Overview of LT2 Rule Requirements

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Overview of LT2 Rule

- 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 occurrence
  - All unfiltered systems
- Final rule published January, 2006
Key LT2 Rule Requirements

1. Disinfection Profiling And Benchmarking
2. Source Water Monitoring (Round 1)
3. Risk Bin Classification
4. Implement Treatment from Microbial Toolbox If Required
5. Source Water Monitoring (Round 2)
6. Uncovered Finished Water Reservoirs
Source Water Monitoring Requirements-
Systems ≥10,000 People

- Monthly sampling for Cryptosporidium, E. coli, and turbidity for 24 months
  - Required sampling schedule, location, analytical methods, and laboratories
- “Grandfather” equivalent data
- Second round of monitoring
- All unfiltered systems monitor for Cryptosporidium
Source Water Monitoring Requirements - Systems <10,000 People

• *E. coli* monitoring for one year to determine if *Cryptosporidium* monitoring is required

• If *E. coli* above trigger value then complete *Cryptosporidium* sampling (24 samples)
  – Trigger values: mean *E. coli* > 10/100 ml for lakes and reservoirs or > 50/100 ml for flowing streams
  – For guidance (allowed for under rule), EPA recommended revised *E. coli* triggers to states, >100/100 ml

  • Based on large system monitoring results to reduce burden on small systems while remaining protective
Source Water Monitoring Schedule

• Divided into 4 phases based on:
  – System size based on population served
  – System type (e.g., wholesale systems)
Overview of 4 Phases of Schedule

<table>
<thead>
<tr>
<th>If you have a Subpart H source and are this kind of system:</th>
<th>You are on Schedule number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>System serving 100,000 or more people OR a wholesale system in a CDS that contains a system serving ≥100,000</td>
<td>1</td>
</tr>
<tr>
<td>System serving 50,000 to 99,999 people OR a wholesale system in a CDS that contains a system serving 50,000 to 99,999</td>
<td>2</td>
</tr>
<tr>
<td>System serving 10,000 to 49,999 people OR a wholesale system in a CDS that contains a system serving 10,000 to 49,999</td>
<td>3</td>
</tr>
<tr>
<td>System serving fewer than 10,000 and not a wholesale system</td>
<td>4</td>
</tr>
</tbody>
</table>
LT2 Rule Schedule

- LT2 Plan or bin classification due
- Stage 2 IDSE Plan or report due

* Includes associated consecutive systems

12/7/11

U.S. Environmental Protection Agency
## Second Round Monitoring

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Population served</th>
<th>Begin 2&lt;sup&gt;nd&lt;/sup&gt; round no later than</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$\geq 100,000$</td>
<td>April 2015</td>
</tr>
<tr>
<td>2</td>
<td>50,000 – 99,999</td>
<td>October 2015</td>
</tr>
<tr>
<td>3</td>
<td>10,000 – 49,999</td>
<td>October 2016</td>
</tr>
<tr>
<td>4</td>
<td>&lt; 10,000 &amp; monitor for <em>E. coli</em></td>
<td>October 2017</td>
</tr>
<tr>
<td>4</td>
<td>&lt; 10,000 &amp; monitor for <em>Crypto</em></td>
<td>April 2019</td>
</tr>
</tbody>
</table>
Monitoring: Systems Serving >10,000

- Filtered systems serving ≥ 10,000
  - Monitor for Crypto, E. coli, and turbidity
  - At least monthly for 24 months

- Unfiltered systems serving ≥ 10,000
  - Monitor for Crypto
  - At least monthly for 24 months
Monitoring: Filtered Systems Serving <10,000

- *E. coli* monitoring once every 2 weeks for 12 months
  - Must monitor for *Crypto* if > 10 *E. coli*/100 mL (lake/reservoir source)
  - Must monitor for Crypto if >50 *E. coli*/100 mL (flowing stream source)
    - GWUDI systems comply based on nearest water body (if none nearby, based on lake/reservoir source)
  - EPA recommended revised *E. coli* triggers to states, >100/100 ml, based on large system monitoring results to reduce burden on small systems
Monitoring:
Filtered Systems Serving <10,000

• Crypto monitoring
  – Can be done in lieu of *E. coli*
    • Notify state within 3 months prior to *E. coli* start date
  – 2/month for 12 months OR 1/month for 24 months
  – Compliance date not affected by monitoring frequency
  – Must be done if the PWS fails to properly monitor for E.Coli
Monitoring:

Unfiltered Systems Serving <10,000

• Unfiltered systems serving <10,000 (Schedule 4)
  – Monitor for Crypto
  – 2/month for 12 months OR 1/month for 24 months
  – Compliance date not affected by monitoring frequency
Additional Monitoring

