  
6986 furnace technique, in the table at corresponding 40 CFR  
6987 141.23(k)(1) to allow the use of Standard Methods Online (at  
6988 www.standardmethods.org), Method 3113 B (as approved in  
6989 1999). The Board has instead cited to the 21<sup>st</sup> edition of Standard  
6990 Methods for the Examination of Water and Wastewater (the  
6991 printed version of Standard Methods), since the version of Method  
6992 3113 that appears in that printed volume is that cited by USEPA as  
6993 acceptable for use. USEPA later added Method 3113 B from the  
6994 21<sup>st</sup> edition of Standard Methods as an approved alternative  
6995 method in appendix A to subpart C, added on June 3, 2008 (at 73  
6996 Fed. Reg. 31616).  
6997

6998 E) Axially viewed inductively-coupled plasma – atomic emission  
6999 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.  
7000

7001 BOARD NOTE: USEPA added this method as an approved  
7002 alternative method in appendix A to subpart C of 40 CFR 141,  
7003 added on June 3, 2008 (at 73 Fed. Reg. 31616).  
7004

7005 8) Calcium.

7006 A) EDTA titrimetric.  
7007

7008  
7009  
7010  
7011  
7012  
7013  
7014  
7015  
7016  
7017  
7018  
7019  
7020  
7021  
7022  
7023  
7024  
7025  
7026  
7027  
7028  
7029  
7030  
7031  
7032  
7033  
7034  
7035  
7036  
7037  
7038  
7039  
7040  
7041  
7042  
7043  
7044  
7045  
7046  
7047  
7048  
7049  
7050

- i) ASTM Method D511-93 A or D511-03 A; or
- ii) Standard Methods, 18<sup>th</sup> or 19<sup>th</sup>, or 20<sup>th</sup> ed.: Method 3500-Ca D or Standard Methods, 20<sup>th</sup> or 21<sup>st</sup> ed.: Method 3500-Ca B.

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

B) Atomic absorption, direct aspiration.

- i) ASTM Method D511-93 B or D511-03 B; or
- ii) Standard Methods, 18<sup>th</sup>, or 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3111 B.

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



7051  
7052  
7053  
7054  
7055  
7056  
7057  
7058  
7059  
7060  
7061  
7062  
7063  
7064  
7065  
7066  
7067  
7068  
7069  
7070  
7071  
7072  
7073  
7074  
7075  
7076  
7077  
7078  
7079  
7080  
7081  
7082  
7083  
7084  
7085  
7086  
7087  
7088  
7089  
7090  
7091  
7092  
7093

- C) Inductively-coupled plasma.
  - i) USEPA Environmental Metals Methods: Method 200.7; or
  - ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3120 B.

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

- D) Ion chromatography: ASTM Method D6919-03.
- E) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

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

- 9) Chromium.
  - A) Inductively-coupled plasma.
    - i) USEPA Environmental Metals Methods: Method 200.7; or
    - ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3120 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for chromium by

7094 inductively-coupled plasma in the table at corresponding 40  
 7095 CFR 141.23(k)(1) to allow the use of Standard Methods  
 7096 Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 3120 B (as  
 7097 approved in 1999). The Board has instead cited to the 21<sup>st</sup>  
 7098 edition of Standard Methods for the Examination of Water  
 7099 and Wastewater (the printed version of Standard Methods),  
 7100 since the version of Method 3120 that appears in that  
 7101 printed volume is that cited by USEPA as acceptable for  
 7102 use. USEPA later added Method 3120 B from the 21<sup>st</sup>  
 7103 edition of Standard Methods as an approved alternative  
 7104 method in appendix A to subpart C, added on June 3, 2008  
 7105 (at 73 Fed. Reg. 31616).

7106  
 7107 B) Inductively-coupled plasma – mass spectrometry: USEPA  
 7108 Environmental Metals Methods: Method 200.8.

7109  
 7110 C) Atomic absorption, platform furnace technique: USEPA  
 7111 Environmental Metals Methods: Method 200.9.

7112  
 7113 D) Atomic absorption, furnace technique: Standard Methods, 18<sup>th</sup>, or  
 7114 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3113 B.

7115  
 7116 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 7117 USEPA amended the entry for chromium by atomic absorption,  
 7118 furnace technique, in the table at corresponding 40 CFR  
 7119 141.23(k)(1) to allow the use of Standard Methods Online (at  
 7120 [www.standardmethods.org](http://www.standardmethods.org)), Method 3113 B (as approved in  
 7121 1999). The Board has instead cited to the 21<sup>st</sup> edition of Standard  
 7122 Methods for the Examination of Water and Wastewater (the  
 7123 printed version of Standard Methods), since the version of Method  
 7124 3113 that appears in that printed volume is that cited by USEPA as  
 7125 acceptable for use. USEPA later added Method 3113 B from the  
 7126 21<sup>st</sup> edition of Standard Methods as an approved alternative  
 7127 method in appendix A to subpart C, added on June 3, 2008 (at 73  
 7128 Fed. Reg. 31616).

7129  
 7130 E) Axially viewed inductively-coupled plasma – atomic emission  
 7131 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

7132  
 7133 BOARD NOTE: USEPA added this method as an approved  
 7134 alternative method in appendix A to subpart C of 40 CFR 141,  
 7135 added on June 3, 2008 (at 73 Fed. Reg. 31616).

7136

7137  
7138  
7139  
7140  
7141  
7142  
7143  
7144  
7145  
7146  
7147  
7148  
7149  
7150  
7151  
7152  
7153  
7154  
7155  
7156  
7157  
7158  
7159  
7160  
7161  
7162  
7163  
7164  
7165  
7166  
7167  
7168  
7169  
7170  
7171  
7172  
7173  
7174  
7175  
7176  
7177  
7178  
7179

10) Copper.

A) Atomic absorption, furnace technique.

- i) ASTM Method D1688-95 C or D1688-02 C; or
- ii) Standard Methods, 18<sup>th</sup>, ~~or~~ 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3113 B.

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

B) Atomic absorption, direct aspiration.

- i) ASTM Method D1688-95 A or 1688-02 A; or
- ii) Standard Methods, 18<sup>th</sup>, ~~or~~ 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3111 B.

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

method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- C) Inductively-coupled plasma.
  - i) USEPA Environmental Metals Methods: Method 200.7; or
  - ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3120 B.

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

- D) Inductively-coupled plasma – mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.
- E) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.
- F) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

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

- 11) Conductivity; Conductance.
  - A) ASTM Method D1125-95(1999) A; or
  - B) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 2510 B.

7223  
7224  
7225  
7226  
7227  
7228  
7229  
7230  
7231  
7232  
7233  
7234  
7235  
7236  
7237  
7238  
7239  
7240  
7241  
7242  
7243  
7244  
7245  
7246  
7247  
7248  
7249  
7250  
7251  
7252  
7253  
7254  
7255  
7256  
7257  
7258  
7259  
7260  
7261  
7262  
7263  
7264

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

12) Cyanide.

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

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

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

ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 4500-CN G.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for cyanide by spectrophotometric, amenable, in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-CN G (as approved in 1999). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-CN that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-CN G from the 21<sup>st</sup> edition of Standard Methods as an approved

7265  
7266  
7267  
7268  
7269  
7270  
7271  
7272  
7273  
7274  
7275  
7276  
7277  
7278  
7279  
7280  
7281  
7282  
7283  
7284  
7285  
7286  
7287  
7288  
7289  
7290  
7291  
7292  
7293  
7294  
7295  
7296  
7297  
7298  
7299  
7300  
7301  
7302  
7303  
7304  
7305  
7306  
7307

alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

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

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

ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or 20<sup>th</sup>~~, or 21<sup>st</sup> ed.: Method 4500-CN E; or

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

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

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

D) Selective electrode: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or 20<sup>th</sup>~~, or 21<sup>st</sup> ed.: Method 4500-CN F.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for cyanide by selective electrode in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-CN F (as approved in 1999). The Board has instead cited to

7308 the 21<sup>st</sup> edition of Standard Methods for the Examination of Water  
 7309 and Wastewater (the printed version of Standard Methods), since  
 7310 the version of Method 4500-CN that appears in that printed  
 7311 volume is that cited by USEPA as acceptable for use. USEPA  
 7312 later added Method 4500-CN F from the 21<sup>st</sup> edition of Standard  
 7313 Methods as an approved alternative method in appendix A to  
 7314 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

7315  
 7316 E) UV/Distillation/Spectrophotometric: Kelada 01.

7317  
 7318 F) Microdistillation/Flow Injection/Spectrophotometric:  
 7319 Distillation/Spectrophotometric: QuickChem 10-204-00-1-X.

7320  
 7321 G) Ligand exchange and amperometry.

7322  
 7323 i) ASTM Method D6888-03.

7324  
 7325 ii) OI Analytical Method OIA-1677 DW.

7326  
 7327 13) Fluoride.

7328  
 7329 A) Ion Chromatography.

7330  
 7331 i) USEPA Environmental Inorganic Methods: Method 300.0  
 7332 or Method 300.1;

7333  
 7334 ii) ASTM Method D4327-97 or D4327-03; or

7335  
 7336 iii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
 7337 4110 B.

7338  
 7339 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 7340 11200), USEPA amended the entry for fluoride by ion  
 7341 chromatography in the table at corresponding 40 CFR  
 7342 141.23(k)(1) to allow the use of Standard Methods Online  
 7343 (at www.standardmethods.org), Method 4110 B (as  
 7344 approved in 2000). The Board has instead cited to the 21<sup>st</sup>  
 7345 edition of Standard Methods for the Examination of Water  
 7346 and Wastewater (the printed version of Standard Methods),  
 7347 since the version of Method 4110 that appears in that  
 7348 printed volume is that cited by USEPA as acceptable for  
 7349 use. USEPA later added Method 4110 B from the 21<sup>st</sup>  
 7350 edition of Standard Methods as an approved alternative

7351 method in appendix A to subpart C, added on June 3, 2008  
 7352 (at 73 Fed. Reg. 31616).

7353  
 7354 B) Manual distillation, colorimetric SPADNS: Standard Methods,  
 7355 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 4500-F<sup>-</sup> B and D.  
 7356

7357 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 7358 USEPA amended the entry for fluoride by manual distillation,  
 7359 colorimetry SPADNS, in the table at corresponding 40 CFR  
 7360 141.23(k)(1) to allow the use of Standard Methods Online (at  
 7361 www.standardmethods.org), Method 4500-F<sup>-</sup> B and D (as  
 7362 approved in 1997). The Board has instead cited to the 21<sup>st</sup> edition  
 7363 of Standard Methods for the Examination of Water and  
 7364 Wastewater (the printed version of Standard Methods), since the  
 7365 version of Method 4500-F<sup>-</sup> that appears in that printed volume is  
 7366 that cited by USEPA as acceptable for use. USEPA later added  
 7367 Method 4500-F<sup>-</sup> B and D from the 21<sup>st</sup> edition of Standard  
 7368 Methods as an approved alternative method in appendix A to  
 7369 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).  
 7370

7371 C) Manual electrode.  
 7372

7373 i) ASTM Method D1179-93 B, D1179-99 B, or D1179-04 B;  
 7374 or  
 7375

7376 BOARD NOTE: USEPA added ASTM Method D1179-04  
 7377 B as an approved alternative method in appendix A to  
 7378 subpart C of 40 CFR 141, added on June 3, 2008 (at 73  
 7379 Fed. Reg. 31616).  
 7380

7381 ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
 7382 4500-F<sup>-</sup> C.  
 7383

7384 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 7385 11200), USEPA amended the entry for fluoride by manual  
 7386 electrode in the table at corresponding 40 CFR  
 7387 141.23(k)(1) to allow the use of Standard Methods Online  
 7388 (at www.standardmethods.org), Method 4500-F<sup>-</sup> C (as  
 7389 approved in 1997). The Board has instead cited to the 21<sup>st</sup>  
 7390 edition of Standard Methods for the Examination of Water  
 7391 and Wastewater (the printed version of Standard Methods),  
 7392 since the version of Method 4500-F<sup>-</sup> that appears in that  
 7393 printed volume is that cited by USEPA as acceptable for



7394 use. USEPA later added Method 4500-F<sup>-</sup> C from the 21<sup>st</sup>  
 7395 edition of Standard Methods as an approved alternative  
 7396 method in appendix A to subpart C, added on June 3, 2008  
 7397 (at 73 Fed. Reg. 31616).

7398  
 7399 D) Automated electrode: Technicon Methods: Method 380-75WE.

7400  
 7401 E) Automated alizarin.

7402  
 7403 i) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
 7404 4500-F<sup>-</sup> E; or

7405  
 7406 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 7407 11200), USEPA amended the entry for fluoride by  
 7408 automated alizarin in the table at corresponding 40 CFR  
 7409 141.23(k)(1) to allow the use of Standard Methods Online  
 7410 (at www.standardmethods.org), Method 4500-F<sup>-</sup> E (as  
 7411 approved in 1997). The Board has instead cited to the 21<sup>st</sup>  
 7412 edition of Standard Methods for the Examination of Water  
 7413 and Wastewater (the printed version of Standard Methods),  
 7414 since the version of Method 4500-F<sup>-</sup> that appears in that  
 7415 printed volume is that cited by USEPA as acceptable for  
 7416 use. USEPA later added Method 4500-F<sup>-</sup> E from the 21<sup>st</sup>  
 7417 edition of Standard Methods as an approved alternative  
 7418 method in appendix A to subpart C, added on June 3, 2008  
 7419 (at 73 Fed. Reg. 31616).

7420  
 7421 ii) Technicon Methods: Method 129-71W.

7422  
 7423 F) Capillary ion electrophoresis: ASTM Method D6508-00(2005)e2  
 7424 (rev. 2).

7425  
 7426 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 7427 USEPA amended the entry for fluoride to add capillary ion  
 7428 electrophoresis in the table at corresponding 40 CFR 141.23(k)(1)  
 7429 to allow the use of "Waters Method D6508, Rev. 2." The Board  
 7430 attempt to locate a copy of the method disclosed that it is an  
 7431 ASTM method originally approved in 2000 and revised in 2005.  
 7432 The Board has cited to the ASTM Method D6508-00(2005)e2.

7433  
 7434 14) Lead.

7435  
 7436 A) Atomic absorption, furnace technique.

