



# **Long Term 2 Enhanced Surface Water Treatment Rule: Monitoring Data Analysis, Occurrence Forecasts, Binning, and the Microbial Toolbox; Public Meeting**

**November 15, 2012**



# **Overview of LT2 Monitoring, Bin Boundaries, and Toolbox Options, and the Six-Year Review Process**

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# Outline

- Overview of Some Key LT2 Rule Provisions
  - Monitoring Provisions
  - Bin Boundaries
  - Toolbox Options
- Monitoring and Compliance Schedules
- Statutory Requirements and Considerations for LT2 Review
- Key Elements Typically Considered
- LT2 Review Plan and Timeframes
- Primary LT2 Elements Under Review



# History and Basis for LT2 Monitoring, Bin Boundaries, and Tool Box Options

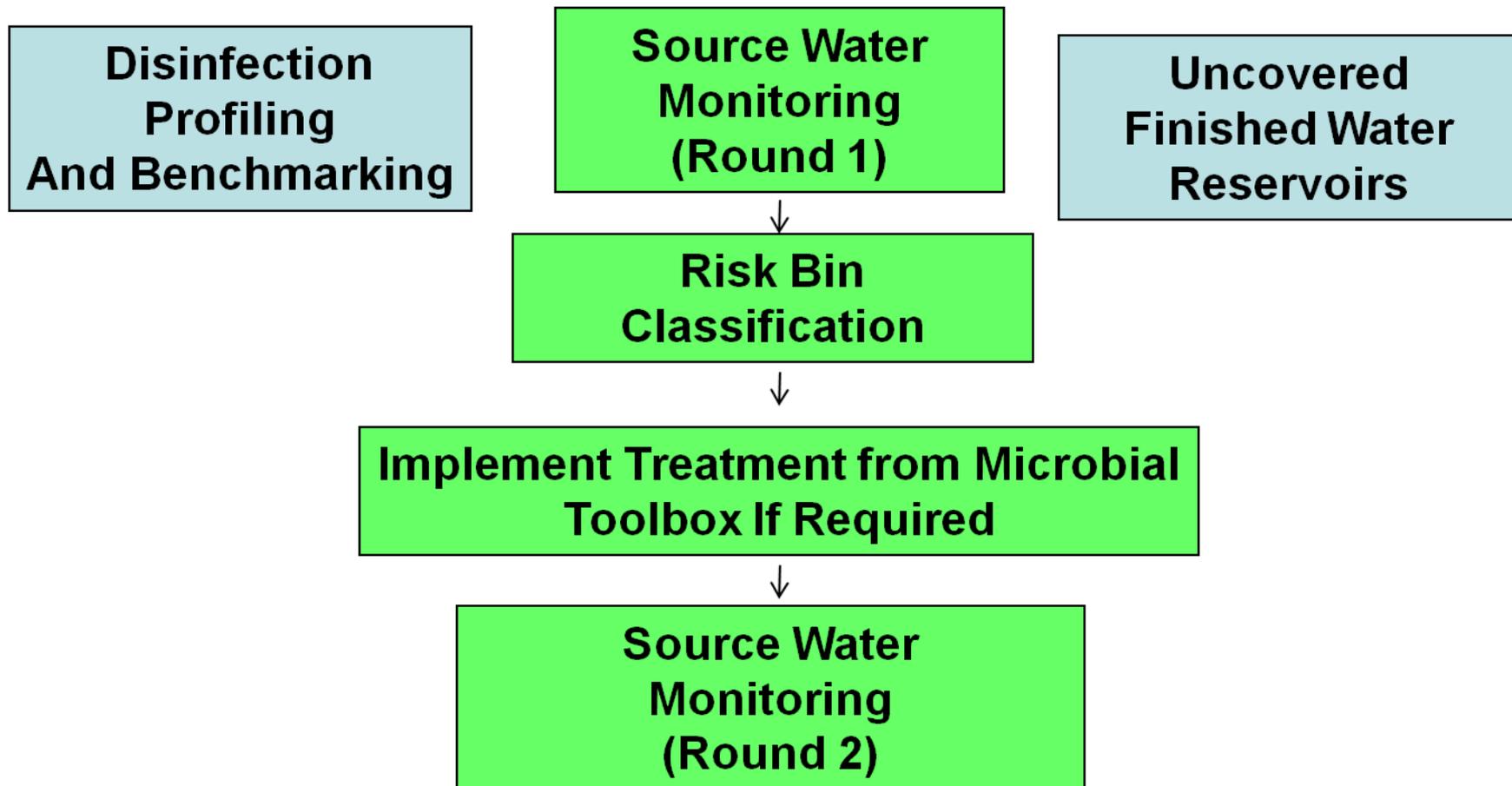
- Advisory Committee (2000) recommended that systems with relatively high occurrence of *Cryptosporidium* should provide additional treatment
- ICR & SS data indicated wide range of *Cryptosporidium* concentrations in source waters
  - IEWSTR and LT1 might not be adequately protective
- Analytical methods and tool box available to sort and treat systems with high *Cryptosporidium* concentrations
- Two rounds of monitoring to capture potential changes in source water quality (2<sup>nd</sup> round scheduled to start in 2015)



