

requirements to verify operational practices. Systems collecting samples after a bank filtration process may not receive credit for the bank filtration under § 141.726(c).

(2) Systems using bank filtration as an alternative filtration demonstration to meet their *Cryptosporidium* removal requirements under § 141.173(b) or § 141.552(a), as applicable, must collect source water samples in the surface water (*i.e.*, prior to bank filtration).

(3) Systems using a ground water source under the direct influence of surface water that meet all the criteria for avoiding filtration in § 141.71 and that do not provide filtration treatment must collect source water samples from the ground water (*e.g.*, the well).

(e) *Multiple sources.* Systems with plants that use multiple water sources at the same time, including multiple surface water sources and blended surface water and ground water sources, must collect samples as specified in paragraph (e)(1) or (2) of this section. The use of multiple sources during monitoring must be consistent with routine operational practice and the State may place reporting requirements to verify operational practices.

(1) If a sampling tap is available where the sources are combined prior to treatment, the sample must be collected from the tap.

(2) If there is not a sampling tap where the sources are combined prior to treatment, systems must collect samples at each source near the intake on the same day and must follow either paragraph (e)(2)(i) or (e)(2)(ii) of this section for sample analysis.

(i) Composite samples from each source into one sample prior to analysis. In the composite, the volume of sample from each source must be weighted according to the proportion of the

source in the total plant flow at the time the sample is collected.

(ii) Analyze samples from each source separately as specified in § 141.705, and calculate a weighted average of the analysis results for each sampling date. The weighted average must be calculated by multiplying the analysis result for each source by the fraction the source contributed to total plant flow at the time the sample was collected, and then summing these values.

§ 141.705 Analytical methods.

(a) *Cryptosporidium.* Systems must use Method 1622 *Cryptosporidium in Water by Filtration/IMS/FA*, EPA 821-R-01-026, April 2001, or Method 1623 *Cryptosporidium and Giardia in Water by Filtration/IMS/FA*, EPA 821-R-01-025, April 2001, for *Cryptosporidium* analysis.

(1) Systems are required to 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 2 mL.

(2)(i) Matrix spikes (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 § 141.706. The volume of the MS sample must be within 10 percent of the volume of the unspiked sample that is collected at the same time, and the samples must be collected by splitting the sample stream or collecting the samples sequentially. The MS sample and the associated unspiked sample must be analyzed by the same procedure.

(ii) If the volume of the MS sample is greater than 10 L, the system is permitted to 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) Each sample batch must meet the quality control criteria for the methods listed in paragraph (a) of this section. Flow cytometer-counted spiking suspensions must be used for MS samples and ongoing precision and recovery (OPR) samples; recovery for OPR samples must be 11% to 100%; for each method blank, oocysts must not be detected.

(4) Total *Cryptosporidium* oocysts as detected by fluorescein isothiocyanate (FITC) must be reported as determined by the color (apple green or alternative stain color approved under § 141.706(a) for the laboratory), size (4–6 µm) and shape (round to oval). This total includes all of the oocysts identified, less any atypical organisms identified by FITC, differential interference contrast (DIC) or 4',6-diamidino-2-phenylindole (DAPI), including those possessing spikes, stalks, appendages, pores, one or two large nuclei filling the cell, red fluorescing chloroplasts, crystals, and spores.

(b) *E. coli.* Systems must use the following methods listed in this paragraph for enumeration of *E. coli* in source water (table will be replaced with CFR cite from Guidelines Establishing Test Procedures for the Analysis of Pollutants; Analytical Methods for Biological Pollutants in Ambient Water when finalized—expected 2003):

METHODS FOR *E. coli* ENUMERATION¹

Technique	Method ¹	EPA	VCSB methods		
			Standard methods	ASTM	AOAC
Most Probable Number (MPN)	LTB, EC-MUG	9221B.1/9221F	D5392-93	991.15
	ONPG-MUG	9223B		
	ONPG-MUG	9223B		
Membrane Filter (MF)	mFC-NA-MUG	9222D/9222G		
	ENDO-NA-MUG	9222B/9222G		
	mTEC agar	1103.1	9213D		
	Modified mTEC agar	Modified 1103.1			
	MI agar	EPA-600-R-013			
	m-ColiBlue24 broth				

¹ Tests must be conducted in a format that provides organism enumeration.

(1) The time from sample collection to initiation of analysis may not exceed 24

hours. Systems must maintain samples between 0°C and 10°C during transit.

(2) [Reserved]

(c) *Turbidity.* Systems must use methods for turbidity measurement approved in § 141.74.