7437  
7438  
7439  
7440  
7441  
7442  
7443  
7444  
7445  
7446  
7447  
7448  
7449  
7450  
7451  
7452  
7453  
7454  
7455  
7456  
7457  
7458  
7459  
7460  
7461  
7462  
7463  
7464  
7465  
7466  
7467  
7468  
7469  
7470  
7471  
7472  
7473  
7474  
7475  
7476  
7477  
7478  
7479

- i) ASTM Method D3559-96 D or D3559-03 D; or
- ii) Standard Methods, 18<sup>th</sup>, ~~19<sup>th</sup>~~, or 21<sup>st</sup> ed.: Method 3113 B.

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

- B) Inductively-coupled plasma – mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.
- C) Atomic absorption, platform furnace technique: USEPA Environmental Metals Methods: Method 200.9.
- D) Differential Pulse Anodic Stripping Voltammetry: Palintest Method 1001.
- E) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

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

15) Magnesium.

- A) Atomic absorption.
  - i) ASTM Method D511-93 B or D511-03 B; or

- 7480 ii) Standard Methods, 18<sup>th</sup>, ~~or~~ 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3111
- 7481 B.

7482  
7483 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
7484 11200), USEPA amended the entry for magnesium by  
7485 atomic absorption in the table at corresponding 40 CFR  
7486 141.23(k)(1) to allow the use of Standard Methods Online  
7487 (at [www.standardmethods.org](http://www.standardmethods.org)), Method 3111 B (as  
7488 approved in 1999). The Board has instead cited to the 21<sup>st</sup>  
7489 edition of Standard Methods for the Examination of Water  
7490 and Wastewater (the printed version of Standard Methods),  
7491 since the version of Method 3111 that appears in that  
7492 printed volume is that cited by USEPA as acceptable for  
7493 use. USEPA later added Method 3111 B from the 21<sup>st</sup>  
7494 edition of Standard Methods as an approved alternative  
7495 method in appendix A to subpart C, added on June 3, 2008  
7496 (at 73 Fed. Reg. 31616).

7497  
7498 B) Inductively-coupled plasma.

- 7499
- 7500 i) USEPA Environmental Metals Methods: Method 200.7; or
- 7501
- 7502 ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method
- 7503 3120 B.

7504  
7505 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
7506 11200), USEPA amended the entry for magnesium by  
7507 inductively-coupled plasma in the table at corresponding 40  
7508 CFR 141.23(k)(1) to allow the use of Standard Methods  
7509 Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 3120 B (as  
7510 approved in 1999). The Board has instead cited to the 21<sup>st</sup>  
7511 edition of Standard Methods for the Examination of Water  
7512 and Wastewater (the printed version of Standard Methods),  
7513 since the version of Method 3120 that appears in that  
7514 printed volume is that cited by USEPA as acceptable for  
7515 use. USEPA later added Method 3120 B from the 21<sup>st</sup>  
7516 edition of Standard Methods as an approved alternative  
7517 method in appendix A to subpart C, added on June 3, 2008  
7518 (at 73 Fed. Reg. 31616).

7519  
7520 C) Complexation titrimetric.

- 7521
- 7522 i) ASTM Method D511-93 A or D511-03 A; or

- 7523  
7524  
7525  
7526  
7527  
7528  
7529  
7530  
7531  
7532  
7533  
7534  
7535  
7536  
7537  
7538  
7539  
7540  
7541  
7542  
7543  
7544  
7545  
7546  
7547  
7548  
7549  
7550  
7551  
7552  
7553  
7554  
7555  
7556  
7557  
7558  
7559  
7560  
7561  
7562  
7563  
7564  
7565
- ii) Standard Methods, 18<sup>th</sup> or 19<sup>th</sup> ed.: Method 3500-Mg E or Standard Methods, 20<sup>th</sup> or 21<sup>st</sup> ed.: Method 3500-Mg B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for magnesium by complexation titrimetric in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 3500-Mg B (as approved in 1997). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3500-Mg that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3500-Mg B from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
  - iii) ~~Standard Methods, 20th ed.: Method 3500-Mg B.~~
  - D) Ion chromatography: ASTM Method D6919-03.
  - E) Axially viewed inductively-coupled plasma – atomic emission spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

BOARD NOTE: USEPA added this method as an approved alternative method in appendix A to subpart C of 40 CFR 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).
- 16) Mercury.
- A) Manual cold vapor technique.
    - i) USEPA Environmental Metals Methods: Method 245.1;
    - ii) ASTM Method D3223-97 or D3223-02; or
    - iii) Standard Methods, 18<sup>th</sup>, ~~19<sup>th</sup>~~, or 21<sup>st</sup> ed.: Method 3112 B.

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for mercury by manual

cold vapor technique in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 3112 B (as approved in 1999). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 3112 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 3112 B from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) Automated cold vapor technique: USEPA Inorganic Methods: Method 245.2.

C) Inductively-coupled plasma – mass spectrometry: USEPA Environmental Metals Methods: Method 200.8.

17) Nickel.

A) Inductively-coupled plasma.

i) USEPA Environmental Metals Methods: Method 200.7; or

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

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

- 7609 B) Inductively-coupled plasma – mass spectrometry: USEPA  
 7610 Environmental Metals Methods: Method 200.8.  
 7611
- 7612 C) Atomic absorption, platform furnace technique: USEPA  
 7613 Environmental Metals Methods: Method 200.9.  
 7614
- 7615 D) Atomic absorption, direct aspiration technique: Standard Methods,  
 7616 18<sup>th</sup>, or 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3111 B.  
 7617
- 7618 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 7619 USEPA amended the entry for nickel by atomic absorption, direct  
 7620 aspiration technique, in the table at corresponding 40 CFR  
 7621 141.23(k)(1) to allow the use of Standard Methods Online (at  
 7622 www.standardmethods.org), Method 3111 B (as approved in  
 7623 1999). The Board has instead cited to the 21<sup>st</sup> edition of Standard  
 7624 Methods for the Examination of Water and Wastewater (the  
 7625 printed version of Standard Methods), since the version of Method  
 7626 3111 that appears in that printed volume is that cited by USEPA as  
 7627 acceptable for use. USEPA later added Method 3111 B from the  
 7628 21<sup>st</sup> edition of Standard Methods as an approved alternative  
 7629 method in appendix A to subpart C, added on June 3, 2008 (at 73  
 7630 Fed. Reg. 31616).  
 7631
- 7632 E) Atomic absorption, furnace technique: Standard Methods, 18<sup>th</sup>, or  
 7633 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3113 B.  
 7634
- 7635 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 7636 USEPA amended the entry for nickel by atomic absorption,  
 7637 furnace technique, in the table at corresponding 40 CFR  
 7638 141.23(k)(1) to allow the use of Standard Methods Online (at  
 7639 www.standardmethods.org), Method 3113 B (as approved in  
 7640 1999). The Board has instead cited to the 21<sup>st</sup> edition of Standard  
 7641 Methods for the Examination of Water and Wastewater (the  
 7642 printed version of Standard Methods), since the version of Method  
 7643 3113 that appears in that printed volume is that cited by USEPA as  
 7644 acceptable for use. USEPA later added Method 3113 B from the  
 7645 21<sup>st</sup> edition of Standard Methods as an approved alternative  
 7646 method in appendix A to subpart C, added on June 3, 2008 (at 73  
 7647 Fed. Reg. 31616).  
 7648
- 7649 F) Axially viewed inductively-coupled plasma – atomic emission  
 7650 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.  
 7651

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

18) Nitrate.

A) Ion chromatography.

- i) USEPA Environmental Inorganic Methods: Method 300.0 or Method 300.1;
- ii) ASTM Method D4327-97 or D4327-03;
- iii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 4110 B; or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrate by ion chromatography in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 4110 B (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4110 that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4110 B from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- iv) Waters Test Method B-1011, available from Millipore Corporation.

B) Automated cadmium reduction.

- i) USEPA Environmental Inorganic Methods: Method 353.2;
- ii) ASTM Method D3867-90 A; or
- iii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 4500-NO<sub>3</sub><sup>-</sup> F.

7695 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 7696 11200), USEPA amended the entry for nitrate by  
 7697 automated cadmium reduction in the table at corresponding  
 7698 40 CFR 141.23(k)(1) to allow the use of Standard Methods  
 7699 Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 4500-NO<sub>3</sub><sup>-</sup>  
 7700 F (as approved in 2000). The Board has instead cited to the  
 7701 21<sup>st</sup> edition of Standard Methods for the Examination of  
 7702 Water and Wastewater (the printed version of Standard  
 7703 Methods), since the version of Method 4500-NO<sub>3</sub><sup>-</sup> that  
 7704 appears in that printed volume is that cited by USEPA as  
 7705 acceptable for use. USEPA later added Method 4500-NO<sub>3</sub><sup>-</sup>  
 7706 F from the 21<sup>st</sup> edition of Standard Methods as an approved  
 7707 alternative method in appendix A to subpart C, added on  
 7708 June 3, 2008 (at 73 Fed. Reg. 31616).  
 7709

7710 C) Ion selective electrode.

- 7711  
 7712 i) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
 7713 4500-NO<sub>3</sub><sup>-</sup> D; or  
 7714

7715 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 7716 11200), USEPA amended the entry for nitrate by ion  
 7717 selective electrode in the table at corresponding 40 CFR  
 7718 141.23(k)(1) to allow the use of Standard Methods Online  
 7719 (at [www.standardmethods.org](http://www.standardmethods.org)), Method 4500-NO<sub>3</sub><sup>-</sup> D (as  
 7720 approved in 2000). The Board has instead cited to the 21<sup>st</sup>  
 7721 edition of Standard Methods for the Examination of Water  
 7722 and Wastewater (the printed version of Standard Methods),  
 7723 since the version of Method 4500-NO<sub>3</sub><sup>-</sup> that appears in that  
 7724 printed volume is that cited by USEPA as acceptable for  
 7725 use. USEPA later added Method 4500-NO<sub>3</sub><sup>-</sup> D from the  
 7726 21<sup>st</sup> edition of Standard Methods as an approved alternative  
 7727 method in appendix A to subpart C, added on June 3, 2008  
 7728 (at 73 Fed. Reg. 31616).  
 7729

- 7730 ii) Technical Bulletin 601.  
 7731

7732 D) Manual cadmium reduction.

- 7733  
 7734 i) ASTM Method D3867-90 B; or  
 7735  
 7736 ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
 7737 4500-NO<sub>3</sub><sup>-</sup> E.



7738  
7739  
7740  
7741  
7742  
7743  
7744  
7745  
7746  
7747  
7748  
7749  
7750  
7751  
7752  
7753  
7754  
7755  
7756  
7757  
7758  
7759  
7760  
7761  
7762  
7763  
7764  
7765  
7766  
7767  
7768  
7769  
7770  
7771  
7772  
7773  
7774  
7775  
7776  
7777  
7778  
7779  
7780

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrate by manual cadmium reduction in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 4500-NO<sub>3</sub><sup>-</sup> E (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 4500-NO<sub>3</sub><sup>-</sup> that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 4500-NO<sub>3</sub><sup>-</sup> E from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

E) Capillary ion electrophoresis: ASTM Method D6508-00(2005)e2 (rev. 2).

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrate to add capillary ion electrophoresis in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of "Waters Method D6508, Rev. 2." The Board attempt to locate a copy of the method disclosed that it is an ASTM method originally approved in 2000 and revised in 2005. The Board has cited to the ASTM Method D6508-00(2005)e2.

19) Nitrite.

- A) Ion chromatography.
  - i) USEPA Environmental Inorganic Methods: Method 300.0 or Method 300.1;
  - ii) ASTM Method D4327-97 or D4327-03;
  - iii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 4110 B; or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for nitrite by ion chromatography in the table at corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods Online

7781 (at www.standardmethods.org), Method 4110 B (as  
 7782 approved in 2000). The Board has instead cited to the 21<sup>st</sup>  
 7783 edition of Standard Methods for the Examination of Water  
 7784 and Wastewater (the printed version of Standard Methods),  
 7785 since the version of Method 4110 that appears in that  
 7786 printed volume is that cited by USEPA as acceptable for  
 7787 use. USEPA later added Method 4110 B from the 21<sup>st</sup>  
 7788 edition of Standard Methods as an approved alternative  
 7789 method in appendix A to subpart C, added on June 3, 2008  
 7790 (at 73 Fed. Reg. 31616).

7791  
 7792 iv) Waters Test Method B-1011, available from Millipore  
 7793 Corporation.

7794  
 7795 B) Automated cadmium reduction.

7796  
 7797 i) USEPA Environmental Inorganic Methods: Method 353.2;

7798  
 7799 ii) ASTM Method D3867-90 A; or

7800  
 7801 iii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
 7802 4500-NO<sub>3</sub><sup>-</sup> F.

7803  
 7804 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 7805 11200), USEPA amended the entry for nitrite by automated  
 7806 cadmium reduction in the table at corresponding 40 CFR  
 7807 141.23(k)(1) to allow the use of Standard Methods Online  
 7808 (at www.standardmethods.org), Method 4500-NO<sub>3</sub><sup>-</sup> F (as  
 7809 approved in 2000). The Board has instead cited to the 21<sup>st</sup>  
 7810 edition of Standard Methods for the Examination of Water  
 7811 and Wastewater (the printed version of Standard Methods),  
 7812 since the version of Method 4500-NO<sub>3</sub><sup>-</sup> that appears in that  
 7813 printed volume is that cited by USEPA as acceptable for  
 7814 use. USEPA later added Method 4500-NO<sub>3</sub><sup>-</sup> F from the  
 7815 21<sup>st</sup> edition of Standard Methods as an approved alternative  
 7816 method in appendix A to subpart C, added on June 3, 2008  
 7817 (at 73 Fed. Reg. 31616).

7818  
 7819 C) Manual cadmium reduction.

