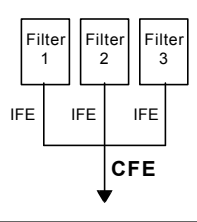


# Long Term 1 Enhanced Surface Water Treatment Rule: A Quick Reference Guide

## Overview of the Rule

<b>Title</b>	Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) 67 FR 1812, January 14, 2002, Vol. 67, No. 9
<b>Purpose</b>	Improve public health protection through the control of microbial contaminants, particularly <i>Cryptosporidium</i> . Prevent significant increases in microbial risk that might otherwise occur when systems implement the Stage 1 Disinfectants and Disinfection Byproducts Rule.
<b>General Description</b>	Builds upon the requirements of the 1989 Surface Water Treatment Rule (SWTR). Smaller system counterpart of the Interim Enhanced Surface Water Treatment Rule (IESWTR).
<b>Utilities Covered</b>	Public water systems that use surface water or ground water under the direct influence of surface water (GWUDI) and serve fewer than 10,000 people.

## Major Provisions

<b>Control of <i>Cryptosporidium</i></b>	<ul style="list-style-type: none"> <li>▶ The maximum contaminant level goal (MCLG) is set at zero.</li> <li>▶ Filtered systems must physically remove 99% (2-log) of <i>Cryptosporidium</i>.</li> <li>▶ Unfiltered systems must update their watershed control programs to minimize the potential for contamination by <i>Cryptosporidium</i> oocysts.</li> <li>▶ <i>Cryptosporidium</i> is included as an indicator of GWUDI.</li> </ul>
<b>Combined Filter Effluent (CFE) Turbidity Performance Standards</b>  	<p><b>Specific CFE turbidity requirements depend on the type of filtration used by the system.</b></p> <p><b>Conventional and direct filtration:</b></p> <ul style="list-style-type: none"> <li>▶ ≤ 0.3 nephelometric turbidity units (NTU) in at least 95% of measurements taken each month.</li> <li>▶ Maximum level of turbidity: 1 NTU.</li> </ul> <p><b>Slow sand and diatomaceous earth (DE) filtration:</b></p> <ul style="list-style-type: none"> <li>▶ Continue to meet CFE turbidity limits specified in the SWTR: <ul style="list-style-type: none"> <li>• 1 NTU in at least 95% of measurements taken each month.</li> <li>• Maximum level of turbidity: 5 NTU.</li> </ul> </li> </ul> <p><b>Alternative technologies (other than conventional, direct, slow sand, or DE):</b></p> <ul style="list-style-type: none"> <li>▶ Turbidity levels are established by the State based on filter demonstration data submitted by the system. <ul style="list-style-type: none"> <li>• State-set limits must not exceed 1 NTU (in at least 95% of measurements) or 5 NTU (maximum).</li> </ul> </li> </ul>

For additional information on the LT1ESWTR

Call the Safe Drinking Water Hotline at 1-800-426-4791; visit the EPA web site at [www.epa.gov/safewater/mdbp/lt1eswtr.html](http://www.epa.gov/safewater/mdbp/lt1eswtr.html); or contact your State drinking water representative.

<sup>1</sup> This frequency may be reduced by the State to once per day for systems using slow sand/alternative filtration or for systems serving 500 persons or fewer regardless of the type of filtration used.

## Turbidity Monitoring Requirements

<b>Combined Filter Effluent</b>	<ul style="list-style-type: none"> <li>▶ Performed at least every 4 hours to ensure compliance with CFE turbidity performance standards.<sup>1</sup></li> </ul>
<b>Individual Filter Effluent (IFE) (for systems using conventional and direct filtration only)</b>	<p><b>Since the CFE may meet regulatory requirements even though one filter is producing high turbidity water, the IFE is measured to assist conventional and direct filtration treatment plant operators in understanding and assessing individual filter performance.</b></p> <ul style="list-style-type: none"> <li>▶ Performed continuously (recorded at least every 15 minutes).</li> <li>▶ Systems with two or fewer filters may conduct continuous monitoring of CFE turbidity in place of individual filter effluent turbidity monitoring.</li> <li>▶ Certain follow-up actions are required if the IFE turbidity (or CFE for systems with two filters) exceeds 1.0 NTU in 2 consecutive readings or more (i.e., additional reporting, filter self-assessments, and/or comprehensive performance evaluations (CPEs)).</li> </ul>

## Disinfection Profiling and Benchmarking Requirements

*Community and non-transient non-community public water systems must evaluate impacts on microbial risk before changing disinfection practices to ensure adequate microbial protection is maintained. This is accomplished through a process called disinfection profiling and benchmarking.*

What are the disinfection profiling and benchmarking requirements?