# Overview of LT2 Rule

- Final rule published January, 2006
- Applies to all public water systems using surface water sources (including GWUDI)
- Targeted approach supplements existing regulations to address *Cryptosporidium* in systems with higher risk
  - Filtered systems with high source water concentration must provide additional treatment
  - All unfiltered systems must provide at least 2-log inactivation (or 3-log depending on source water concentration)

# Key LT2 Rule Requirements





# Source Water Monitoring Requirements- Systems $\geq$ 10,000 People

- Filtered Systems - Monthly sampling for *Cryptosporidium*, *E. coli*, and turbidity for 24 months
  - Required sampling schedule, location, analytical methods, and laboratories
  - “Grandfather” equivalent data
  - Required second round of monitoring starting in 2015



# Source Water Monitoring Requirements - Systems <10,000 People

- *E. coli* monitoring once every two weeks for one year to determine if *Cryptosporidium* monitoring is required
- If *E. coli* above trigger value then conduct *Cryptosporidium* sampling (24 samples)
  - Trigger values: mean *E. coli* > 10 cfu/100 ml for lakes and reservoirs or > 50 cfu/100 ml for flowing streams
    - GWUDI systems comply based on nearest water body (if none nearby, based on lake/reservoir source)
  - In guidance to states EPA recommended revised trigger for *Cryptosporidium* monitoring if *E. coli* >100 cfu/100 ml
    - Based on large system monitoring results to reduce burden on small systems while remaining protective