7820  
 7821 i) ASTM Method D3867-90 B; or

7822

7823 ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
 7824 4500-NO<sub>3</sub><sup>-</sup> E.  
 7825

7826 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 7827 11200), USEPA amended the entry for nitrite by manual  
 7828 cadmium reduction in the table at corresponding 40 CFR  
 7829 141.23(k)(1) to allow the use of Standard Methods Online  
 7830 (at www.standardmethods.org), Method 4500-NO<sub>3</sub><sup>-</sup> E (as  
 7831 approved in 2000). The Board has instead cited to the 21<sup>st</sup>  
 7832 edition of Standard Methods for the Examination of Water  
 7833 and Wastewater (the printed version of Standard Methods),  
 7834 since the version of Method 4500-NO<sub>3</sub><sup>-</sup> that appears in that  
 7835 printed volume is that cited by USEPA as acceptable for  
 7836 use. USEPA later added Method 4500-NO<sub>3</sub><sup>-</sup> E from the  
 7837 21<sup>st</sup> edition of Standard Methods as an approved alternative  
 7838 method in appendix A to subpart C, added on June 3, 2008  
 7839 (at 73 Fed. Reg. 31616).  
 7840

7841 D) Spectrophotometric: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup> or 21<sup>st</sup>  
 7842 ed.: Method 4500-NO<sub>2</sub><sup>-</sup> B.  
 7843

7844 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 7845 USEPA amended the entry for nitrite by spectrophotometric in the  
 7846 table at corresponding 40 CFR 141.23(k)(1) to allow the use of  
 7847 Standard Methods Online (at www.standardmethods.org), Method  
 7848 4500-NO<sub>2</sub><sup>-</sup> B (as approved in 2000). The Board has instead cited  
 7849 to the 21<sup>st</sup> edition of Standard Methods for the Examination of  
 7850 Water and Wastewater (the printed version of Standard Methods),  
 7851 since the version of Method 4500-NO<sub>2</sub><sup>-</sup> that appears in that printed  
 7852 volume is that cited by USEPA as acceptable for use. USEPA  
 7853 later added Method 4500-NO<sub>2</sub><sup>-</sup> B from the 21<sup>st</sup> edition of Standard  
 7854 Methods as an approved alternative method in appendix A to  
 7855 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).  
 7856

7857 E) Capillary ion electrophoresis: ASTM Method D6508-00(2005)e2  
 7858 (rev. 2).  
 7859

7860 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 7861 USEPA amended the entry for nitrite to add capillary ion  
 7862 electrophoresis in the table at corresponding 40 CFR 141.23(k)(1)  
 7863 to allow the use of "Waters Method D6508, Rev. 2." The Board  
 7864 attempt to locate a copy of the method disclosed that it is an

7865 ASTM method originally approved in 2000 and revised in 2005.  
7866 The Board has cited to the ASTM Method D6508-00(2005)e2.

7867  
7868 20) Orthophosphate (unfiltered, without digestion or hydrolysis).

7869  
7870 A) Automated colorimetric, ascorbic acid.

7871  
7872 i) USEPA Environmental Inorganic Methods: Method 365.1;  
7873 or

7874  
7875 ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~20<sup>th</sup>~~, or 21<sup>st</sup> ed.: Method  
7876 4500-P F.

7877  
7878 BOARD NOTE: USEPA added Method 4500-P F from the  
7879 21<sup>st</sup> edition of Standard Methods as an approved alternative  
7880 method in appendix A to subpart C of 40 CFR 141, added  
7881 on June 3, 2008 (at 73 Fed. Reg. 31616). USEPA also  
7882 added Method 4500-P F (as approved in 1999) as available  
7883 from Standard Methods Online (at  
7884 www.standardmethods.org). The Board has instead cited  
7885 only to the 21<sup>st</sup> edition of Standard Methods for the  
7886 Examination of Water and Wastewater (the printed version  
7887 of Standard Methods), since the version of Method 4500-P  
7888 F that appears in the printed volume is the 1999 version  
7889 available from the online source.

7890  
7891 B) Single reagent colorimetric, ascorbic acid.

7892  
7893 i) ASTM Method D515-88 A; or

7894  
7895 ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~20<sup>th</sup>~~, or 21<sup>st</sup> ed.: Method  
7896 4500-P E.

7897  
7898 BOARD NOTE: USEPA added Method 4500-P E from  
7899 the 21<sup>st</sup> edition of Standard Methods as an approved  
7900 alternative method in appendix A to subpart C of 40 CFR  
7901 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).  
7902 USEPA also added Method 4500-P E (as approved in  
7903 1999) as available from Standard Methods Online (at  
7904 www.standardmethods.org). The Board has instead cited  
7905 only to the 21<sup>st</sup> edition of Standard Methods for the  
7906 Examination of Water and Wastewater (the printed version  
7907 of Standard Methods), since the version of Method 4500-P

7908 E that appears in the printed volume is the 1999 version  
7909 available from the online source.

7910  
7911 C) Colorimetric, phosphomolybdate: USGS Methods: Method I-  
7912 1601-85.

7913  
7914 D) Colorimetric, phosphomolybdate, automated-segmented flow:  
7915 USGS Methods: Method I-2601-90.

7916  
7917 E) Colorimetric, phosphomolybdate, automated discrete: USGS  
7918 Methods: Method I-2598-85.

7919  
7920 F) Ion Chromatography.

7921  
7922 i) USEPA Environmental Inorganic Methods: Method 300.0  
7923 or Method 300.1;

7924  
7925 ii) ASTM Method D4327-97 or D4327-03; or

7926  
7927 iii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method  
7928 4110 B.

7929  
7930 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
7931 11200), USEPA amended the entry for orthophosphate by  
7932 ion chromatography in the table at corresponding 40 CFR  
7933 141.23(k)(1) to allow the use of Standard Methods Online  
7934 (at www.standardmethods.org), Method 4110 B (as  
7935 approved in 2000). The Board has instead cited to the 21<sup>st</sup>  
7936 edition of Standard Methods for the Examination of Water  
7937 and Wastewater (the printed version of Standard Methods),  
7938 since the version of Method 4110 that appears in that  
7939 printed volume is that cited by USEPA as acceptable for  
7940 use. USEPA later added Method 4110 B from the 21<sup>st</sup>  
7941 edition of Standard Methods as an approved alternative  
7942 method in appendix A to subpart C, added on June 3, 2008  
7943 (at 73 Fed. Reg. 31616).

7944  
7945 G) Capillary ion electrophoresis: Waters Method D6508, rev. 2.

7946  
7947 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
7948 USEPA amended the entry for orthophosphate to add capillary ion  
7949 electrophoresis in the table at corresponding 40 CFR 141.23(k)(1)  
7950 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 revised in 2005.  
The Board has cited to the ASTM Method D6508-00(2005)e2.

7951  
 7952  
 7953  
 7954  
 7955 21) pH: electrometric.  
 7956

7957 A) ~~Electrometric.~~

7958 ~~Ai)~~ USEPA Inorganic Methods: Method 150.1 or Method 150.2;

7959 ~~Bii)~~ ASTM Method D1293-95 or D1293-99; or

7960 ~~Ciii)~~ Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 4500-  
 7961 H<sup>+</sup>4500-H+ B.  
 7962

7963 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 7964 USEPA amended the entry for pH by electrometric in the table at  
 7965 corresponding 40 CFR 141.23(k)(1) to allow the use of Standard  
 7966 Methods Online (at www.standardmethods.org), Method 4500-H<sup>+</sup>  
 7967 B (as approved in 2000). The Board has instead cited to the 21<sup>st</sup>  
 7968 edition of Standard Methods for the Examination of Water and  
 7969 Wastewater (the printed version of Standard Methods), since the  
 7970 version of Method 4500-H<sup>+</sup> that appears in that printed volume is  
 7971 that cited by USEPA as acceptable for use. USEPA later added  
 7972 Method 4500-H<sup>+</sup> B from the 21<sup>st</sup> edition of Standard Methods as  
 7973 an approved alternative method in appendix A to subpart C, added  
 7974 on June 3, 2008 (at 73 Fed. Reg. 31616).  
 7975

7976 ~~B)~~ USEPA Inorganic Methods: ~~Method 150.2.~~  
 7977

7978  
 7979  
 7980 22) Selenium.  
 7981

7982 A) Atomic absorption, hydride.  
 7983

7984 i) ASTM Method D3859-98 A or D3859-03 A; or

7985 ii) Standard Methods, 18<sup>th</sup>, ~~or~~ 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3114  
 7986 B.  
 7987

7988 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 7989 11200), USEPA amended the entry for selenium by atomic  
 7990 absorption, hydride, in the table at corresponding 40 CFR  
 7991 141.23(k)(1) to allow the use of Standard Methods Online  
 7992  
 7993

7994 (at www.standardmethods.org), Method 3114 B (as  
 7995 approved in 1997). The Board has instead cited to the 21<sup>st</sup>  
 7996 edition of Standard Methods for the Examination of Water  
 7997 and Wastewater (the printed version of Standard Methods),  
 7998 since the version of Method 3114 that appears in that  
 7999 printed volume is that cited by USEPA as acceptable for  
 8000 use. USEPA later added Method 3114 B from the 21<sup>st</sup>  
 8001 edition of Standard Methods as an approved alternative  
 8002 method in appendix A to subpart C, added on June 3, 2008  
 8003 (at 73 Fed. Reg. 31616).

8004  
 8005 B) Inductively-coupled plasma – mass spectrometry: USEPA  
 8006 Environmental Metals Methods: Method 200.8.

8007  
 8008 C) Atomic absorption, platform furnace technique: USEPA  
 8009 Environmental Metals Methods: Method 200.9.

8010  
 8011 D) Atomic absorption, furnace technique.

8012  
 8013 i) ASTM Method D3859-98 B or D3859-03 B; or

8014  
 8015 ii) Standard Methods, 18<sup>th</sup>, ~~or~~ 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3113  
 8016 B.

8017  
 8018 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 8019 11200), USEPA amended the entry for selenium by atomic  
 8020 absorption, furnace technique, in the table at corresponding  
 8021 40 CFR 141.23(k)(1) to allow the use of Standard Methods  
 8022 Online (at www.standardmethods.org), Method 3113 B (as  
 8023 approved in 1999). The Board has instead cited to the 21<sup>st</sup>  
 8024 edition of Standard Methods for the Examination of Water  
 8025 and Wastewater (the printed version of Standard Methods),  
 8026 since the version of Method 3113 that appears in that  
 8027 printed volume is that cited by USEPA as acceptable for  
 8028 use. USEPA later added Method 3113 B from the 21<sup>st</sup>  
 8029 edition of Standard Methods as an approved alternative  
 8030 method in appendix A to subpart C, added on June 3, 2008  
 8031 (at 73 Fed. Reg. 31616).

8032  
 8033 E) Axially viewed inductively-coupled plasma – atomic emission  
 8034 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

8035

8036 BOARD NOTE: USEPA added this method as an approved  
8037 alternative method in appendix A to subpart C of 40 CFR 141,  
8038 added on June 3, 2008 (at 73 Fed. Reg. 31616).

8039  
8040 23) Silica.

8041  
8042 A) Colorimetric, molybdate blue: USGS Methods: Method I-1700-  
8043 85.

8044  
8045 B) Colorimetric, molybdate blue, automated-segmented flow: USGS  
8046 Methods: Method I-2700-85.

8047  
8048 C) Colorimetric: ASTM Method D859-94, D859-00, or D859-  
8049 05~~D859-95~~.

8050  
8051 BOARD NOTE: USEPA added ASTM Method D859-05 as an  
8052 approved alternative method in appendix A to subpart C of 40 CFR  
8053 141, added on June 3, 2008 (at 73 Fed. Reg. 31616).

8054  
8055 D) Molybdosilicate: Standard Methods, 18<sup>th</sup> or 19<sup>th</sup> ed.: Method  
8056 4500-Si D or Standard Methods, 20<sup>th</sup> or 21<sup>st</sup> ed.: Method 4500-  
8057 SiO<sub>2</sub>4500-Si C.

8058  
8059 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
8060 USEPA amended the entry for silica by molybdosilicate in the  
8061 table at corresponding 40 CFR 141.23(k)(1) to allow the use of  
8062 Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method  
8063 4500-SiO<sub>2</sub> C (as approved in 1997). The Board has instead cited  
8064 to the 21<sup>st</sup> edition of Standard Methods for the Examination of  
8065 Water and Wastewater (the printed version of Standard Methods),  
8066 since the version of Method 4500-SiO<sub>2</sub> that appears in that printed  
8067 volume is that cited by USEPA as acceptable for use. USEPA  
8068 later added Method 4500-SiO<sub>2</sub> C from the 21<sup>st</sup> edition of Standard  
8069 Methods as an approved alternative method in appendix A to  
8070 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

8071  
8072 E) Heteropoly blue: Standard Methods, 18<sup>th</sup> or 19<sup>th</sup> ed.: Method  
8073 4500-Si E or Standard Methods, 20<sup>th</sup> or 21<sup>st</sup> ed.: Method 4500-  
8074 SiO<sub>2</sub>4500-Si D.

8075  
8076 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
8077 USEPA amended the entry for silica by heteropoly blue in the  
8078 table at corresponding 40 CFR 141.23(k)(1) to allow the use of



8079 Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method  
 8080 4500-SiO<sub>2</sub> D (as approved in 1997). The Board has instead cited  
 8081 to the 21<sup>st</sup> edition of Standard Methods for the Examination of  
 8082 Water and Wastewater (the printed version of Standard Methods),  
 8083 since the version of Method 4500-SiO<sub>2</sub> that appears in that printed  
 8084 volume is that cited by USEPA as acceptable for use. USEPA  
 8085 later added Method 4500-SiO<sub>2</sub> D from the 21<sup>st</sup> edition of Standard  
 8086 Methods as an approved alternative method in appendix A to  
 8087 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- 8088
- 8089 F) Automated method for molybdate-reactive silica: Standard  
 8090 Methods, 18<sup>th</sup> or 19<sup>th</sup> ed.: Method 4500-Si F or Standard Methods,  
 8091 20<sup>th</sup> or 21<sup>st</sup> ed.: Method 4500-Si ~~4500-SiO<sub>2</sub>~~ E.

8092

8093 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 8094 USEPA amended the entry for silica by automated method for  
 8095 molybdate-reactive silica in the table at corresponding 40 CFR  
 8096 141.23(k)(1) to allow the use of Standard Methods Online (at  
 8097 [www.standardmethods.org](http://www.standardmethods.org)), Method 4500-SiO<sub>2</sub> E (as approved in  
 8098 1997). The Board has instead cited to the 21<sup>st</sup> edition of Standard  
 8099 Methods for the Examination of Water and Wastewater (the  
 8100 printed version of Standard Methods), since the version of Method  
 8101 4500-SiO<sub>2</sub> that appears in that printed volume is that cited by  
 8102 USEPA as acceptable for use. USEPA later added Method 4500-  
 8103 SiO<sub>2</sub> E from the 21<sup>st</sup> edition of Standard Methods as an approved  
 8104 alternative method in appendix A to subpart C, added on June 3,  
 8105 2008 (at 73 Fed. Reg. 31616).

- 8106
- 8107 G) Inductively-coupled plasma.

- 8108
- 8109 i) USEPA Environmental Metals Methods: Method 200.7; or
- 8110
- 8111 ii) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or 20<sup>th</sup>~~, or 21<sup>st</sup> ed.: Method
- 8112 3120 B.