- ▶ Systems must develop a disinfection profile, which is a graphical compilation of weekly inactivation of *Giardia lamblia*, taken on the same calendar day each week over 12 consecutive months. (Systems using chloramines, ozone, or chlorine dioxide for primary disinfection must also calculate inactivation of viruses). Results must be available for review by the State during sanitary surveys.
- ▶ A State may deem a profile unnecessary if the system has sample data collected after January 1, 1998—during the month of warmest water temperature and at maximum residence time in the distribution system—indicating TTHM levels are below 0.064 mg/L and HAA5 levels are below 0.048 mg/L.
- ▶ Prior to making a significant change to disinfection practices, systems required to develop a profile must calculate a disinfection benchmark and consult with the State. The benchmark is the calculation of the lowest monthly average of inactivation based on the disinfection profile.

## Additional Requirements

- ▶ Construction of new uncovered finished water reservoirs is prohibited.

## Critical Deadlines and Requirements

### For Drinking Water Systems

March 15, 2002	Construction of uncovered finished reservoirs is prohibited.
July 1, 2003	No later than this date, systems serving between 500-9,999 persons must report to the State: <ul style="list-style-type: none"> <li>▶ Results of optional monitoring which show levels of TTHM &lt; 0.064 mg/L and HAA5 &lt; 0.048 mg/L, OR</li> <li>▶ System has started profiling.</li> </ul>
January 1, 2004	No later than this date, systems serving fewer than 500 persons must report to the State: <ul style="list-style-type: none"> <li>▶ Results of optional monitoring which show levels of TTHM &lt; 0.064 mg/L and HAA5 &lt; 0.048 mg/L, OR</li> <li>▶ System has started profiling.</li> </ul>
June 30, 2004	Systems serving between 500 and 9,999 persons must complete their disinfection profile unless the State has determined it is unnecessary.
December 31, 2004	Systems serving fewer than 500 persons must complete their disinfection profile unless the State has determined it is unnecessary.
January 14, 2005	Surface water systems or GWUDI systems serving fewer than 10,000 people must comply with the applicable LT1ESWTR provisions (e.g., turbidity standards, individual filter monitoring, <i>Cryptosporidium</i> removal requirements, updated watershed control requirements for unfiltered systems).

### For States

January 2002	As per the IESWTR, States begin first round of sanitary surveys (at least every 3 years for community water systems and every 5 years for non-community water systems).
October 14, 2003	States are encouraged to submit final primacy applications to EPA.
January 14, 2004	Final primacy applications must be submitted to EPA unless granted an extension.
December 2004	States must complete first round of sanitary surveys for community water systems (as per the IESWTR).
January 14, 2006	Final primacy revision applications from States with approved 2-year extension agreements must be submitted to EPA.
December 2006	States must complete first round of sanitary surveys for non-community water systems (as per the IESWTR).

## Public Health Benefits

Implementation of the LT1ESWTR will result in . . .	<ul style="list-style-type: none"> <li>▶ Increased protection against gastrointestinal illnesses from <i>Cryptosporidium</i> and other pathogens through improvements in filtration.</li> <li>▶ Reduced likelihood of endemic illness from <i>Cryptosporidium</i> by an estimated 12,000 to 41,000 cases annually.</li> <li>▶ Reduced likelihood of outbreaks of cryptosporidiosis.</li> </ul>
Estimated impacts of the LT1ESWTR include . . .	<ul style="list-style-type: none"> <li>▶ National total annualized cost: \$39.5 million.</li> <li>▶ 90% of affected households will incur an increase of less than \$1.25 per month.</li> <li>▶ One percent of affected households are likely to incur an increase of more than \$10 per month.</li> </ul>