# Bin Boundaries and Risk Mitigation Needs

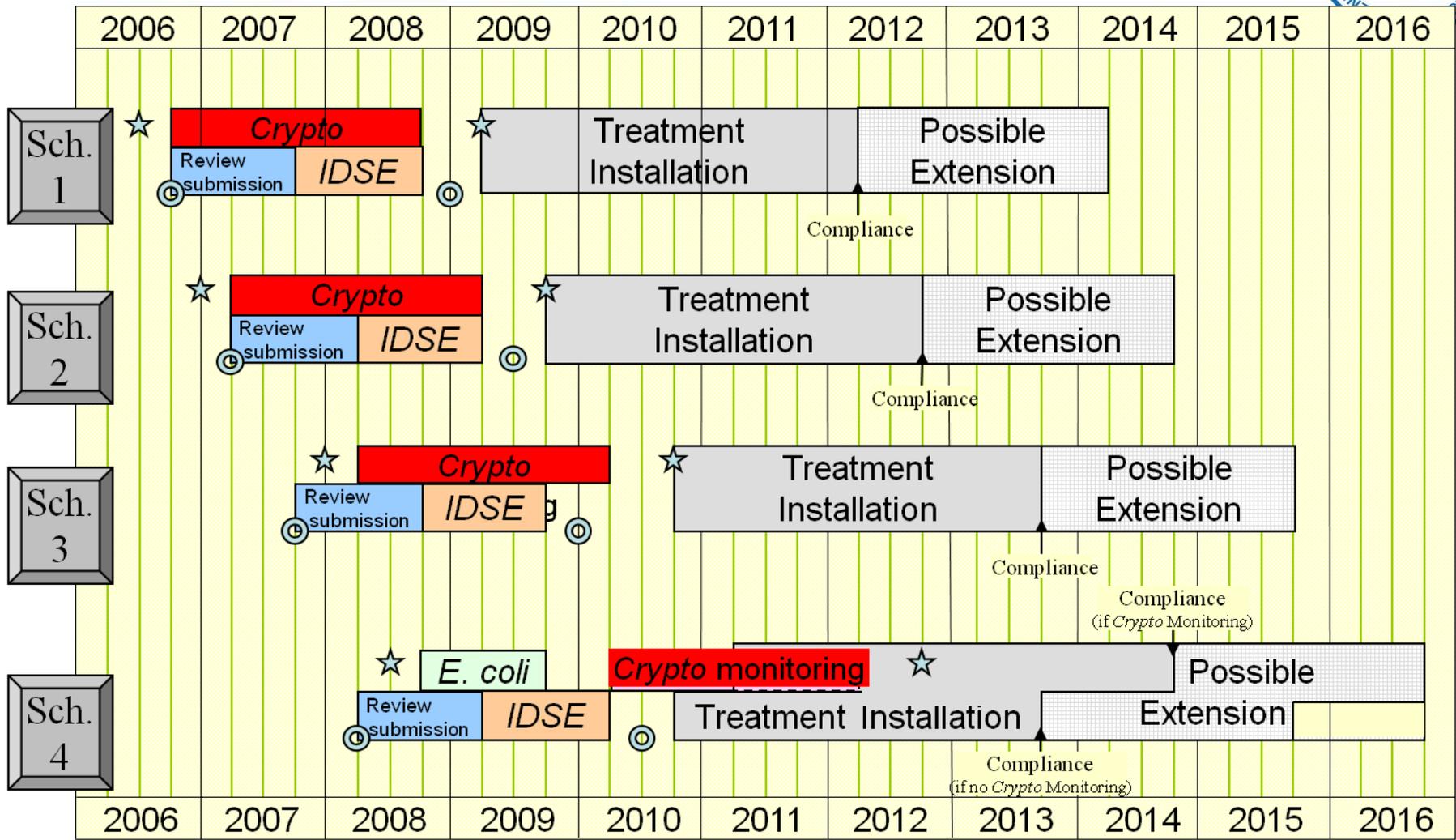
- Bin 1 – Fewer than 0.075 oocysts/liter
  - No additional treatment needed
- Bin 2 – From 0.075 to fewer than 1.0 oocysts/liter
  - 1 – 1.5 log additional treatment depending on filtration in place
- Bin 3 – From 1.0 to fewer than 3.0 oocysts/liter
  - 2 – 2.5 log additional treatment depending on filtration in place
- Bin 4 – 3.0 oocysts/liter or more
  - 3 – 3.5 log additional treatment depending on filtration in place



# Toolbox Options

- Systems select tools from a toolbox to use for additional treatment credits
- Available tools (16 tools available to choose from)
  - Source Toolbox Components
  - Pre-Filtration Toolbox Components
  - Treatment Performance Toolbox Components
  - Additional Filtration Toolbox Options
  - Inactivation Toolbox Components

# LT2 Rule Compliance Schedule



★ LT2 Plan or bin classification due  
 ◎ Stage 2 IDSE Plan or report due

\* Includes associated consecutive systems



# Second Round Monitoring

Schedule	Population served	Begin 2 <sup>nd</sup> round no later than
1	$\geq 100,000$	April 2015
2	50,000 – 99,999	October 2015
3	10,000 – 49,999	October 2016
4	< 10,000 & monitor for <i>E. coli</i>	October 2017
4	<10, 000 & monitor for <i>Crypto</i>	April 2019



