

for *Cryptosporidium* in future rulemaking (62 FR 59498, November 3, 1997) (USEPA 2000b). The CT tables for ozone and chlorine dioxide provide such criteria. In addition, the availability of UV furnishes another relatively low cost tool to achieve *Cryptosporidium* inactivation and DBP control.

While no single treatment technology is appropriate for all systems, EPA believes that these disinfectants, along with the other management and treatment options in the microbial toolbox presented in section IV.C, make it feasible for systems to meet the additional *Cryptosporidium* treatment requirements in today's proposal.

IV. Discussion of Proposed LT2ESWTR Requirements

A. Additional *Cryptosporidium* Treatment Technique Requirements for Filtered Systems

1. What Is EPA Proposing Today?

a. *Overview of framework approach.* EPA is proposing treatment technique requirements to supplement the existing requirements of the SWTR, IESWTR, and LT1ESWTR (see section II.B). The proposed requirements will achieve increased protection against *Cryptosporidium* in public water systems that use surface water or ground water under the direct influence of surface water as sources. Under this proposal, filtered systems will be assigned to one of four risk categories (or "bins"), based on the results of source water *Cryptosporidium* monitoring. Systems assigned to the lowest risk bin incur no additional treatment requirements, while systems assigned to higher risk bins must reduce *Cryptosporidium* levels beyond IESWTR and LT1ESWTR requirements. Systems will comply with additional *Cryptosporidium* treatment requirements by selecting treatment and management strategies from a "microbial toolbox" of control options.

Today's proposal reflects recommendations from the Stage 2 M-

DBP Federal Advisory Committee (65 FR 83015, December 29, 2000) (USEPA 2000a), which described this approach as a "microbial framework". This approach targets additional treatment requirements to those systems with the highest source water *Cryptosporidium* levels and, consequently, the highest vulnerability to this pathogen. In so doing, today's proposal builds upon the current treatment technique requirement for *Cryptosporidium* under which all filtered systems must achieve at least a 2 log reduction, regardless of source water quality. The intent of this proposal is to assure that public water systems with the higher risk source water achieve a level of public health protection commensurate with systems with less contaminated source water.

b. *Monitoring requirements.* Today's proposal requires systems to monitor their source water (influent water prior to treatment plant) for *Cryptosporidium*, *E. coli*, and turbidity. The purpose of the monitoring is to assess source water *Cryptosporidium* levels and, thereby, classify systems in different risk bins. Proposed monitoring requirements for large and small systems are summarized in Table IV-I and are characterized in the following discussion.

Large Systems

Large systems (serving at least 10,000 people) must sample their source water at least monthly for *Cryptosporidium*, *E. coli*, and turbidity for a period of 2 years, beginning no later than 6 months after LT2ESWTR promulgation. Systems may sample more frequently (e.g., twice-per-month, once-per-week), provided the same sampling frequency is used throughout the 2-year monitoring period. As described in section IV.A.1.c, systems that sample more frequently (at least twice-per-month) use a different calculation that is potentially less conservative to determine their bin classification.

The purpose of requiring large systems to collect *E. coli* and turbidity data is to further evaluate these parameters as indicators to identify

drinking water sources that are susceptible to high concentrations of *Cryptosporidium*. As described next, these data will be applied to small system LT2ESWTR monitoring.

Small Systems

EPA is proposing a 2-phase monitoring strategy for small systems (serving fewer than 10,000 people) to reduce their monitoring burden. This approach is based on Information Collection Rule and ICRSS data indicating that systems with low source water *E. coli* levels are likely to have low *Cryptosporidium* levels, such that additional treatment would not be required under the LT2ESWTR. Under this approach, small systems must initially conduct one year of bi-weekly sampling (one sample every two weeks) for *E. coli*, beginning 2.5 years after LT2ESWTR promulgation. Small systems are triggered into *Cryptosporidium* monitoring only if the initial *E. coli* monitoring indicates a mean concentration greater than 10 *E. coli*/100 mL for systems using a reservoir or lake as their primary source or greater than 50 *E. coli*/100 mL for systems using a flowing stream as their primary source. Small systems that exceed these *E. coli* trigger values must conduct one year of twice-per-month *Cryptosporidium* sampling, beginning 4 years after LT2ESWTR promulgation.

The analysis supporting the proposed *E. coli* values that trigger *Cryptosporidium* monitoring by small systems is presented in Section IV.A.2. However, as recommended by the Stage 2 M-DBP Advisory Committee, EPA will evaluate *Cryptosporidium* indicator relationships in the LT2ESWTR monitoring data collected by large systems. If these data support the use of different indicator levels to trigger small system *Cryptosporidium* monitoring, EPA will issue guidance with recommendations. The proposed LT2ESWTR allows States to specify alternative indicator values for small systems, based on EPA guidance.

TABLE IV-1.—LT2ESWTR MONITORING REQUIREMENTS

Public water systems	Monitoring begins	Monitoring duration	Monitoring parameters and sample frequency requirements		
			<i>Cryptosporidium</i>	<i>E. coli</i>	Turbidity
Large systems (serving 10,000 or more people).	6 months after promulgation of LT2ESWTR ^a .	2 years	minimum 1 sample/month ^b .	minimum 1 sample/month ^b .	minimum 1 measurement/month ^b .
Small systems (serving fewer than 10,000 people).	30 months (2½ years) after promulgation of LT2ESWTR.	1 year	See following rows	1 sample every two weeks.	N/A