

Environmental Protection Agency

§ 141.710

this section to calculate a disinfection benchmark.

(1) For each year of profiling data collected and calculated under paragraphs (a) through (d) of this section, systems must determine the lowest mean monthly level of both *Giardia lamblia* and virus inactivation. Systems must determine the mean *Giardia lamblia* and virus inactivation for each calendar month for each year of profiling data by dividing the sum of daily or weekly *Giardia lamblia* and virus log inactivation by the number of values calculated for that month.

(2) The disinfection benchmark is the lowest monthly mean value (for systems with one year of profiling data) or the mean of the lowest monthly mean values (for systems with more than one year of profiling data) of *Giardia lamblia* and virus log inactivation in each year of profiling data.

TREATMENT TECHNIQUE REQUIREMENTS

§ 141.710 Bin classification for filtered systems.

(a) Following completion of the initial round of source water monitoring required under §141.701(a), filtered systems must calculate an initial *Cryptosporidium* bin concentration for each plant for which monitoring was required. Calculation of the bin concentration must use the *Cryptosporidium* results reported under §141.701(a) and must follow the procedures in paragraphs (b)(1) through (5) of this section.

(b)(1) For systems that collect a total of at least 48 samples, the bin con-

centration is equal to the arithmetic mean of all sample concentrations.

(2) For systems that collect a total of at least 24 samples, but not more than 47 samples, the bin concentration is equal to the highest arithmetic mean of all sample concentrations in any 12 consecutive months during which *Cryptosporidium* samples were collected.

(3) For systems that serve fewer than 10,000 people and monitor for *Cryptosporidium* for only one year (i.e., collect 24 samples in 12 months), the bin concentration is equal to the arithmetic mean of all sample concentrations.

(4) For systems with plants operating only part of the year that monitor fewer than 12 months per year under §141.701(e), the bin concentration is equal to the highest arithmetic mean of all sample concentrations during any year of *Cryptosporidium* monitoring.

(5) If the monthly *Cryptosporidium* sampling frequency varies, systems must first calculate a monthly average for each month of monitoring. Systems must then use these monthly average concentrations, rather than individual sample concentrations, in the applicable calculation for bin classification in paragraphs (b)(1) through (4) of this section.

(c) Filtered systems must determine their initial bin classification from the following table and using the *Cryptosporidium* bin concentration calculated under paragraphs (a)–(b) of this section:

BIN CLASSIFICATION TABLE FOR FILTERED SYSTEMS

For systems that are:	With a <i>Cryptosporidium</i> bin concentration of	The bin classification is
. . . required to monitor for <i>Cryptosporidium</i> under § 141.701.	<i>Cryptosporidium</i> <0.075 oocyst/L	Bin 1.
	0.075 oocysts/L ≤ <i>Cryptosporidium</i> <1.0 oocysts/L.	Bin 2.
	1.0 oocysts/L ≤ <i>Cryptosporidium</i> <3.0 oocysts/L.	Bin 3.
	<i>Cryptosporidium</i> ≥3.0 oocysts/L	Bin 4.
. . . serving fewer than 10,000 people and NOT required to monitor for <i>Cryptosporidium</i> under § 141.701(a)(4).	NA	Bin 1.

¹ Based on calculations in paragraph (a) or (d) of this section, as applicable.

(d) Following completion of the second round of source water monitoring

required under §141.701(b), filtered systems must recalculate their

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Cryptosporidium bin concentration using the *Cryptosporidium* results reported under §141.701(b) and following the procedures in paragraphs (b)(1) through (4) of this section. Systems must then redetermine their bin classification using this bin concentration and the table in paragraph (c) of this section.

(e)(1) Filtered systems must report their initial bin classification under paragraph (c) of this section to the State for approval no later than 6 months after the system is required to complete initial source water monitoring based on the schedule in §141.701(c).

(2) Systems must report their bin classification under paragraph (d) of this section to the State for approval no later than 6 months after the system is required to complete the second

round of source water monitoring based on the schedule in §141.701(c).

(3) The bin classification report to the State must include a summary of source water monitoring data and the calculation procedure used to determine bin classification.

(f) Failure to comply with the conditions of paragraph (e) of this section is a violation of the treatment technique requirement.

§ 141.711 Filtered system additional *Cryptosporidium* treatment requirements.

(a) Filtered systems must provide the level of additional treatment for *Cryptosporidium* specified in this paragraph based on their bin classification as determined under §141.710 and according to the schedule in §141.713.

If the system bin classification is . . .	And the system uses the following filtration treatment in full compliance with subparts H, P, and T of this part (as applicable), then the additional <i>Cryptosporidium</i> treatment requirements are . . .			
	Conventional filtration treatment (including softening)	Direct filtration	Slow sand or diatomaceous earth filtration	Alternative filtration technologies
Bin 1	No additional treatment ..	No additional treatment ..	No additional treatment ..	No additional treatment.
Bin 2	1-log treatment	1.5-log treatment	1-log treatment	(¹)
Bin 3	2-log treatment	2.5-log treatment	2-log treatment	(²)
Bin 4	2.5-log treatment	3-log treatment	2.5-log treatment	(³)

¹ As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 4.0-log.

² As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 5.0-log.

³ As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 5.5-log.

(b)(1) Filtered systems must use one or more of the treatment and management options listed in §141.715, termed the microbial toolbox, to comply with the additional *Cryptosporidium* treatment required in paragraph (a) of this section.

(2) Systems classified in Bin 3 and Bin 4 must achieve at least 1-log of the additional *Cryptosporidium* treatment required under paragraph (a) of this section using either one or a combination of the following: bag filters, bank filtration, cartridge filters, chlorine dioxide, membranes, ozone, or UV, as described in §§141.716 through 141.720.

(c) Failure by a system in any month to achieve treatment credit by meeting criteria in §§141.716 through 141.720 for microbial toolbox options that is at least equal to the level of treatment required in paragraph (a) of this section is a violation of the treatment technique requirement.

(d) If the State determines during a sanitary survey or an equivalent source water assessment that after a system completed the monitoring conducted under §141.701(a) or §141.701(b), significant changes occurred in the system's watershed that could lead to increased contamination of the source water by *Cryptosporidium*, the system must take actions specified by the State to address the contamination. These actions may include additional source water monitoring and/or implementing microbial toolbox options listed in §141.715.

§ 141.712 Unfiltered system *Cryptosporidium* treatment requirements.

(a) *Determination of mean Cryptosporidium level.* (1) Following completion of the initial source water monitoring required under §141.701(a), unfiltered systems must calculate the