# Statutory Requirements and Considerations for the LT2 Review

## 1996 SDWA Amendments Section 1412(b)(9)

- Requires EPA to review each existing National Primary Drinking Water Regulation (NPDWR) at least once every six years and revise, if appropriate.
- Any revision of an NPDWR shall be promulgated in accordance with section 1412, except that each revision “shall maintain, or provide for greater, protection of the health of persons.”



# Statutory Requirements and Considerations for the LT2 Review (con't)

## Jan 2011 - E.O. 13563 (Improving Regulation & Regulatory Review)

- Required each federal agency to develop a plan (consistent with law, resources and regulatory priorities) to periodically review “existing significant regulations to determine whether any such regulations should be modified, streamlined, expanded, or repealed so as to make the agency’s regulatory program more effective or less burdensome in achieving the regulatory objectives.”

## Aug 2011 – EPA Final Plan

- Listed 35 agency-wide regulations including LT2; Stated “EPA intends to evaluate effective and practical approaches that may maintain, or provide greater protection of, the water treated by public water systems and stored prior to distribution to consumers. EPA plans to conduct this review expeditiously to protect public health while considering innovations and flexibility as called for in EO 13563.”



# Statutory Requirements and Considerations for the LT2 Review (con't)

## **SDWA 1412(b)(6):**

- Authorizes EPA to establish a less stringent MCL if the benefits as close to the MCLG as is feasible do not justify the costs.

## **SDWA 1412(b)(6)(C):**

- Does not allow EPA to use costs and benefits in establishing the treatment technique for *Cryptosporidium*
- This authority applies if we were to consider revisions to LT2.



# Technical Review Elements

- Review typically includes evaluation of health risk, analytical methods, treatment technologies/techniques, occurrence, and implementation-related items.
- Overall goal – review technical elements to determine if the basis for the current regulation (MCLG, MCL or TT, or other regulatory requirements) has changed and if it is appropriate to consider revisions while maintaining or providing greater protection of public health (no backsliding allowed) and meeting any other applicable statutory requirements.
- Review may differ slightly for “chemical vs. microbial” regulations and “MCL vs. TT” regulations.