8113

8114 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
 8115 11200), USEPA amended the entry for silica by  
 8116 inductively-coupled plasma in the table at corresponding 40  
 8117 CFR 141.23(k)(1) to allow the use of Standard Methods  
 8118 Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 3120 B (as  
 8119 approved in 1999). The Board has instead cited to the 21<sup>st</sup>  
 8120 edition of Standard Methods for the Examination of Water  
 8121 and Wastewater (the printed version of Standard Methods),

8122 since the version of Method 3120 that appears in that  
 8123 printed volume is that cited by USEPA as acceptable for  
 8124 use. USEPA later added Method 3120 B from the 21<sup>st</sup>  
 8125 edition of Standard Methods as an approved alternative  
 8126 method in appendix A to subpart C, added on June 3, 2008  
 8127 (at 73 Fed. Reg. 31616).

8128  
 8129 H) Axially viewed inductively-coupled plasma – atomic emission  
 8130 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

8131  
 8132 BOARD NOTE: USEPA added this method as an approved  
 8133 alternative method in appendix A to subpart C of 40 CFR 141,  
 8134 added on June 3, 2008 (at 73 Fed. Reg. 31616).

8135  
 8136 24) Sodium.

8137  
 8138 A) Inductively-coupled plasma: USEPA Environmental Metals  
 8139 Methods: Method 200.7.

8140  
 8141 B) Atomic absorption, direct aspiration: Standard Methods, 18<sup>th</sup>, or  
 8142 19<sup>th</sup>, or 21<sup>st</sup> ed.: Method 3111 B.

8143  
 8144 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 8145 USEPA amended the entry for sodium by atomic absorption, direct  
 8146 aspiration, in the table at corresponding 40 CFR 141.23(k)(1) to  
 8147 allow the use of Standard Methods Online (at  
 8148 www.standardmethods.org), Method 3111 B (as approved in  
 8149 1999). The Board has instead cited to the 21<sup>st</sup> edition of Standard  
 8150 Methods for the Examination of Water and Wastewater (the  
 8151 printed version of Standard Methods), since the version of Method  
 8152 3111 that appears in that printed volume is that cited by USEPA as  
 8153 acceptable for use. USEPA later added Method 3111 B from the  
 8154 21<sup>st</sup> edition of Standard Methods as an approved alternative  
 8155 method in appendix A to subpart C, added on June 3, 2008 (at 73  
 8156 Fed. Reg. 31616).

8157  
 8158 C) Ion chromatography: ASTM Method D6919-03.

8159  
 8160 D) Axially viewed inductively-coupled plasma – atomic emission  
 8161 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.  
 8162

8163 BOARD NOTE: USEPA added this method as an approved  
8164 alternative method in appendix A to subpart C of 40 CFR 141,  
8165 added on June 3, 2008 (at 73 Fed. Reg. 31616).  
8166

- 8167 25) Temperature; thermometric: Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup>  
8168 ed.: Method 2550.  
8169

8170 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA  
8171 amended the entry for temperature by thermometric in the table at  
8172 corresponding 40 CFR 141.23(k)(1) to allow the use of Standard Methods  
8173 Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 2550 (as approved in  
8174 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard  
8175 Methods for the Examination of Water and Wastewater (the printed  
8176 version of Standard Methods), since the version of Method 2550 that  
8177 appears in that printed volume is that cited by USEPA as acceptable for  
8178 use. USEPA later added Method 2550 from the 21<sup>st</sup> edition of Standard  
8179 Methods as an approved alternative method in appendix A to subpart C,  
8180 added on June 3, 2008 (at 73 Fed. Reg. 31616).  
8181

- 8182 26) Thallium.  
8183

8184 A) Inductively-coupled plasma – mass spectrometry: USEPA  
8185 Environmental Metals Methods: Method 200.8.  
8186

8187 B) Atomic absorption, platform furnace technique: USEPA  
8188 Environmental Metals Methods: Method 200.9.  
8189

- 8190 b) Sample collection for antimony, arsenic (effective January 22, 2004), asbestos,  
8191 barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel,  
8192 nitrate, nitrite, selenium, and thallium pursuant to Sections 611.600 through  
8193 611.604 must be conducted using the following sample preservation, container,  
8194 and maximum holding time procedures:  
8195

8196 BOARD NOTE: For cyanide determinations samples must be adjusted with  
8197 sodium hydroxide to pH 12 at the time of collection. When chilling is indicated  
8198 the sample must be shipped and stored at 4° C or less. Acidification of nitrate or  
8199 metals samples may be with a concentrated acid or a dilute (50% by volume)  
8200 solution of the applicable concentrated acid. Acidification of samples for metals  
8201 analysis is encouraged and allowed at the laboratory rather than at the time of  
8202 sampling provided the shipping time and other instructions in Section 8.3 of  
8203 USEPA Environmental Metals Method 200.7, 200.8, or 200.9 are followed.  
8204

- 8205 1) Antimony.

- 8206  
8207  
8208  
8209  
8210  
8211  
8212  
8213  
8214  
8215  
8216  
8217  
8218  
8219  
8220  
8221  
8222  
8223  
8224  
8225  
8226  
8227  
8228  
8229  
8230  
8231  
8232  
8233  
8234  
8235  
8236  
8237  
8238  
8239  
8240  
8241  
8242  
8243  
8244  
8245  
8246  
8247  
8248
- A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 2) Arsenic.
- A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 3) Asbestos.
- A) Preservative: Cool to 4° C.
  - B) Plastic or glass (hard or soft).
  - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.
- 4) Barium.
- A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 5) Beryllium.
- A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.

- 8249  
8250  
8251  
8252  
8253  
8254  
8255  
8256  
8257  
8258  
8259  
8260  
8261  
8262  
8263  
8264  
8265  
8266  
8267  
8268  
8269  
8270  
8271  
8272  
8273  
8274  
8275  
8276  
8277  
8278  
8279  
8280  
8281  
8282  
8283  
8284  
8285  
8286  
8287  
8288  
8289  
8290  
8291
- 6) Cadmium.
    - A) Preservative: Concentrated nitric acid to pH less than 2.
    - B) Plastic or glass (hard or soft).
    - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
  - 7) Chromium.
    - A) Preservative: Concentrated nitric acid to pH less than 2.
    - B) Plastic or glass (hard or soft).
    - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
  - 8) Cyanide.
    - A) Preservative: Cool to 4° C. Add sodium hydroxide to pH greater than 12. See the analytical methods for information on sample preservation.
    - B) Plastic or glass (hard or soft).
    - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
  - 9) Fluoride.
    - A) Preservative: None.
    - B) Plastic or glass (hard or soft).
    - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within one month.
  - 10) Mercury.
    - A) Preservative: Concentrated nitric acid to pH less than 2.

- 8292  
8293  
8294  
8295  
8296  
8297  
8298  
8299  
8300  
8301  
8302  
8303  
8304  
8305  
8306  
8307  
8308  
8309  
8310  
8311  
8312  
8313  
8314  
8315  
8316  
8317  
8318  
8319  
8320  
8321  
8322  
8323  
8324  
8325  
8326  
8327  
8328  
8329  
8330  
8331  
8332  
8333  
8334
- B) Plastic or glass (hard or soft).
  - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 28 days.
- 11) Nickel.
- A) Preservative: Concentrated nitric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within six months.
- 12) Nitrate, chlorinated.
- A) Preservative: Cool to 4° C.
  - B) Plastic or glass (hard or soft).
  - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
- 13) Nitrate, non-chlorinated.
- A) Preservative: Concentrated sulfuric acid to pH less than 2.
  - B) Plastic or glass (hard or soft).
  - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 14 days.
- 14) Nitrite.
- A) Preservative: Cool to 4° C.
  - B) Plastic or glass (hard or soft).
  - C) Holding time: Samples must be analyzed as soon after collection as possible, but in any event within 48 hours.
- 15) Selenium.

- 8335 A) Preservative: Concentrated nitric acid to pH less than 2.  
 8336  
 8337 B) Plastic or glass (hard or soft).  
 8338  
 8339 C) Holding time: Samples must be analyzed as soon after collection  
 8340 as possible, but in any event within six months.  
 8341  
 8342 16) Thallium.  
 8343  
 8344 A) Preservative: Concentrated nitric acid to pH less than 2.  
 8345  
 8346 B) Plastic or glass (hard or soft).  
 8347  
 8348 C) Holding time: Samples must be analyzed as soon after collection  
 8349 as possible, but in any event within six months.  
 8350  
 8351 c) Analyses under this Subpart N must be conducted by laboratories that received  
 8352 approval from USEPA or the Agency. The Agency must certify laboratories to  
 8353 conduct analyses for antimony, arsenic (effective January 23, 2006), asbestos,  
 8354 barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel,  
 8355 nitrate, nitrite, selenium, and thallium if the laboratory does as follows:  
 8356  
 8357 1) It analyzes performance evaluation (PE) samples, provided by the Agency  
 8358 pursuant to 35 Ill. Adm. Code 186, that include those substances at levels  
 8359 not in excess of levels expected in drinking water; and  
 8360  
 8361 2) It achieves quantitative results on the analyses within the following  
 8362 acceptance limits:  
 8363  
 8364 A) Antimony:  $\pm 30\%$  at greater than or equal to 0.006 mg/l.  
 8365  
 8366 B) Arsenic:  $\pm 30\%$  at greater than or equal to 0.003 mg/l.  
 8367  
 8368 C) Asbestos: 2 standard deviations based on study statistics.  
 8369  
 8370 D) Barium:  $\pm 15\%$  at greater than or equal to 0.15 mg/l.  
 8371  
 8372 E) Beryllium:  $\pm 15\%$  at greater than or equal to 0.001 mg/l.  
 8373  
 8374 F) Cadmium:  $\pm 20\%$  at greater than or equal to 0.002 mg/l.  
 8375  
 8376 G) Chromium:  $\pm 15\%$  at greater than or equal to 0.01 mg/l.  
 8377

- 8378 H) Cyanide:  $\pm 25\%$  at greater than or equal to 0.1 mg/l.
- 8379
- 8380 I) Fluoride:  $\pm 10\%$  at 1 to 10 mg/l.
- 8381
- 8382 J) Mercury:  $\pm 30\%$  at greater than or equal to 0.0005 mg/l.
- 8383
- 8384 K) Nickel:  $\pm 15\%$  at greater than or equal to 0.01 mg/l.
- 8385
- 8386 L) Nitrate:  $\pm 10\%$  at greater than or equal to 0.4 mg/l.
- 8387
- 8388 M) Nitrite:  $\pm 15\%$  at greater than or equal to 0.4 mg/l.
- 8389
- 8390 N) Selenium:  $\pm 20\%$  at greater than or equal to 0.01 mg/l.
- 8391
- 8392 O) Thallium:  $\pm 30\%$  at greater than or equal to 0.002 mg/l.
- 8393

8394 BOARD NOTE: Derived from 40 CFR 141.23(k) (2007) and appendix A to 40 CFR 141, as  
8395 added at 73 Fed. Reg. 31616 (June 3, 2008)(2003).

8396  
8397 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

8398  
8399 **Section 611.612 Monitoring Requirements for Old Inorganic MCLs**

- 8400
- 8401 a) Analyses for the purpose of determining compliance with the old inorganic
- 8402 MCLs of Section 611.300 are required as follows:
- 8403
- 8404 1) Analyses for all CWSs utilizing surface water sources must be repeated at
- 8405 yearly intervals.
- 8406
- 8407 2) Analyses for all CWSs utilizing only groundwater sources must be
- 8408 repeated at three-year intervals.
- 8409
- 8410 3) This subsection (a)(3) corresponds with 40 CFR 141.23(1)(3), which
- 8411 requires monitoring for the repealed old MCL for nitrate at a frequency
- 8412 specified by the state. The Board has followed the USEPA lead and
- 8413 repealed that old MCL. This statement maintains structural consistency
- 8414 with USEPA rules.
- 8415
- 8416 4) This subsection (a)(4) corresponds with 40 CFR 141.23(1)(4), which
- 8417 authorizes the state to determine compliance and initiate enforcement
- 8418 action. This statement maintains structural consistency with USEPA
- 8419 rules.
- 8420



- 8421           b)    If the result of an analysis made under subsection (a) of this Section indicates that  
8422           the level of any contaminant listed in Section 611.300 exceeds the old MCL, the  
8423           supplier must report to the Agency within seven days and initiate three additional  
8424           analyses at the same sampling point within one month.  
8425
- 8426           c)    When the average of four analyses made pursuant to subsection (b) of this  
8427           Section, rounded to the same number of significant figures as the old MCL for the  
8428           substance in question, exceeds the old MCL, the supplier must notify the Agency  
8429           and give notice to the public pursuant to Subpart V of this Part. Monitoring after  
8430           public notification must be at a frequency designated by the Agency by a SEP  
8431           granted pursuant to Section 611.110 and must continue until the old MCL has not  
8432           been exceeded in two successive samples or until a different monitoring schedule  
8433           becomes effective as a condition to a variance, an adjusted standard, a site  
8434           specific rule, an enforcement action, or another SEP granted pursuant to Section  
8435           611.110.  
8436
- 8437           d)    This subsection (d) corresponds with 40 CFR 141.23(o), which pertains to  
8438           monitoring for the repealed old MCL for nitrate. This statement maintains  
8439           structural consistency with USEPA rules.  
8440
- 8441           e)    This subsection (e) corresponds with 40 CFR 141.23(p), which pertains to the use  
8442           of existing data up until a date long since expired. This statement maintains  
8443           structural consistency with USEPA rules.  
8444
- 8445           f)    Except for arsenic, for which analyses must be made in accordance with Section  
8446           611.611, analyses conducted to determine compliance with the old MCLs of  
8447           Section 611.300 must be made in accordance with the following methods,  
8448           incorporated by reference in Section 611.102.  
8449
- 8450           1)    Fluoride: The methods specified in Section 611.611(c) must apply for the  
8451           purposes of this Section.  
8452
- 8453           2)    Iron:  
8454
- 8455           A)    Standard Methods.  
8456
- 8457           i)    Method 3111 B, 18<sup>th</sup>, ~~or 19<sup>th</sup>~~, or 21<sup>st</sup> ed.;
- 8458
- 8459           ii)   Method 3113 B, 18<sup>th</sup>, ~~or 19<sup>th</sup>~~, or 21<sup>st</sup> ed.;
- 8460
- 8461           iii)  Method 3120 B, 18<sup>th</sup>, 19<sup>th</sup>, ~~or 20<sup>th</sup>~~, or 21<sup>st</sup> ed.  
8462

8463 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
8464 USEPA amended the entries for iron in the table at 40 CFR  
8465 143.4(b) to allow the use of Standard Methods Online (at  
8466 www.standardmethods.org), Method 3111 B, Method 3113 B, and  
8467 Method 3120 B (as approved in 1999). The Board has instead  
8468 cited to the 21<sup>st</sup> edition of Standard Methods for the Examination  
8469 of Water and Wastewater (the printed version of Standard  
8470 Methods), since the versions of Method 3111, Method 3113, and  
8471 Method 3120 that appear in that printed volume are those cited by  
8472 USEPA as acceptable for use. USEPA later added Method 3111  
8473 B, Method 3113 B, and Method 3120 B from the 21<sup>st</sup> edition of  
8474 Standard Methods as approved alternative methods in appendix A  
8475 to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

8476  
8477 B) USEPA Environmental Metals Methods.

