

Rather than require systems to complete an application package with historical data and narratives, the LT2ESWTR requires systems to demonstrate to the State that they meet the individual filter performance goals of Phase IV on an ongoing basis to receive the 1.0 log additional *Cryptosporidium* treatment credit. EPA is not requiring systems to demonstrate that they meet sedimentation performance goals of Phase IV. While EPA recognizes that settled water turbidity is an important operational performance measure for a plant, the Agency does not have data directly relating it to finished water quality and pathogen risk.

The November 2001 pre-proposal draft of the LT2ESWTR described a potential 1.0 log credit for systems that achieved individual filter effluent (IFE) turbidity below 0.15 NTU in 95 percent of samples (USEPA 2001g). The Science Advisory Board (SAB) subsequently reviewed this credit and supporting data on the relationship between filter effluent turbidity and *Cryptosporidium* removal efficiency (described in section IV.C.8). In written comments from a December 2001 meeting of the Drinking Water Committee, an SAB panel recommended only a 0.5 log credit for 95th percentile IFE turbidity below 0.15 NTU.

To address this recommendation from the SAB, EPA is proposing that systems meet the individual filter performance criteria of Phase IV of the Partnership in order to be eligible for a 1.0 log additional *Cryptosporidium* treatment credit. This proposed approach responds to the concerns raised by the SAB because the Phase IV criteria are more stringent than those in the 2001 pre-proposal draft of the LT2ESWTR. For example, today's proposal sets a maximum limit on individual filter effluent turbidity of 0.3 NTU, whereas no such upper limit was described in the 2001 pre-proposal draft.

In summary, EPA has concluded that it is appropriate to award additional *Cryptosporidium* treatment credit for systems meeting stringent individual filter performance standards. Modestly elevated turbidity from a single filter may not significantly impact combined filter effluent turbidity levels, which are regulated under IESWTR and LT1ESWTR, but may indicate a substantial reduction in the overall pathogen removal efficiency of the filtration process. Consequently, systems that continually achieve very low turbidity in each individual filter are likely to provide a significantly more effective microbial barrier. EPA expects that systems that select this toolbox option will have achieved a high level

of treatment process optimization and process control, and will have both a history of consistent performance over a range of raw water quality conditions and the capability and resources to maintain this performance long-term.

c. *Request for comment.* The Agency invites comment on the following issues related to the proposed credit for individual filter performance.

- Are there different or additional performance measures that a utility should be required to meet for the 1 log additional credit?
- Are there existing peer review programs for which treatment credit should be awarded under the LT2ESWTR? If so, what role should primacy agencies play in establishing and managing any such peer review program?
- The individual filter effluent turbidity criterion of 0.1 NTU is proposed because it is consistent with Phase IV Partnership standards, as based on CCP goals. However, with allowable rounding, turbidity levels less than 0.15 NTU are in compliance with a standard of 0.1. Consequently, EPA requests comment on whether 0.15 NTU should be the standard for individual filter performance credit, as this would be consistent with the standard of 0.15 NTU that is proposed for combined filter performance credit in section IV.C.8.

17. Other Demonstration of Performance

a. *What is EPA proposing today?* The purpose of the "demonstration of performance" toolbox component is to allow a system to demonstrate that a plant, or a unit process within a plant, should receive a higher *Cryptosporidium* treatment credit than is presumptively awarded under the LT2ESWTR. For example, as described in section IV.A, plants using conventional treatment receive a presumptive 3 log credit towards the *Cryptosporidium* treatment requirements in Bins 2–4 of the LT2ESWTR. This credit is based on a determination by EPA that conventional treatment plants achieve an average *Cryptosporidium* removal of 3 log when in compliance with the IESWTR or LT1ESWTR. However, EPA recognizes that some conventional treatment plants may achieve average *Cryptosporidium* removal efficiencies greater than 3 log. Similarly, some systems may achieve *Cryptosporidium* reductions with certain toolbox components that are greater than the presumptive credits awarded under the LT2ESWTR, as described in this section (IV.C).

Where a system can demonstrate that a plant, or a unit process within a plant,

achieves a *Cryptosporidium* reduction efficiency greater than the presumptive credit specified in the LT2ESWTR, it may be appropriate for the system to receive a higher *Cryptosporidium* treatment credit. Today's proposal does not include specific protocols for systems to make such a demonstration, due to the potentially complex and site specific nature of the testing that would be required. Rather, today's proposal allows a State to award a higher level of *Cryptosporidium* treatment credit to a system where the State determines, based on site-specific testing with a State-approved protocol, that a treatment plant or a unit process within a plant reliably achieves a higher level of *Cryptosporidium* removal on a continuing basis. Also, States may award a lower level of *Cryptosporidium* treatment credit to a system where a State determines, based on site specific information, that a plant or a unit process within a plant achieves a *Cryptosporidium* removal efficiency less than a presumptive credit specified in the LT2ESWTR.

Systems receiving additional *Cryptosporidium* treatment credit through a demonstration of performance may be required by the State to report operational data on a monthly basis to establish that conditions under which demonstration of performance credit was awarded are maintained during routine operation. The Toolbox Guidance Manual (USEPA 2003f) will describe potential approaches to demonstration of performance testing. This guidance is available in draft in the docket for today's proposal (<http://www.epa.gov/edocket/>).

Note that as described in section IV.C, today's proposal allows treatment plants to achieve additional *Cryptosporidium* treatment credit through meeting the design and/or operational criteria of microbial toolbox components, such as combined and individual filter performance, presedimentation, bank filtration, two-stage softening, secondary filtration, etc. Plants that receive additional *Cryptosporidium* treatment credit through a demonstration of performance are not also eligible for the presumptive credit associated with microbial toolbox components if the additional removal due to the toolbox component is captured in the demonstration of performance credit. For example, if a plant receives a demonstration of performance credit based on removal of *Cryptosporidium* or an indicator while operating under conditions of lower finished water turbidity, the plant may not also receive additional presumptive credit for lower