

APPENDIX G
ENHANCED TREATMENT FOR *CRYPTOSPORIDIUM*

2401-G

A. ANALYTICAL METHODS

1. *CRYPTOSPORIDIUM* Systems must analyze for *Cryptosporidium* using Method 1623: *Cryptosporidium and Giardia in Water by Filtration/IMS/FA, 2005*, United States Environmental Protection Agency, EPA-815-R-05-002 or Method 1622: *Cryptosporidium in Water by Filtration/IMS/FA, 2005*, United States Environmental Protection Agency, EPA-815-R-05-001, which are incorporated by reference, or alternative methods listed in Appendix A to subpart C of 40 C.F.R. pt. 141. You may obtain a copy of these methods online from <http://www.epa.gov/safewater/disinfection/lt2> or from the United States Environmental Protection Agency, Office of Ground Water and Drinking Water, 1201 Constitution Ave., NW, Washington, DC 20460 (Telephone: 800-426-4791). You may inspect a copy at the Water Docket in the EPA Docket Center, 1301 Constitution Ave., NW, Washington, DC, (Telephone: 202-566-2426) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.
 - a. Systems 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 paragraph (A) of this section. Systems unable to process a 10 L sample must analyze as much sample volume as can be filtered by two filters approved by EPA for the methods listed in paragraph (A) of this section, up to a packed pellet volume of at least 2 mL.
 - b.
 1. Matrix spike (MS) samples, as required by the methods in paragraph (A) of this section, must be spiked and filtered by a laboratory approved for *Cryptosporidium* analysis under § 2406.
 2. If the volume of the MS sample is greater than 10 L, the system 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.
 - c. Flow cytometer-counted spiking suspensions must be used for MS samples and ongoing precision and recovery (OPR) samples.
2. **E. COLI.** Systems must use methods for enumeration of *E. coli* in source water approved in 40 CFR §136.3(a) or alternative methods listed in Appendix A to subpart C of 40 C.F.R. Part. 141.
 - a. The time from sample collection to initiation of analysis may not exceed 30 hours unless the system meets the condition of paragraph (B)(2) of this section.
 - b. The Director may 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 the Director determines that analyzing an *E. coli* sample within 30 hours is not feasible. *E. coli* samples held between 30 to 48 hours must be analyzed by the Colilert reagent version of Standard Method 9223B as listed in 40 CFR §136.3(a) of this title.
3. Systems must maintain samples between 0°C and 10°C during storage and transit to the laboratory.
4. **TURBIDITY.** Systems must use methods for turbidity measurement approved in Appendix D § 801(D)(A)(1).

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A. Approved laboratories.

1. *Cryptosporidium*. Systems must have *Cryptosporidium* samples analyzed by a laboratory that is approved under EPA's Laboratory Quality Assurance Evaluation Program for Analysis of *Cryptosporidium* in Water or a laboratory that has been certified for *Cryptosporidium* analysis by an equivalent State laboratory certification program.

2. E. coli. Any laboratory certified by the EPA, the National Environmental Laboratory Accreditation Conference or the State for total coliform or fecal coliform analysis under Appendix D § 801-D(A) is approved for E. coli analysis under this subpart when the laboratory uses the same technique for E. coli that the laboratory uses for Appendix D § 801-D(A).
3. Turbidity. Measurements of turbidity must be made by a party approved by the Director.

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A. E. coli sample analysis.

1. The analysis of E. coli samples must meet the analytical method and approved laboratory requirements of Appendix G §§ 2401 and 2402.

2404 -G

A. Cryptosporidium sample analysis. The analysis of Cryptosporidium samples must meet the criteria in this paragraph.

1. Laboratories analyzed Cryptosporidium samples using one of the analytical methods in paragraphs (1)(a) through (f) of this subsection, which are incorporated by reference. You may obtain a copy of these methods on-line from the United States Environmental Protection Agency, Office of Ground Water and Drinking Water, 1201 Constitution Ave, NW, Washington, DC 20460 (Telephone: 800-426-4791). You may inspect a copy at the Water Docket in the EPA Docket Center, 1301 Constitution Ave., NW, Washington, DC, (Telephone: 202-566-2426) or at the National Archives and Records Administration (NARA). For information on the availability of this material, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.
 - a. *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA, 2005*, United States Environmental Protection Agency, EPA-815-R-05-002.
 - b. *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA, 2005*, United States Environmental Protection Agency, EPA-815-R-05-001.
 - c. *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA, 2001*, United States Environmental Protection Agency, EPA-821-R-01-025.
 - d. *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA, 2001*, United States Environmental Protection Agency, EPA-821-R-01-026.
 - e. *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA, 1999*, United States Environmental Protection Agency, EPA-821-R-99-006.
 - f. *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA, 1999*, United States Environmental Protection Agency, EPA-821-R-99-001.
2. For each Cryptosporidium sample, the laboratory analyzed at least 10 L of sample or at least 2 mL of packed pellet or as much volume as could be filtered by 2 filters that EPA approved for the methods listed in subsection(A)(1) of this section.