8478  
8479 i) Method 200.7; or

8480  
8481 ii) Method 200.9.

8482  
8483 C) Axially viewed inductively-coupled plasma – atomic emission  
8484 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

8485  
8486 BOARD NOTE: USEPA added this method as an approved  
8487 alternative method in appendix A to subpart C of 40 CFR 141,  
8488 added on June 3, 2008 (at 73 Fed. Reg. 31616).

8489  
8490 3) Manganese.

8491  
8492 A) Standard Methods.

8493  
8494 i) Method 3111 B, 18<sup>th</sup>, ~~19<sup>th</sup>~~, or 21<sup>st</sup> ed.;

8495  
8496 ii) Method 3113 B, 18<sup>th</sup> ~~19<sup>th</sup>~~, or 21<sup>st</sup> ed.; or

8497  
8498 iii) Method 3120 B, 18<sup>th</sup>, 19<sup>th</sup>, ~~20<sup>th</sup>~~, or 21<sup>st</sup> ed.

8499  
8500 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
8501 USEPA amended the entries for manganese in the table at 40 CFR  
8502 143.4(b) to allow the use of Standard Methods Online (at  
8503 www.standardmethods.org), Method 3111 B, Method 3113 B, and  
8504 Method 3120 B (as approved in 1999). The Board has instead  
8505 cited to the 21<sup>st</sup> edition of Standard Methods for the Examination

8506 of Water and Wastewater (the printed version of Standard  
8507 Methods), since the versions of Method 3111, Method 3113, and  
8508 Method 3120 that appear in that printed volume are those cited by  
8509 USEPA as acceptable for use. USEPA later added Method 3111  
8510 B, Method 3113 B, and Method 3120 B from the 21<sup>st</sup> edition of  
8511 Standard Methods as approved alternative methods in appendix A  
8512 to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

8513  
8514 B) USEPA Environmental Metals Methods.

8515  
8516 i) Method 200.7;

8517  
8518 ii) Method 200.8; or

8519  
8520 iii) Method 200.9.

8521  
8522 C) Axially viewed inductively-coupled plasma – atomic emission  
8523 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

8524  
8525 BOARD NOTE: USEPA added this method as an approved  
8526 alternative method in appendix A to subpart C of 40 CFR 141,  
8527 added on June 3, 2008 (at 73 Fed. Reg. 31616).

8528  
8529 4) Zinc.

8530  
8531 A) Standard Methods.

8532  
8533 i) Method 3111 B, 18<sup>th</sup>, ~~or 19<sup>th</sup>~~, or 21<sup>st</sup> ed.; or

8534  
8535 ii) Method 3120 B, 18<sup>th</sup>, 19<sup>th</sup>, ~~or 20<sup>th</sup>~~, or 21<sup>st</sup> ed.

8536  
8537 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
8538 USEPA amended the entries for zinc in the table at 40 CFR  
8539 143.4(b) to allow the use of Standard Methods Online (at  
8540 www.standardmethods.org), Method 3111 B and Method 3120 B  
8541 (as approved in 1999). The Board has instead cited to the 21<sup>st</sup>  
8542 edition of Standard Methods for the Examination of Water and  
8543 Wastewater (the printed version of Standard Methods), since the  
8544 versions of Method 3111 and Method 3120 that appear in that  
8545 printed volume are those cited by USEPA as acceptable for use.  
8546 USEPA later added Method 3111 B, Method 3113 B, and Method  
8547 3120 B from the 21<sup>st</sup> edition of Standard Methods as approved

8548 alternative methods in appendix A to subpart C, added on June 3,  
 8549 2008 (at 73 Fed. Reg. 31616).

8550  
 8551 B) USEPA Environmental Metals Methods.

8552  
 8553 i) Method 200.7; or

8554  
 8555 ii) Method 200.8.

8556  
 8557 C) Axially viewed inductively-coupled plasma – atomic emission  
 8558 spectrometry (AVICP-AES): USEPA Methods: Method 200.5.

8559  
 8560 BOARD NOTE: USEPA added this method as an approved  
 8561 alternative method in appendix A to subpart C of 40 CFR 141,  
 8562 added on June 3, 2008 (at 73 Fed. Reg. 31616).

8563  
 8564 BOARD NOTE: The provisions of subsections (a) through (f) of this Section derive from 40  
 8565 CFR 141.23(1) through (p) ~~(2007)~~(2002). Subsections (f)(2) through (f)(4) of this Section relate  
 8566 exclusively to additional State requirements. The Board retained subsection (f) of this Section to  
 8567 set forth methods for the inorganic contaminants for which there is a State-only MCL. The  
 8568 methods specified are those set forth in 40 CFR 143.4(b) ~~(2007)~~ and appendix A to 40 CFR 141,  
 8569 as added at 73 Fed. Reg. 31616 (June 3, 2008)(2002), for secondary MCLs.

8570  
 8571 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

8572  
 8573 **SUBPART O: ORGANIC MONITORING AND ANALYTICAL REQUIREMENTS**

8574  
 8575 **Section 611.645 Analytical Methods for Organic Chemical Contaminants**

8576  
 8577 Analysis for the Section 611.311(a) VOCs under Section 611.646; the Section 611.311(c) SOCs  
 8578 under Section 611.648; the Section 611.310 old MCLs under Section 611.641; and for THMs,  
 8579 TTHMs, and TTHM potential must be conducted using the methods listed in this Section or by  
 8580 equivalent methods as approved by the Agency pursuant to Section 611.480. All methods are  
 8581 from USEPA Organic Methods, unless otherwise indicated. All methods are incorporated by  
 8582 reference in Section 611.102. Other required analytical test procedures germane to the conduct  
 8583 of these analyses are contained in the USEPA document, "Technical Notes of Drinking Water  
 8584 Methods," incorporated by reference in Section 611.102.

8585  
 8586 Volatile Organic Chemical Contaminants (VOCs).

8587

Contaminant	Analytical Methods
Benzene	502.2, 524.2
Carbon tetrachloride	502.2, 524.2, 551.1

Chlorobenzene	502.2, 524.2
1,2-Dichlorobenzene	502.2, 524.2
1,4-Dichlorobenzene	502.2, 524.2
1,2-Dichloroethane	502.2, 524.2
cis-Dichloroethylene	502.2, 524.2
trans-Dichloroethylene	502.2, 524.2
Dichloromethane	502.2, 524.2
1,2-Dichloropropane	502.2, 524.2
Ethylbenzene	502.2, 524.2
Styrene	502.2, 524.2
Tetrachloroethylene	502.2, 524.2, 551.1
1,1,1-Trichloroethane	502.2, 524.2, 551.1
Trichloroethylene	502.2, 524.2, 551.1
Toluene	502.2, 524.2
1,2,4-Trichlorobenzene	502.2, 524.2
1,1-Dichloroethylene	502.2, 524.2
1,1,2-Trichloroethane	502.2, 524.2
Vinyl chloride	502.2, 524.2
Xylenes (total)	502.2, 524.2

8588

8589 Synthetic Organic Chemical Contaminants (SOCs).

8590

Contaminant	Analytical Methods
2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD or dioxin)	Dioxin and Furan Method 1613
2,4-D	515.2, 555, 515.1, 515.3, <u>OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98</u>
2,4,5-TP (Silvex)	515.2, 555, 515.1, 515.3, <u>OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98</u>
Alachlor	505* <sup>1</sup> , 507, 508.1, 525.2, 551.1
Atrazine	505* <sup>1</sup> , 507, 508.1, 525.2, 551.1, Syngenta AG-625 <sup>2</sup>
Benzo(a)pyrene	525.2, 550, 550.1

Carbofuran	531.1, <u>OGWDW Methods, Method 531.2, Standard Methods, 18<sup>th</sup> ed. Supplement, 19<sup>th</sup> ed., or 20<sup>th</sup> ed.: Method 6610 or Standard Methods 21<sup>st</sup> ed. or Standard Methods Online: Method 6610 B</u>
Chlordane	505, 508, 508.1, 525.2
Dalapon	515.1, 552.1, 552.2, 515.3, <u>OGWDW Methods, Method 515.4, OGWDW Methods, Method 552.3</u>
Di(2-ethylhexyl)adipate	506, 525.2
Di(2-ethylhexyl)phthalate	506, 525.2
Dibromochloropropane (DBCP)	504.1, 551.1
Dinoseb	515.1, 515.2, 515.3, <u>OGWDW Methods, Method 515.4, 555</u>
Diquat	549.1
Endothall	548.1
Endrin	505, 508, 508.1, 525.2, 551.1
Ethylene Dibromide (EDB)	504.1, 551.1
Glyphosate	547, Standard Methods, 18 <sup>th</sup> ed., 19 <sup>th</sup> ed., or 20 <sup>th</sup> ed.: Method 6651
Heptachlor	505, 508, 508.1, 525.2, 551.1
Heptachlor Epoxide	505, 508, 508.1, 525.2, 551.1
Hexachlorobenzene	505, 508, 508.1, 525.2, 551.1
Hexachlorocyclopentadiene	505, 508, 508.1, 525.2, 551.1
Lindane	505, 508, 508.1, 525.2, 551.1
Methoxychlor	505, 508, 508.1, 525.2, 551.1

Oxamyl	531.1, <u>OGWDW Methods, Method 531.2, Standard Methods, 18<sup>th</sup> ed. Supplement, 19<sup>th</sup> ed., or 20<sup>th</sup> ed.: Method 6610 or Standard Methods 21<sup>st</sup> ed. or Standard Methods Online: Method 6610 B 508A</u>
PCBs (measured for compliance purposes as decchlorobiphenyl) PCBs (qualitatively identified as Aroclors) Pentachlorophenol	505, 508, 508.1, 525.2 515.1, 515.2, 525.2, 555, 515.3, <u>OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98(2003)</u>
Picloram	515.1, 515.2, 555, 515.3, <u>OGWDW Methods, Method 515.4, ASTM Method D5317-93 or D5317-98(2003)</u>
Simazine	505* <sup>1</sup> , 507, 508.1, 525.2, 551.2
Toxaphene	505, 508, 525.2, 508.1
8591	
8592 Total Trihalomethanes (TTHMs).	
8593	
Contaminant Total Trihalomethanes (TTHMs), Trihalomethanes (THMs), and Maximum Total Trihalomethane Potential	Analytical Methods 502.2, 524.2, 551.1
8594	
8595 State-Only MCLs (for which a method is not listed above).	
8596	
Contaminant Aldrin DDT Dieldrin	Analytical Methods 505, 508, 508.1, 525.2 505, 508 505, 508, 508.1, 525.2
8597	
8598 * <sup>1</sup> denotes that, for the particular contaminant, a nitrogen-phosphorus detector should be 8599 substituted for the electron capture detector in method 505 (or another approved method 8600 should be used) to determine alachlor, atrazine, and simazine if lower detection limits are 8601 required. 8602	

8603 <sup>2</sup> denotes that Syngenta Method AG-625 may not be used for the analysis of atrazine in any  
8604 system where chlorine dioxide is used for drinking water treatment. In samples from all other  
8605 systems, any result for atrazine generated by Syngenta Method AG-625 that is greater than  
8606 one-half the maximum contaminant level (MCL) (in other words, greater than 0.0015mg/l or  
8607 1.5 µg/l) must be confirmed using another approved method for this contaminant and should  
8608 use additional volume of the original sample collected for compliance monitoring. In  
8609 instances where a result from Syngenta Method AG-625 triggers such confirmatory testing,  
8610 the confirmatory result is to be used to determine compliance.  
8611

8612 BOARD NOTE: Derived from 40 CFR 141.24(e) (2007) and appendix A to 40 CFR 141, as  
8613 added at 73 Fed. Reg. 31616 (June 3, 2008)(2005).  
8614

8615 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)  
8616

8617 SUBPART Q: RADIOLOGICAL MONITORING AND ANALYTICAL REQUIREMENTS  
8618

8619 **Section 611.720 Analytical Methods**  
8620

8621 a) The methods specified below, incorporated by reference in Section 611.102, are  
8622 to be used to determine compliance with Section 611.330, except in cases where  
8623 alternative methods have been approved in accordance with Section 611.480.  
8624

8625 1) Gross Alpha and Beta.  
8626

8627 A) Standard Methods.  
8628

8629 i) Method 302, 13<sup>th</sup> ed.; or  
8630

8631 ii) Method 7110 B, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~20<sup>th</sup>~~, or 21<sup>st</sup> ed.;  
8632

8633 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg.  
8634 11200), USEPA amended the entry for gross alpha and beta  
8635 by evaporation in the table at corresponding 40 CFR  
8636 141.25(a) to allow the use of Standard Methods Online (at  
8637 www.standardmethods.org), Method 7110 B (as approved  
8638 in 2000). The Board has instead cited to the 21<sup>st</sup> edition of  
8639 Standard Methods for the Examination of Water and  
8640 Wastewater (the printed version of Standard Methods),  
8641 since the version of Method 7110 that appears in that  
8642 printed volume is that cited by USEPA as acceptable for  
8643 use. USEPA later added Method 7110 B from the 21<sup>st</sup>  
8644 edition of Standard Methods as an approved alternative



method in appendix A to subpart C, added on June 3, 2008  
(at 73 Fed. Reg. 31616).

- B) USEPA Interim Radiochemical Methods: page 1;
- C) USEPA Radioactivity Methods: Method 900.0;
- D) USEPA Radiochemical Analyses: page.1;
- E) USEPA Radiochemistry Methods: Method 00-01; or
- F) USGS Methods: Method R-1120-76.

2) Gross Alpha.