# Outcome of the Review

## **“No Action” appropriate at this time:**

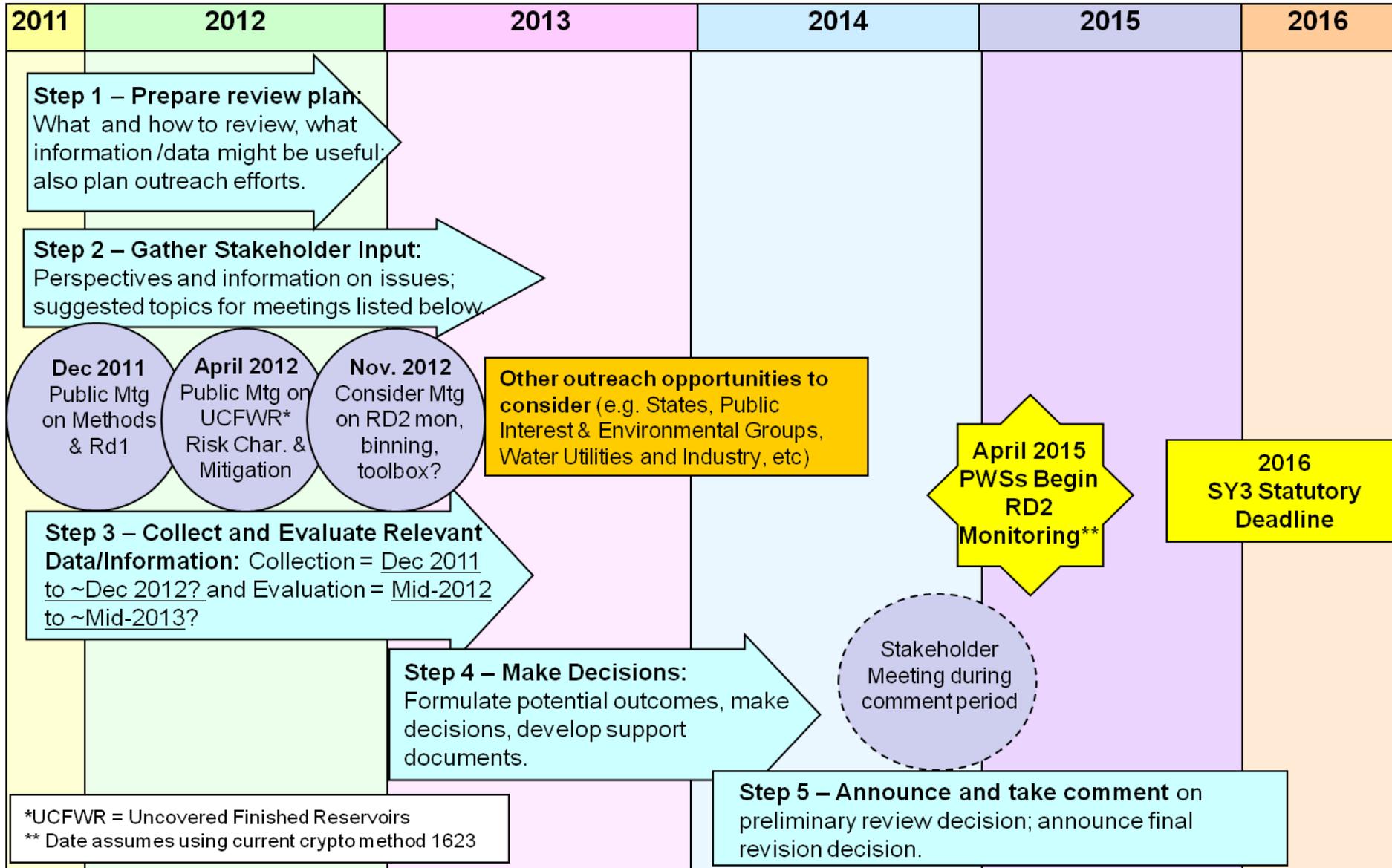
- NPDWR remains appropriate after review of available data/information;
- Risk assessment in process/planned;
- Data or information gaps; or
- Even though there may be potential changes in basis of the NPDWR, found little/no meaningful opportunity for health risk reduction and/or cost savings while maintaining/providing greater protection public health.

**OR**

## **Candidate for Revision**

- EPA plans to initiate rulemaking revision process for particular NPDWR(s).
- Final decision to revise depends on outcome of analyses performed during the rulemaking process.

# Overall LT2 Review – “Tentative” Sequence of Events and Timeframes





# Primary LT2 Requirements Under Review

- Source water monitoring and treatment requirements (including toolbox options).
- Requirement to either treat discharge or cover uncovered finished water reservoirs (4-log for viruses, 3-log for *Giardia*, and 2-log for *Cryptosporidium*).
- Disinfection profiling and benchmarking for *Giardia* and viruses (for those systems planning to make significant changes in disinfection).



# Data Available or Sought to Inform LT2 Review

- National Source Water Occurrence of *Cryptosporidium*
  - Monitoring data by system size, type and source water
  - Other data that might inform national perspective on the occurrence or the interpretation of the occurrence of *Cryptosporidium*?
- Method 1623 Performance
  - With and without enhancements
- Binning Outcomes
- Toolbox Options and Mitigation Credits
  - Data on removal or inactivation credits for existing or new tools
  - Utility experience with toolbox options



**If you have any data and other information that would inform the review of the LT2 rule please send it to:**

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