• More frequent sampling is permitted
• Must be evenly spaced throughout monitoring period
Monitoring: *Seasonal Plants*

- If plant does not operate year-round
  - Sample only in months plant is in operation
    - State can set different monitoring period
  - If monitoring for *Crypto* and plant operates less than 6 months
    - Collect 6 or more *Crypto* samples per year for 2 years
    - Samples evenly spaced
Monitoring Avoidance

- Filtered systems that provide at least 5.5-log *Crypto* treatment
- Unfiltered systems that provide at least 3-log *Crypto* treatment
- Notify state no later than sampling schedule submission deadline
- Can stop sampling if system notifies the state in writing that they will install treatment by the applicable treatment compliance date
New Sources and Systems

- Primacy Agency decides whether system should begin monitoring before or after source is on-line
  - Must meet all monitoring requirements
  - Monitor on state-approved schedule
- Meet bin classification and treatment requirements according to state schedule
- Above requirements also apply to new systems
- Begin second round no later than 6 years after bin classification or determination of mean \textit{Crypto} level
Monitoring: Sampling Schedules

• Submit sampling schedule no later than 3 months before required to begin monitoring
  – Specify calendar dates for collecting required samples
• Systems should submit electronically through the LT2/Stage 2 Data Collection & Tracking System (DCTS)
Monitoring: Sampling Requirements

- Sample within 2 days before or after dates specified in schedule unless:
  - Extreme conditions or situations
    - Sample as close to scheduled date as feasible
    - Submit explanation to the State
  - Unable to report an analytical result
    - Sample no later than 21 days after notification of problem
    - Submit explanation to state
    - State can approve alternate resample date
Monitoring:

Sample Location

- Submit description of sampling location to state concurrent with submittal of sampling schedule
- Must sample for each plant treating surface or GWUDI source
- If multiple plants draw from same influent, state can approve one result
Monitoring: Sample Location

• Collect prior to:
  – Chemical treatment – State Flexibility for alternatives
  – Point of filter backwash addition
  – Bank filtration (if used for treatment credit)
    • Collect after bank filtration if used as pretreatment to filtration plant
Monitoring: Sample Location

- GWUDI sources
  - Collect from ground water prior to treatment
- Multiple sources
  - Sample at tap where sources are combined prior to treatment
  - If no tap, sample at each source near intake on the same day
    - Composite samples before analysis
    - Analyze samples separately and calculate weighted average
Monitoring:
Analytical Methods & Labs

• Cryptosporidium
  – Method 1623 or 1622
  – Use U.S. EPA or approved lab
  – Use 10L sample or packed pellet volume of 2 mL
  – Matrix spike sample requirements
  – Samples should be shipped overnight
    • Must be stored between 0°C and 10°C (not frozen)
Monitoring: Analytical Methods & Labs

• *E. coli*
  – Use methods listed in 40 CFR 136.3(a)
  – Use U.S. EPA or state-certified lab or any lab that has been approved to measure total coliform or fecal coliform under 141.74
  – No more than 30 hours between collection and analysis
  – If 30 hour holding time not feasible, State can approve up to 48 hours between collection and analysis – only with Colilert reagent version of SM 9223B
  – Maintain samples between 0°C and 10°C
Monitoring: Analytical Methods & Labs

• Turbidity
  – Use methods listed in 40 CFR 141.74(a)(1)
  – Must be measured by state-approved party
Monitoring

Reporting Results

• Report no later than 10 days after end of the month following month of sample collection

• Systems serving $\geq 10,000$
  – Report to U.S. EPA electronically
  – May use alternative approach

• Systems serving $< 10,000$ report results to state

• All systems report second round results to state
## Monitoring: Reporting Results

### Data Elements to Report

<table>
<thead>
<tr>
<th>Crypto</th>
<th>E. coli</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWSID</td>
<td>PWSID</td>
</tr>
<tr>
<td>Facility ID</td>
<td>Facility ID</td>
</tr>
<tr>
<td>Sample collection point</td>
<td>Sample collection point</td>
</tr>
<tr>
<td>Sample type (field or matrix spike)</td>
<td>Analytical method number</td>
</tr>
<tr>
<td>Sample volume filtered (L) to nearest (\frac{1}{4}) L</td>
<td>Method type</td>
</tr>
<tr>
<td>Was 100% of filtered volume examined?</td>
<td>Source type</td>
</tr>
<tr>
<td>Number of oocysts counted</td>
<td>E. coli/100mL</td>
</tr>
<tr>
<td>Additional information</td>
<td>Turbidity</td>
</tr>
</tbody>
</table>