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FACT SHEET

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USEPA Long Term 1 Enhanced Surface Water Treatment Rule

USEPA has finalized the Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR). The purposes of the LT1ESWTR are to improve control of microbial pathogens, specifically the protozoan *Cryptosporidium*, in drinking water and address risk trade-offs with disinfection byproducts. The LT1ESWTR was published in the Federal Register on January 14, 2002 and became effective February 13, 2002.

The LT1ESWTR will require small surface water systems serving a population of less than 10,000 to meet strengthened filtration requirements. The LT1ESWTR will also require small surface water systems to calculate levels of microbial inactivation to ensure that microbial protection is not jeopardized if significant changes are made to the disinfection treatment to attain compliance with requirements of the Stage 1 Disinfectants and Disinfection Byproducts Rule (DBPR). The LT1ESWTR builds upon the framework established for larger surface water systems in the Interim Enhanced Surface Water Treatment Rule. Treatment optimization and other alternatives such as eliminating pre-chlorination disinfection to reduce disinfection byproducts should be evaluated.

Which public water systems must comply with the rule?

The LT1ESWTR applies to all public water systems that:

- ★ Use surface water; or
- ★ The director designates a groundwater system as a surface water source (GWUDI) in accordance to rule 3745-81-76; and
- ★ Serve a population of less than 10,000.

What does the rule require?

The LT1ESWTR provisions fall into the three following categories:

(1) *Cryptosporidium* Removal

- ★ All surface water systems must achieve a 2-log removal (99 percent) of *Cryptosporidium*.

(2) Enhanced Filtration Requirements

- ★ Strengthened combined filter effluent (CFE) turbidity performance requirements to assure 2-log removal of *Cryptosporidium*; and
- ★ Surface water systems that use conventional filtration treatment or direct filtration treatment must continuously monitor the turbidity of individual filters and comply with actions that are triggered because of turbidity exceedances.

(3) Microbial Inactivation Benchmarking

- ★ Both community and nontransient noncommunity surface water systems will be required to develop a disinfection profile of microbial inactivation levels unless they perform optional monitoring which demonstrates that their disinfection byproduct concentrations for total trihalomethanes (TTHM) are less 0.064 mg/L and haloacetic acids (HAA5) are less than 0.048 mg/L; and
- ★ If a disinfection profile is required, then both community and nontransient noncommunity surface water systems considering making a significant change to their disinfection treatment will be required to determine their current lowest level of microbial inactivation (benchmark) and consult with the director (district office) prior to implementing the modification.

How soon will the rule requirements take effect?

The rule became effective on February 13, 2002; however, each of the requirements has a different compliance date. The table provides a summary of the applicable compliance dates.

Long Term 1 Enhanced Surface Water Treatment Rule Compliance Dates	
Community and nontransient noncommunity surface water systems that serve at least 500 collect optional TTHM and HAA5 samples for disinfection profile applicability at the maximum residence time in the distribution system during the 3 rd quarter of the year	July - September 2002
Community and nontransient noncommunity surface water systems that serve less than 500 collect optional TTHM and HAA5 samples for disinfection profile applicability at the maximum residence time in the distribution system during the 3 rd quarter of the year	July - September 2003
Community and nontransient noncommunity surface water systems that serve at least 500 begin to develop disinfection profile	July 1, 2003 (no later than)
Community and nontransient noncommunity surface water systems that serve less than 500 begin to develop disinfection profile	January 1, 2004 (no later than)
Must achieve 2-log <i>Cryptosporidium</i> removal	January 1, 2005
Lower combined filter effluent turbidity limits to 0.3 NTU (except slow sand filtration)	January 1, 2005
Begin Individual Filter Turbidity Monitoring & Reporting (conventional or direct filtration)	January 1, 2005

What is the significance of this rule?