- A) Standard Methods, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 7110 C;  
or

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
USEPA amended the entry for gross alpha by coprecipitation in the  
table at corresponding 40 CFR 141.25(a) to allow the use of  
Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method  
7110 C (as approved in 2000). The Board has instead cited to the  
21<sup>st</sup> edition of Standard Methods for the Examination of Water and  
Wastewater (the printed version of Standard Methods), since the  
version of Method 7110 that appears in that printed volume is that  
cited by USEPA as acceptable for use. USEPA later added  
Method 7110 C from the 21<sup>st</sup> edition of Standard Methods as an  
approved alternative method in appendix A to subpart C, added on  
June 3, 2008 (at 73 Fed. Reg. 31616).

- B) USEPA Radiochemistry Methods: Method 00-02.

3) Radium-226.

- A) ASTM Methods.
  - i) Method ~~D2460-97~~D2460-90; or
  - ii) Method D3454-97;
- B) New York Radium Method;

8688  
8689  
8690  
8691  
8692  
8693  
8694  
8695  
8696  
8697  
8698  
8699  
8700  
8701  
8702  
8703  
8704  
8705  
8706  
8707  
8708  
8709  
8710  
8711  
8712  
8713  
8714  
8715  
8716  
8717  
8718  
8719  
8720  
8721  
8722  
8723  
8724  
8725  
8726  
8727  
8728  
8729  
8730

- C) Standard Methods.
    - i) Method 304, 13<sup>th</sup> ed.;
    - ii) Method 305, 13<sup>th</sup> ed.;
    - iii) Method 7500-Ra B, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.; or
    - iv) Method 7500-Ra C, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for radium-226 in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at www.standardmethods.org), Method 7500-Ra B and C (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-Ra that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-Ra B and C from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
  - D) USDOE Manual: Method Ra-04;
  - E) USEPA Interim Radiochemical Methods: pages 13 and 16;
  - F) USEPA Radioactivity Methods: Methods 903.0, 903.1;
  - G) USEPA Radiochemical Analyses: page 19;
  - H) USEPA Radiochemistry Methods: Methods Ra-03, Ra-04; or
  - I) USGS Methods.
    - i) Method R-1140-76; or
    - ii) Method R-1141-76.
  - J) Georgia Radium Method.
- 4) Radium-228.

- 8731  
8732  
8733  
8734  
8735  
8736  
8737  
8738  
8739  
8740  
8741  
8742  
8743  
8744  
8745  
8746  
8747  
8748  
8749  
8750  
8751  
8752  
8753  
8754  
8755  
8756  
8757  
8758  
8759  
8760  
8761  
8762  
8763  
8764  
8765  
8766  
8767  
8768  
8769  
8770  
8771  
8772  
8773
- A) Standard Methods, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 7500-Ra D;
- BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for radium-228 by radiochemical in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 7500-Ra D (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-Ra that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-Ra D from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
- B) New York Radium Method;
- C) USEPA Interim Radiochemical Methods: page 24;
- D) USEPA Radioactivity Methods: Method 904.0;
- E) USEPA Radiochemical Analyses: page 19;
- F) USEPA Radiochemistry Methods: Method Ra-05;
- G) USGS Methods: Method R-1142-76; ~~or~~
- H) New Jersey Radium Method; or
- I) Georgia Radium Method.
- 5) Uranium.
- A) Standard Methods, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.: Method 7500-U C;
- BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for uranium by radiochemical and alpha spectrometry in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 7500-U C (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard

8774 Methods for the Examination of Water and Wastewater (the  
8775 printed version of Standard Methods), since the version of Method  
8776 7500-U that appears in that printed volume is that cited by USEPA  
8777 as acceptable for use. USEPA later added Method 7500-U B from  
8778 the 21<sup>st</sup> edition of Standard Methods as an approved alternative  
8779 method in appendix A to subpart C, added on June 3, 2008 (at 73  
8780 Fed. Reg. 31616).

8781  
8782 B) Standard Methods, 20th ed.: Method 3125;

8783  
8784 C) ASTM Methods.

8785  
8786 i) Method D2907-97;

8787  
8788 ii) Method D3972-97 or D3972-02;

8789  
8790 iii) Method D5174-97 or D5174-02; or

8791  
8792 iv) Method D5673-03 or Method 5673-05;

8793  
8794 BOARD NOTE: USEPA added this method as an approved  
8795 alternative method in appendix A to subpart C of 40 CFR 141,  
8796 added on June 3, 2008 (at 73 Fed. Reg. 31616).

8797  
8798 D) USEPA Radioactivity Methods: Methods 908.0, 908.1;

8799  
8800 E) USEPA Environmental Metals Methods: Method 200.8;

8801  
8802 F) USEPA Radiochemical Analyses: page 33;

8803  
8804 G) USEPA Radiochemistry Methods: Method 00-07;

8805  
8806 H) USDOE Manual: Method U-02 or U-04; or

8807  
8808 I) USGS Methods.

8809  
8810 i) Method R-1180-76;

8811  
8812 ii) Method R-1181-76; or

8813  
8814 iii) Method R-1182-76.  
8815

8816 BOARD NOTE: If uranium (U) is determined by mass, a conversion  
 8817 factor of 0.67 pCi/μg of uranium must be used. This conversion factor is  
 8818 based on the 1:1 activity ratio of <sup>234</sup>U and <sup>238</sup>U that is characteristic of  
 8819 naturally occurring uranium.  
 8820

8821 6) Radioactive Cesium.

8822 A) ASTM Methods.

8823 i) Method D2459-72; or

8824 ii) Method D3649-91 or D3649-98a;

8825 B) Standard Methods.

8826 i) Method 7120, 19<sup>th</sup> ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.; or

8827 ii) Method 7500-Cs B, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.;

8828  
 8829  
 8830  
 8831 BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200),  
 8832 USEPA amended the entries for radioactive cesium in the table at  
 8833 corresponding 40 CFR 141.25(a) to allow the use of Standard  
 8834 Methods Online (at www.standardmethods.org), Method 7120 (as  
 8835 approved in 1997) and Method 7500-Cs B (as approved in 2000).  
 8836 The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods  
 8837 for the Examination of Water and Wastewater (the printed version  
 8838 of Standard Methods), since the versions of Method 7120 and  
 8839 Method 7500-Cs that appear in that printed volume are those cited  
 8840 by USEPA as acceptable for use. USEPA later added Method  
 8841 7120 and Method 7500-Cs B from the 21<sup>st</sup> edition of Standard  
 8842 Methods as an approved alternative method in appendix A to  
 8843 subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).  
 8844  
 8845  
 8846  
 8847  
 8848

8849 C) USDOE Manual: Method 4.5.2.3;

8850 D) USEPA Interim Radiochemical Methods: page 4;

8851 E) USEPA Radioactivity Methods: Methods 901.0, 901.1;

8852 F) USEPA Radiochemical Analyses: page 92; or

8853 G) USGS Methods.

8854 i) Method R-1110-76; or

8855  
 8856  
 8857  
 8858  
 8859

8860  
8861  
8862  
8863  
8864  
8865  
8866  
8867  
8868  
8869  
8870  
8871  
8872  
8873  
8874  
8875  
8876  
8877  
8878  
8879  
8880  
8881  
8882  
8883  
8884  
8885  
8886  
8887  
8888  
8889  
8890  
8891  
8892  
8893  
8894  
8895  
8896  
8897  
8898  
8899  
8900  
8901  
8902

- ii) Method R-1111-76.
- 7) Radioactive Iodine.
- A) ASTM Methods.
    - i) D3649-91 or D3649-98a; or
    - ii) D4785-93 or D4785-98;
  - B) Standard Methods.
    - i) Method 7120, 19<sup>th</sup> ~~or 20<sup>th</sup>~~, or 21<sup>st</sup> ed.;
    - ii) Method 7500-I B, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or 20<sup>th</sup>~~, or 21<sup>st</sup> ed.;
    - iii) Method 7500-I C, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or 20<sup>th</sup>~~, or 21<sup>st</sup> ed.; or
    - iv) Method 7500-I D, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or 20<sup>th</sup>~~, or 21<sup>st</sup> ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for radioactive iodine in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 7120 (as approved in 1997) and Method 7500-I B, C, and D (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 7120 and Method 7500-I that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 7500-I B, C, and D from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
  - C) USDOE Manual: Method 4.5.2.3;
  - D) USEPA Interim Radiochemical Methods: pages 6, 9;
  - E) USEPA Radiochemical Analyses: page 92; or
  - F) USEPA Radioactivity Methods: Methods 901.1, 902.0.

8903  
8904  
8905  
8906  
8907  
8908  
8909  
8910  
8911  
8912  
8913  
8914  
8915  
8916  
8917  
8918  
8919  
8920  
8921  
8922  
8923  
8924  
8925  
8926  
8927  
8928  
8929  
8930  
8931  
8932  
8933  
8934  
8935  
8936  
8937  
8938  
8939  
8940  
8941  
8942  
8943  
8944  
8945

8) Radioactive Strontium-89 & 90.

A) Standard Methods.

- i) Method 303, 13<sup>th</sup> ed.; or
- ii) Method 7500-Sr B, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for radioactive strontium in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 7500-Sr B (as approved in 2001). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-Sr that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-Sr B from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

B) USDOE Manual Methods.

- i) Method Sr-01; or
- ii) Method Sr-02;

C) USEPA Interim Radiochemical Methods: page 29;

D) USEPA Radioactivity Methods: Method 905.0;

E) USEPA Radiochemical Analyses: page 65;

F) USEPA Radiochemistry Methods: Method Sr-04; or

G) USGS Methods: Method R-1160-76.

9) Tritium.

A) ASTM Methods: Method D4107-91 or D4107-98;

8946  
8947  
8948  
8949  
8950  
8951  
8952  
8953  
8954  
8955  
8956  
8957  
8958  
8959  
8960  
8961  
8962  
8963  
8964  
8965  
8966  
8967  
8968  
8969  
8970  
8971  
8972  
8973  
8974  
8975  
8976  
8977  
8978  
8979  
8980  
8981  
8982  
8983  
8984  
8985  
8986  
8987  
8988

- B) Standard Methods.
    - i) Method 306, 13<sup>th</sup> ed.; or
    - ii) Method 7500-<sup>3</sup>H B, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entry for tritium in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 7500-<sup>3</sup>H B (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the version of Method 7500-<sup>3</sup>H that appears in that printed volume is that cited by USEPA as acceptable for use. USEPA later added Method 7500-<sup>3</sup>H B from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).
  - C) USEPA Interim Radiochemical Methods: page 34;
  - D) USEPA Radioactivity Methods: Method 906.0;
  - E) USEPA Radiochemical Analyses: page 87;
  - F) USEPA Radiochemistry Methods: Method H-02; or
  - G) USGS Methods: Method R-1171-76.
- 10) Gamma Emitters.
- A) ASTM Methods.
    - i) Method D3649-91 or D3649-98a; or
    - ii) Method D4785-93 or D4785-00a;
  - B) Standard Methods.
    - i) Method 7120, 19<sup>th</sup> ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.;
    - ii) Method 7500-Cs B, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, ~~or~~ 20<sup>th</sup>, or 21<sup>st</sup> ed.; or



8989  
8990  
8991  
8992  
8993  
8994  
8995  
8996  
8997  
8998  
8999  
9000  
9001  
9002  
9003  
9004  
9005  
9006  
9007  
9008  
9009  
9010  
9011  
9012  
9013  
9014  
9015  
9016  
9017  
9018  
9019  
9020  
9021  
9022  
9023  
9024  
9025  
9026  
9027  
9028  
9029  
9030  
9031

iii) Method 7500-I B, 17<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, or 20<sup>th</sup>, or 21<sup>st</sup> ed.;

BOARD NOTE: On March 12, 2007 (at 72 Fed. Reg. 11200), USEPA amended the entries for gamma emitters in the table at corresponding 40 CFR 141.25(a) to allow the use of Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method 7120 (as approved in 1997), Method 7500-Cs B (as approved in 2000), and Method 7500-I B (as approved in 2000). The Board has instead cited to the 21<sup>st</sup> edition of Standard Methods for the Examination of Water and Wastewater (the printed version of Standard Methods), since the versions of Method 7120, Method 7500-Cs, and Method 7500-I that appear in that printed volume are those cited by USEPA as acceptable for use. USEPA later added Method 7150, Method 7500-Cs B, and Method 7500-I B from the 21<sup>st</sup> edition of Standard Methods as an approved alternative method in appendix A to subpart C, added on June 3, 2008 (at 73 Fed. Reg. 31616).

- C) USDOE Manual: Method Ga-01-R;
- D) USEPA Radioactivity Methods: Methods 901.0, 901.1, or 902.0;
- E) USEPA Radiochemical Analyses: page 92; or
- F) USGS Methods: Method R-1110-76.

b) When the identification and measurement of radionuclides other than those listed in subsection (a) of this Section are required, the following methods, incorporated by reference in Section 611.102, are to be used, except in cases where alternative methods have been approved in accordance with Section 611.480:

- 1) "Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions," available from NTIS.
- 2) HASL Procedure Manual, HASL 300, available from ERDA Health and Safety Laboratory.

c) For the purpose of monitoring radioactivity concentrations in drinking water, the required sensitivity of the radioanalysis is defined in terms of a detection limit. The detection limit must be that concentration which can be counted with a precision of plus or minus 100 percent at the 95 percent confidence level ( $1.96\sigma$ , where  $\sigma$  is the standard deviation of the net counting rate of the sample).

9032  
9033  
9034  
9035  
9036

- 1) To determine compliance with Section 611.330(b), (c), and (e), the detection limit must not exceed the concentrations set forth in the following table:

Contaminant	Detection Limit
Gross alpha particle activity	3 pCi/ℓ
Radium-226	1 pCi/ℓ
Radium-228	1 pCi/ℓ
Uranium	1 µg/ℓ

9037  
9038  
9039  
9040  
9041  
9042

BOARD NOTE: Derived from 40 CFR 141.25(c) Table B(2007)(2005).

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

Radionuclide	Detection Limit
Tritium	1,000 pCi/ℓ
Strontium-89	10 pCi/ℓ
Strontium-90	2 pCi/ℓ
Iodine-131	1 pCi/ℓ
Cesium-134	10 pCi/ℓ
Gross beta	4 pCi/ℓ
Other radionuclides	1/10 of applicable limit

9043  
9044  
9045  
9046  
9047  
9048  
9049

BOARD NOTE: Derived from 40 CFR 141.25(c) Table C(2007)(2005).

- d) To judge compliance with the MCLs listed in Section 611.330, averages of data must be used and must be rounded to the same number of significant figures as the MCL for the substance in question.

9050 BOARD NOTE: Derived from 40 CFR 141.25 (2007) and appendix A to 40 CFR 141, as added  
9051 at 73 Fed. Reg. 31616 (June 3, 2008)(2005).

9052

(Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

9054

SUBPART S: GROUNDWATER RULE

9056

**Section 611.802 Groundwater Source Microbial Monitoring and Analytical Methods**

9058

- a) Triggered source water monitoring.

9060

- 9061  
9062  
9063  
9064  
9065  
9066  
9067  
9068  
9069  
9070  
9071  
9072  
9073  
9074  
9075  
9076  
9077  
9078  
9079  
9080  
9081  
9082  
9083  
9084  
9085  
9086  
9087  
9088  
9089  
9090  
9091  
9092  
9093  
9094  
9095  
9096  
9097  
9098  
9099  
9100  
9101  
9102  
9103
- 1) General requirements. A GWS supplier must conduct triggered source water monitoring if the following conditions exist:
    - A) The supplier does not provide at least 4-log treatment of viruses (using inactivation, removal, or an Agency-approved combination of 4-log virus inactivation and removal) before or at the first customer for each groundwater source; and
    - B) The supplier is notified that a sample collected pursuant to Section 611.521 is total coliform-positive, and the sample is not invalidated by the Agency pursuant to Section 611.523.
  - 2) Sampling requirements. A GWS supplier must collect, within 24 hours after notification of the total coliform-positive sample, at least one groundwater source sample from each groundwater source in use at the time the total coliform-positive sample was collected pursuant to Section 611.521, except as provided in subsection (a)(2)(B) of this Section.
    - A) The Agency may, by a SEP issued pursuant to Section 611.110, extend the 24-hour time limit on a case-by-case basis if it determines that the supplier cannot collect the groundwater source water sample within 24 hours due to circumstances beyond the supplier's control. In the case of an extension, the Agency must specify how much time the supplier has to collect the sample.
    - B) If approved by the Agency, a supplier with more than one groundwater source may meet the requirements of this subsection (a)(2) by sampling a representative groundwater source or sources. If directed by the Agency by a SEP issued pursuant to Section 611.110, the supplier must submit for Agency approval a triggered source water monitoring plan that identifies one or more groundwater sources that are representative of each monitoring site in the system's sample siting plan pursuant to Section 611.521 and that the system intends to use for representative sampling pursuant to this subsection (a).
    - C) A GWS supplier that serves 1,000 or fewer people may use a repeat sample collected from a groundwater source to meet both the requirements of Section 611.522 and to satisfy the monitoring requirements of subsection (a)(2) of this Section for that groundwater source only if the Agency approves the use of E. coli as a fecal indicator for source water monitoring pursuant to this subsection (a) by a SEP issued pursuant to Section 611.110. If the

9104 repeat sample collected from the groundwater source is E.coli  
9105 positive, the system must comply with subsection (a)(3) of this  
9106 Section.  
9107

9108 3) Additional requirements. If the Agency does not require corrective action  
9109 pursuant to Section 611.803(a)(2) for a fecal indicator-positive source  
9110 water sample collected pursuant to subsection (a)(2) of this Section that is  
9111 not invalidated pursuant to subsection (d) of this Section, the system must  
9112 collect five additional source water samples from the same source within  
9113 24 hours after being notified of the fecal indicator-positive sample.  
9114

9115 4) Consecutive and wholesale systems.  
9116

9117 A) In addition to the other requirements of this subsection (a), a  
9118 consecutive GWS supplier that has a total coliform-positive sample  
9119 collected pursuant to Section 611.521 must notify the wholesale  
9120 systems within 24 hours after being notified of the total coliform-  
9121 positive sample.  
9122

9123 B) In addition to the other requirements of this subsection (a), a  
9124 wholesale GWS supplier must comply with the following  
9125 requirements:  
9126

9127 i) A wholesale GWS supplier that receives notice from a  
9128 consecutive system it serves that a sample collected  
9129 pursuant to Section 611.521 is total coliform-positive must,  
9130 within 24 hours after being notified, collect a sample from  
9131 its groundwater sources pursuant to subsection (a)(2) of this  
9132 Section and analyze it for a fecal indicator pursuant to  
9133 subsection (c) of this Section.  
9134

9135 ii) If the sample collected pursuant to subsection (a)(4)(B)(i)  
9136 of this section is fecal indicator-positive, the wholesale  
9137 GWS supplier must notify all consecutive systems served  
9138 by that groundwater source of the fecal indicator source  
9139 water positive within 24 hours of being notified of the  
9140 groundwater source sample monitoring result and must  
9141 meet the requirements of subsection (a)(3) of this Section.  
9142

9143 5) Exceptions to the triggered source water monitoring requirements. A  
9144 GWS supplier is not required to comply with the source water monitoring  
9145 requirements of subsection (a) of this Section if either of the following  
9146 conditions exists:

9147  
9148  
9149  
9150  
9151  
9152  
9153  
9154  
9155  
9156  
9157  
9158  
9159  
9160  
9161  
9162  
9163  
9164  
9165  
9166  
9167  
9168  
9169  
9170  
9171  
9172  
9173  
9174  
9175  
9176  
9177  
9178  
9179  
9180  
9181  
9182  
9183  
9184  
9185  
9186  
9187  
9188  
9189

- A) The Agency determines, and documents in writing, by a SEP issued pursuant to Section 611.110, that the total coliform-positive sample collected pursuant to Section 611.521 is caused by a distribution system deficiency; or
  - B) The total coliform-positive sample collected pursuant to Section 611.521 is collected at a location that meets Agency criteria for distribution system conditions that will cause total coliform-positive samples.
- b) Assessment source water monitoring. If directed by the Agency by a SEP issued pursuant to Section 611.110, a GWS supplier must conduct assessment source water monitoring that meets Agency-determined requirements for such monitoring. A GWS supplier conducting assessment source water monitoring may use a triggered source water sample collected pursuant to subsection (a)(2) of this Section to meet the requirements of subsection (b) of this Section. Agency-determined assessment source water monitoring requirements may include the following:
- 1) Collection of a total of 12 groundwater source samples that represent each month the system provides groundwater to the public;
  - 2) Collection of samples from each well, unless the system obtains written Agency approval to conduct monitoring at one or more wells within the GWS that are representative of multiple wells used by that system and which draw water from the same hydrogeologic setting;
  - 3) Collection of a standard sample volume of at least 100 ml for fecal indicator analysis, regardless of the fecal indicator or analytical method used;
  - 4) Analysis of all groundwater source samples using one of the analytical methods listed in subsection (c)(2) of this Section for the presence of E. coli, enterococci, or coliphage;
  - 5) Collection of groundwater source samples at a location prior to any treatment of the groundwater source unless the Agency approves a sampling location after treatment; and
  - 6) Collection of groundwater source samples at the well itself, unless the system's configuration does not allow for sampling at the well itself and the Agency approves an alternate sampling location by a SEP issued



9233 A to subpart C of 40 CFR 141, which authorized alternative  
 9234 methods to those listed for E. coli by Colilert and Colisure and  
 9235 added Colilert-18 in the table at corresponding 40 CFR  
 9236 141.402(c)(2) to allow the use of the 21<sup>st</sup> edition of Standard  
 9237 Methods for the Examination of Water and Wastewater and  
 9238 Standard Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method  
 9239 9223 B (as approved in 1997). The Board has instead cited only to  
 9240 the 21<sup>st</sup> edition of Standard Methods for the Examination of Water  
 9241 and Wastewater (the printed version of Standard Methods), since  
 9242 the version of Method 9223 B that appears in that printed volume  
 9243 is that cited by USEPA as acceptable for use. USEPA also added  
 9244 the version of Method 9223 B that appears in the 20<sup>th</sup> edition of  
 9245 Standard Methods as to Colilert-18.

9246  
 9247 B) Enterococci:

9248  
 9249 i) Multiple-Tube Technique, Standard Methods, 20<sup>th</sup> ed.,  
 9250 Method 9230 B or Standard Methods Online, Method 9230  
 9251 B.

9252  
 9253 BOARD NOTE: On June 3, 2008 (at 73 Fed. Reg. 31616),  
 9254 USEPA added appendix A to subpart C of 40 CFR 141,  
 9255 which authorized alternative methods to those listed for  
 9256 enterococci by multiple-tube technique at corresponding 40  
 9257 CFR 141.402(c)(2) to allow the use of the Standard  
 9258 Methods Online (at [www.standardmethods.org](http://www.standardmethods.org)), Method  
 9259 9230 B (as approved in 2004).

9260  
 9261 ii) Membrane Filter Technique, Standard Methods, 20<sup>th</sup> ed.,  
 9262 Method 9230 C, and USEPA Method 1600.

9263  
 9264 BOARD NOTE: The holding time and temperature for  
 9265 groundwater samples are specified in subsection (c)(2)(D)  
 9266 of this Section, rather than as specified in Section 8 of  
 9267 USEPA Method 1600.

9268  
 9269 iii) Enterolert.

9270  
 9271 BOARD NOTE: Medium is available through IDEXX  
 9272 Laboratories, Inc., at the address set forth in Section  
 9273 611.102(b). Preparation and use of the medium must be as  
 9274 set forth in the article that embodies the method as  
 9275 incorporated by reference in Section 611.102(b).

9276  
9277  
9278  
9279  
9280  
9281  
9282  
9283  
9284  
9285  
9286  
9287  
9288  
9289  
9290  
9291  
9292  
9293  
9294  
9295  
9296  
9297  
9298  
9299  
9300  
9301  
9302  
9303  
9304  
9305  
9306  
9307  
9308  
9309  
9310  
9311  
9312  
9313  
9314  
9315  
9316  
9317

- C) Coliphage:
    - i) Two-Step Enrichment Presence-Absence Procedure, USEPA Method 1601.
    - ii) Single Agar Layer Procedure, USEPA Method 1602.
  - D) Limitation on methods use. The time from sample collection to initiation of analysis may not exceed 30 hours. The GWS supplier is encouraged but is not required to hold samples below 10°C during transit.
- d) Invalidation of a fecal indicator-positive groundwater source sample.
- 1) A GWS supplier may obtain Agency invalidation of a fecal indicator-positive groundwater source sample collected pursuant to subsection (a) of this Section only under either of the following conditions:
    - A) The supplier provides the Agency with written notice from the laboratory that improper sample analysis occurred; or
    - B) The Agency determines and documents in writing by a SEP issued pursuant to Section 611.110 that there is substantial evidence that a fecal indicator-positive groundwater source sample is not related to source water quality.
  - 2) If the Agency invalidates a fecal indicator-positive groundwater source sample, the GWS supplier must collect another source water sample pursuant to subsection (a) of this Section within 24 hours after being notified by the Agency of its invalidation decision, and the supplier must have it analyzed for the same fecal indicator using the analytical methods in subsection (c) of this Section. The Agency may extend the 24-hour time limit on a case-by-case basis if the supplier cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the Agency must specify how much time the system has to collect the sample.
- e) Sampling location.
- 1) Any groundwater source sample required pursuant to subsection (a) of this Section must be collected at a location prior to any treatment of the



- 9318 groundwater source unless the Agency approves a sampling location after  
9319 treatment.
- 9320
- 9321 2) If the supplier's system configuration does not allow for sampling at the  
9322 well itself, it may collect a sample at an Agency-approved location to meet  
9323 the requirements of subsection (a) of this Section if the sample is  
9324 representative of the water quality of that well.
- 9325
- 9326 f) New sources. If directed by the Agency by a SEP issued pursuant to Section  
9327 611.110, a GWS supplier that places a new groundwater source into service after  
9328 November 30, 2009 must conduct assessment source water monitoring pursuant  
9329 to subsection (b) of this Section. If directed by the SEP, the system must begin  
9330 monitoring before the groundwater source is used to provide water to the public.
- 9331
- 9332 g) Public Notification. A GWS supplier with a groundwater source sample collected  
9333 pursuant to subsection (a) or (b) of this Section that is fecal indicator-positive and  
9334 which is not invalidated pursuant to subsection (d) of this Section, including a  
9335 consecutive system supplier served by the groundwater source, must conduct  
9336 public notification pursuant to Section 611.902.
- 9337
- 9338 h) Monitoring Violations. A failure to meet the requirements of subsections (a)  
9339 through (f) of this Section is a monitoring violation that requires the GWS  
9340 supplier to provide public notification pursuant to Section 611.904.
- 9341

9342 BOARD NOTE: Derived from 40 CFR 141.402 (2007) and appendix A to 40 CFR 141,  
9343 as added at 73 Fed. Reg. 31616 (June 3, 2008), as added at 71 Fed. Reg. 65574 (Nov. 8,  
9344 2006).