In 1990, the Science Advisory Board cited drinking water contamination as one of the most important environmental risks and indicated that disease-causing microbiological contaminants (pathogens such as, bacteria, protozoa, and viruses) are probably the greatest remaining health risk management challenge for drinking water suppliers. The LT1ESWTR addresses this challenge by improving the control of microbiological pathogens such as *Cryptosporidium* or *Giardia* in public drinking water systems serving a population of less than 10,000. The LT1ESWTR will also protect the public against increases in risk from such pathogens in cases where surface water systems alter their disinfection treatment to reduce disinfection byproducts.

The LT1ESWTR is part of the larger Microbial and Disinfection Byproducts cluster of rules that include the IESWTR and the DBPR. Implementing the provisions contained in the LT1ESWTR will provide additional protections against the microorganism *Cryptosporidium* or *Giardia* to persons served by small surface water systems. The IESWTR afforded the people served by large water systems added protection against *Cryptosporidium*. The LT1ESWTR completes this effort by extending protection to the remaining people that are served by small surface water systems.

How will the rule protect public health?

USEPA has determined that the presence of microbiological pathogens in public water supplies is a health concern. If finished water supplies contain microbiological contaminants, illnesses and disease outbreaks may result. Twelve waterborne cryptosporidiosis outbreaks caused by contamination in public water systems were reported to the Center for Disease Control and Prevention between 1984 and 1998. In 1993, *Cryptosporidium* caused more than 400,000 people in Milwaukee, WI, to experience intestinal illness. More than 4,000 were hospitalized and at least 50 deaths were attributed to this cryptosporidiosis outbreak. Other recent cryptosporidiosis outbreaks attributable to public water system contamination occurred in Nevada, Oregon, and Georgia.

The LT1ESWTR for the first time establishes *Cryptosporidium* control requirements for systems serving less than 10,000 persons by requiring a minimum 2-log removal for *Cryptosporidium*. Also, the LT1ESWTR strengthens filter performance requirements to ensure 2-log *Cryptosporidium* removal, establishes individual filter monitoring to minimize poor performance in individual filters at plants using conventional filtration treatment or direct filtration treatment, and includes *Cryptosporidium* as an indicator of ground water contamination in the definition of surface water.

The LT1ESWTR also reflects a commitment to the importance of maintaining existing levels of microbial protection in surface water systems as plants take steps to reduce disinfection byproducts. Surface water systems considering significant changes to their disinfection treatment may be required to first evaluate current levels of *Giardia* inactivation or removal and consult with the Ohio EPA before implementing those changes. Thus, compliance with the provisions of the LT1ESWTR will improve public health protection by reducing the risk of exposure to *Cryptosporidium* in surface water systems serving less than 10,000 people.

What are the benefits of this rule?

The primary benefits of the LT1ESWTR come from reductions in the risk of illness from pathogens in drinking water. In particular, the LT1ESWTR focuses on reducing the risk associated with disinfection-resistant pathogens, such as *Cryptosporidium*. Other pathogens may also be removed more efficiently due to implementation of these provisions. Exposure to other pathogenic protozoa or other waterborne bacterial or viral pathogens are likely to be reduced by the provisions of this rule as well. In addition to preventing illnesses, this rule is expected to have other non-health related benefits. These benefits result from avoiding non-health related costs associated with waterborne disease outbreaks. USEPA estimates that implementation of the LT1ESWTR will reduce illnesses and mortalities due to cryptosporidiosis. Most of the avoided deaths would be among immunocompromised and other sensitive subpopulations.

Is funding available to assist public water systems to attain compliance with this rule?

The Ohio Drinking Water Assistance Fund may financially assist a public water system. Due to limited funding and the process to fulfill program requirements, any public water system considering this funding option should apply as early as possible. Pre-applications and reports providing information about the loan program and eligibility requirements are available at the website: www.epa.state.oh.us/ddagw/dwaf.html. For additional information about the Drinking Water Assistance Fund, call the Division of Environmental and Financial Assistance at (614)644-2798.

Where can the public get more information about the rule?

For information on the LT1ESWTR, call the Ohio EPA district office, or call the Safe Drinking Water Hotline, at (800) 426-4791, or visit the USEPA website, www.epa.gov/safewater/mdbp/lt1eswtr.html.

Northwest District Office	(419) 352-8461
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