9345

9346 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

9347

9348 SUBPART U: CONSUMER CONFIDENCE REPORTS

9349

9350 **Section 611.884 Required Additional Health Information**

9351

- 9352 a) All reports must prominently display the following language: "Some people may  
9353 be more vulnerable to contaminants in drinking water than the general population.  
9354 Immuno-compromised persons such as persons with cancer undergoing  
9355 chemotherapy, persons who have undergone organ transplants, people with  
9356 HIV/AIDS or other immune system disorders, some elderly, and infants can be  
9357 particularly at risk from infections. These people should seek advice about  
9358 drinking water from their health care providers. USEPA or Centers for Disease  
9359 Control and Prevention guidelines on appropriate means to lessen the risk of  
9360 infection by Cryptosporidium and other microbial contaminants are available

- 9361 from the USEPA Safe Drinking Water Hotline (800-426-4791)."
- 9362
- 9363 b) A supplier that detects arsenic above 0.005 mg/ℓ and up to and including 0.010
- 9364 mg/ℓ must do the following:
- 9365
- 9366 1) The supplier must include in its report a short informational statement
- 9367 about arsenic, using the following language: "While your drinking water
- 9368 meets USEPA's standard for arsenic, it does contain low levels of arsenic.
- 9369 USEPA's standard balances the current understanding of arsenic's possible
- 9370 health effects against the costs of removing arsenic from drinking water.
- 9371 USEPA continues to research the health effects of low levels of arsenic,
- 9372 which is a naturally-occurring mineral known to cause cancer in humans
- 9373 at high concentrations and is linked to other health effects such as skin
- 9374 damage and circulatory problems."; or
- 9375
- 9376 2) The supplier may write its own educational statement, but only in
- 9377 consultation with the Agency.
- 9378
- 9379 c) A supplier that detects nitrate at levels above 5 mg/ℓ, but below the MCL, must
- 9380 do the following:
- 9381
- 9382 1) The supplier must include a short informational statement about the
- 9383 impacts of nitrate on children, using the following language: "Nitrate in
- 9384 drinking water at levels above 10 ppm is a health risk for infants of less
- 9385 than six months of age. High nitrate levels in drinking water can cause
- 9386 blue baby syndrome. Nitrate levels may rise quickly for short periods of
- 9387 time because of rainfall or agricultural activity. If you are caring for an
- 9388 infant you should ask advice from your health care provider"; or
- 9389
- 9390 2) The CWS supplier may write its own educational statement, but only in
- 9391 consultation with the Agency.
- 9392
- 9393 ~~d) A CWS supplier that detects lead above the action level in more than five percent,~~
- 9394 ~~and up to and including ten percent, of homes sampled must do the following:~~
- 9395
- 9396 d) Every report must include the following lead-specific information:
- 9397
- 9398 ~~1) The CWS supplier must include a short informational statement about the~~
- 9399 ~~special impact of lead on children, using the following language: "Infants~~
- 9400 ~~and young children are typically more vulnerable to lead in drinking water~~
- 9401 ~~than the general population. It is possible that lead levels at your home~~
- 9402 ~~may be higher than at other homes in the community as a result of~~
- 9403 ~~materials used in your home's plumbing. If you are concerned about~~

9404 elevated lead levels in your home's water, you may wish to have your  
9405 water tested and flush your tap for 30 seconds to two minutes before using  
9406 tap water. Additional information is available from the USEPA Safe  
9407 Drinking Water Hotline (800-426-4791)"; or  
9408

- 9409 1) A short informational statement about lead in drinking water and its  
9410 effects on children. The statement must include the following  
9411 information:  
9412

9413 If present, elevated levels of lead can cause serious health  
9414 problems, especially for pregnant women and young children.  
9415 Lead in drinking water is primarily from materials and components  
9416 associated with service lines and home plumbing. [NAME OF  
9417 SUPPLIER] is responsible for providing high quality drinking  
9418 water, but cannot control the variety of materials used in plumbing  
9419 components. When your water has been sitting for several hours,  
9420 you can minimize the potential for lead exposure by flushing your  
9421 tap for 30 seconds to two minutes before using water for drinking  
9422 or cooking. If you are concerned about lead in your water, you  
9423 may wish to have your water tested. Information on lead in  
9424 drinking water, testing methods, and steps you can take to  
9425 minimize exposure is available from the Safe Drinking Water  
9426 Hotline or at <http://www.epa.gov/safewater/lead>.  
9427

- 9428 2) ~~The CWS supplier may write its own educational statement, but only in~~  
9429 ~~consultation with the Agency.~~  
9430

- 9431 2) A supplier may write its own educational statement, but only in  
9432 consultation with the Agency.  
9433

- 9434 e) A CWS supplier that detects TTHM above 0.080 mg/l, but below the MCL in  
9435 Section 611.312, as an annual average, monitored and calculated under the  
9436 provisions of former Section 611.680, must include the health effects language  
9437 prescribed by Appendix A of this Part.  
9438

- 9439 f) Until January 22, 2006, a CWS supplier that detects arsenic above 0.010 mg/l and  
9440 up to and including 0.05 mg/l must include the arsenic health effects language  
9441 prescribed by Appendix A to this Part.  
9442

9443 BOARD NOTE: Derived from 40 CFR 141.154 (2007), as amended at 72 Fed. Reg.  
9444 7782 (October 12, 2007)(2003).

9445  
9446 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

SUBPART Z: ENHANCED TREATMENT FOR CRYPTOSPORIDIUM

**Section 611.1004 Source Water Monitoring Requirements: Analytical Methods**

- a) Cryptosporidium. A supplier must analyze for Cryptosporidium using USEPA OGWDW Methods, Method 1623 (05) or USEPA OGWDW Methods, Method 1622 (05), each incorporated by reference in Section 611.102.
  - 1) The supplier must analyze at least a 10 ℓ sample or a packed pellet volume of at least 2 mℓ as generated by the methods listed in subsection (a) of this Section. A supplier unable to process a 10 ℓ sample must analyze as much sample volume as can be filtered by two filters approved by USEPA for the methods listed in subsection (a) of this Section, up to a packed pellet volume of at least 2 mℓ.
  - 2) Matrix spike (MS) samples.
    - A) MS samples, as required by the methods in subsection (a) of this Section, must be spiked and filtered by a laboratory approved for Cryptosporidium analysis pursuant to Section 611.1005.
    - B) If the volume of the MS sample is greater than 10 ℓ, the supplier may filter all but 10 ℓ of the MS sample in the field, and ship the filtered sample and the remaining 10 ℓ of source water to the laboratory. In this case, the laboratory must spike the remaining 10 ℓ of water and filter it through the filter used to collect the balance of the sample in the field.
  - 3) Flow cytometer-counted spiking suspensions must be used for MS samples and ongoing precision and recovery samples.
- b) E. coli. A supplier must use methods for enumeration of E. coli in source water approved in 40 CFR 136.3(a), incorporated by reference in Section 611.102.
  - 1) The time from sample collection to initiation of analysis may not exceed 30 hours, unless the supplier meets the condition of subsection (b)(2) of this Section.
  - 2) The Agency may, by a SEP issued pursuant to Section 611.110, approve on a case-by-case basis the holding of an E. coli sample for up to 48 hours between sample collection and initiation of analysis if it determines that analyzing an E. coli sample within 30 hours is not feasible. E. coli

9490 samples held between 30 to 48 hours must be analyzed by the  
9491 Autoanalysis Colilert System reagent version of Standard Methods, 18<sup>th</sup>,  
9492 19<sup>th</sup>, or 20<sup>th</sup> ed., Method 9223 B, as listed in 40 CFR 136.3(a),  
9493 incorporated by reference in Section 611.102.  
9494

9495 3) A supplier must maintain the temperature of its samples between 0°C and  
9496 10°C during storage and transit to the laboratory.  
9497

9498 4) The supplier may use the membrane filtration, two-step procedure  
9499 described in Standard Methods, 20<sup>th</sup> ed., Method 9222 D and G,  
9500 incorporated by reference in Section 611.102.  
9501

9502 BOARD NOTE: On June 3, 2008 (at 73 Fed. Reg. 31616), USEPA added  
9503 appendix A to subpart C of 40 CFR 141, which authorized alternative  
9504 methods to those listed for E. coli by multiple-tube technique at  
9505 corresponding 40 CFR 141.402(c)(2) to allow the use of Standard  
9506 Methods for the Examination of Water and Wastewater, Method 9222 D  
9507 and G.  
9508

9509 c) Turbidity. A supplier must use methods for turbidity measurement approved in  
9510 Section 611.531(a).  
9511

9512 BOARD NOTE: Derived from 40 CFR 141.704 (2007) and appendix A to 40 CFR 141, as  
9513 added at 73 Fed. Reg. 31616 (June 3, 2008)(2006).  
9514

9515 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)  
9516

9517 **Section 611.1007 Source Water Monitoring Requirements: Grandfathering Previously**  
9518 **Collected Data**  
9519

9520 a) Initial source monitoring and Cryptosporidium samples.  
9521

9522 1) A supplier may comply with the initial source water monitoring  
9523 requirements of Section 611.1001(a) by grandfathering sample results  
9524 collected before the supplier is required to begin monitoring (i.e.,  
9525 previously collected data). To be grandfathered, the sample results and  
9526 analysis must meet the criteria in this Section and the Agency must  
9527 approve the use of the data by a SEP issued pursuant to Section 611.110.  
9528

9529 2) A filtered system supplier may grandfather Cryptosporidium samples to  
9530 meet the requirements of Section 611.1001(a) when the supplier does not  
9531 have corresponding E. coli and turbidity samples. A supplier that  
9532 grandfathers Cryptosporidium samples without E. coli and turbidity

- 9533 samples is not required to collect E. coli and turbidity samples when it  
 9534 completes the requirements for Cryptosporidium monitoring pursuant to  
 9535 Section 611.1001(a).  
 9536
- b) E. coli sample analysis. The analysis of E. coli samples must meet the analytical  
 9537 method and approved laboratory requirements of Sections 611.1004 and  
 9538 611.1005.  
 9539  
 9540
- c) Cryptosporidium sample analysis. The analysis of Cryptosporidium samples must  
 9541 meet the criteria in this subsection (c).  
 9542  
 9543
- 1) Laboratories analyzed Cryptosporidium samples using one of the  
 9544 following analytical methods:  
 9545  
 9546
- A) USEPA OGWDW Methods, Method 1623 (05), incorporated by  
 9547 reference in Section 611.102;  
 9548  
 9549
- B) USEPA OGWDW Methods, Method 1622 (05), incorporated by  
 9550 reference in Section 611.102;  
 9551  
 9552
- C) USEPA OGWDW Methods, Method 1623 (01), incorporated by  
 9553 reference in Section 611.102;  
 9554  
 9555
- D) USEPA OGWDW Methods, Method 1622 (01), incorporated by  
 9556 reference in Section 611.102;  
 9557  
 9558
- E) USEPA OGWDW Methods, Method 1623 (99), incorporated by  
 9559 reference in Section 611.102; or  
 9560  
 9561
- F) USEPA OGWDW Methods, Method 1622 (99), incorporated by  
 9562 reference in Section 611.102.  
 9563  
 9564
- 2) For each Cryptosporidium sample, the laboratory analyzed at least 10 ℓ of  
 9565 sample or at least 2 ml of packed pellet or as much volume as could be  
 9566 filtered by two filters that USEPA approved for the methods listed in  
 9567 subsection (c)(1) of this Section.  
 9568  
 9569
- d) Sampling location. The sampling location must meet the conditions in Section  
 9570 611.1003.  
 9571  
 9572
- e) Sampling frequency. Cryptosporidium samples were collected no less frequently  
 9573 than each calendar month on a regular schedule, beginning no earlier than January  
 9574 1999. Sample collection intervals may vary for the conditions specified in  
 9575

9576 Section 611.1002(b)(1) and (b)(2) if the supplier provides documentation of the  
 9577 condition when reporting monitoring results.

9578  
 9579 1) The Agency may, by a SEP issued pursuant to Section 611.110, approve  
 9580 grandfathering of previously collected data where there are time gaps in  
 9581 the sampling frequency if the supplier conducts additional monitoring that  
 9582 the Agency has specified by a SEP issued pursuant to Section 611.110 to  
 9583 ensure that the data used to comply with the initial source water  
 9584 monitoring requirements of Section 611.1001(a) are seasonally  
 9585 representative and unbiased.

9586  
 9587 2) A supplier may grandfather previously collected data where the sampling  
 9588 frequency within each month varied. If the Cryptosporidium sampling  
 9589 frequency varied, the supplier must follow the monthly averaging  
 9590 procedure in Section 611.1010(b)(5) or Section 611.1012(a)(3), as  
 9591 applicable, when calculating the bin classification for a filtered system  
 9592 supplier or the mean Cryptosporidium concentration for an unfiltered  
 9593 system supplier.

9594  
 9595 f) Reporting monitoring results for grandfathering. A supplier that requests to  
 9596 grandfather previously collected monitoring results must report the following  
 9597 information by the applicable dates listed in this subsection. A supplier must  
 9598 report this information to the Agency.

9599  
 9600 1) A supplier must report that it intends to submit previously collected  
 9601 monitoring results for grandfathering. This report must specify the  
 9602 number of previously collected results the supplier will submit, the dates  
 9603 of the first and last sample, and whether a supplier will conduct additional  
 9604 source water monitoring to meet the requirements of Section 611.1001(a).  
 9605 The supplier must report this information no later than the applicable date  
 9606 set forth in Section 611.1002.

9607  
 9608 2) A supplier must report previously collected monitoring results for  
 9609 grandfathering, along with the associated documentation listed in  
 9610 subsections (f)(2)(A) through (f)(2)(D) of this Section, no later than two  
 9611 months after the applicable date listed in Section 611.1001(c).

9612  
 9613 A) For each sample result, a supplier must report the applicable data  
 9614 elements in Section 611.1006.

9615  
 9616 B) A supplier must certify that the reported monitoring results include  
 9617 all results that it generated during the time period beginning with  
 9618 the first reported result and ending with the final reported result.

9619 This applies to samples that were collected from the sampling  
9620 location specified for source water monitoring pursuant to this  
9621 Subpart Z, which were not spiked, and which were analyzed using  
9622 the laboratory's routine process for the analytical methods listed in  
9623 this Section.

9624  
9625 C) The supplier must certify that the samples were representative of a  
9626 plant's source waters and the source waters have not changed. It  
9627 must report a description of the sampling locations, which must  
9628 address the position of the sampling location in relation to its water  
9629 sources and treatment processes, including points of chemical  
9630 addition and filter backwash recycle.

9631  
9632 D) For Cryptosporidium samples, the laboratory or laboratories that  
9633 analyzed the samples must provide a letter certifying that the  
9634 quality control criteria specified in the methods listed in subsection  
9635 (c)(1) of this Section were met for each sample batch associated  
9636 with the reported results. Alternatively, the laboratory may  
9637 provide bench sheets and sample examination report forms for  
9638 each field, matrix spike, initial precision and recovery, ongoing  
9639 precision and recovery, and method blank sample associated with  
9640 the reported results.

9641  
9642 g) If the Agency determines that a previously collected data set submitted for  
9643 grandfathering was generated during source water conditions that were not normal  
9644 for the supplier, such as a drought, the Agency may, by a SEP issued pursuant to  
9645 Section 611.110, disapprove the data. Alternatively, the Agency may, by a SEP  
9646 issued pursuant to Section 611.110, approve the previously collected data if the  
9647 supplier reports additional source water monitoring data, as determined by the  
9648 Agency, to ensure that the data set used pursuant to Section 611.1010 or Section  
9649 611.1012 represents average source water conditions for the supplier.

9650  
9651 h) If a supplier submits previously collected data that fully meet the number of  
9652 samples required for initial source water monitoring pursuant to Section  
9653 611.1001(a), and some of the data are rejected due to not meeting the  
9654 requirements of this Section, the supplier must conduct additional monitoring to  
9655 replace rejected data on a schedule that the Agency has approved by a SEP issued  
9656 pursuant to Section 611.110. A supplier is not required to begin this additional  
9657 monitoring until two months after notification that data have been rejected and  
9658 additional monitoring is necessary.

9659  
9660 BOARD NOTE: Derived from 40 CFR 141.707 (2007)~~(2006)~~.

9661



9662 (Source: Amended at 32 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)