Introduction

Stage 2 Rule Package
Stakeholders Meetings
October 24, 2006

1

Housekeeping:

- Sign in
  - One sheet for the web site
  - One sheet for contact information
  - Print name and affiliation clearly
- Cell Phones off
- Lunch is on your own
  - There is a cafeteria on this floor
  - Also in Building A
  - List of restaurants in package
  - Please try and return on time
- In case of Emergency, meet in the Parking Garage
- Restrooms

2

Ground Rules

- Mutual respect
- No side conversations
  - everyone wants to share your input
- All input is welcome
- Comments will be recorded on flip charts
- Issues that are outside scope will be place in "parking lot" for later discussion

3

Goals of This Meeting

- Get input on specific elements of LT2:
  - Ultraviolet Light Disinfection
  - Membranes
  - Source Water Protection
  - Turbidity Optimization
  - Other Toolbox Items
  - Monitoring for New Sources and Plants
  - Other Monitoring Topics
- Share your input on the topics discussed today

4

Roles and Responsibilities

- Facilitator
  - Impartially assist group in conducting discussions and negotiations
  - Ensure participation of all group members
- Scribe
  - Capture all comments impartially and clearly
  - Make sure that written record captures sense of comments
- Stakeholders
  - Provide expert input, Provide direction to TCEQ, Learn from others / teach others, Represent constituency, Respect and recognize other constituency perspectives
- TCEQ Program Staff
  - Listen to stakeholders, Provide expert input when asked
- TCEQ Management
  - Review input and ensure that staff incorporates input in accordance with policy

5

Mission

- TCEQ Mission:
  - "...protect our state's human and natural resources consistent with sustainable economic development."

6

SCHEDULE

- Morning
  - Breakout sessions on LT2 toolbox technologies
- Afternoon
  - Summary of morning sessions
  - General discussion on monitoring

7

Long Term 2 Enhanced Surface Water Treatment Rule

Stage 2 Rule Package Stakeholder Meeting
October 24, 2006

8

Purposes of the LT2ESWTR

- Improve public health protection
  - Reduce illness caused by *Crypto* and other microorganisms
  - Tailor requirements based on:
    - Level of treatment
    - Source water quality
    - System size
  - Provide systems and states with flexibility
- Supplement and fill data gaps
  - Most systems will only need to monitor
- Balance disinfection with control of DBPs

9

What is *Cryptosporidium*?

- Protozoan parasite that lives and reproduces in one host
- Transmission
  - Contaminated food or water
  - Direct contact with feces
  - Direct or indirect contact with sick individuals
- 4-5 micron Oocysts
  - Can survive for months without host

10

Crypto Health Effects

- Mild to severs diarrhea, dehydration, stomach cramps and slight fever
- Immunocompromized individuals can die from infection by cryptosporidium
- No cure for cryptosporidiosis is known

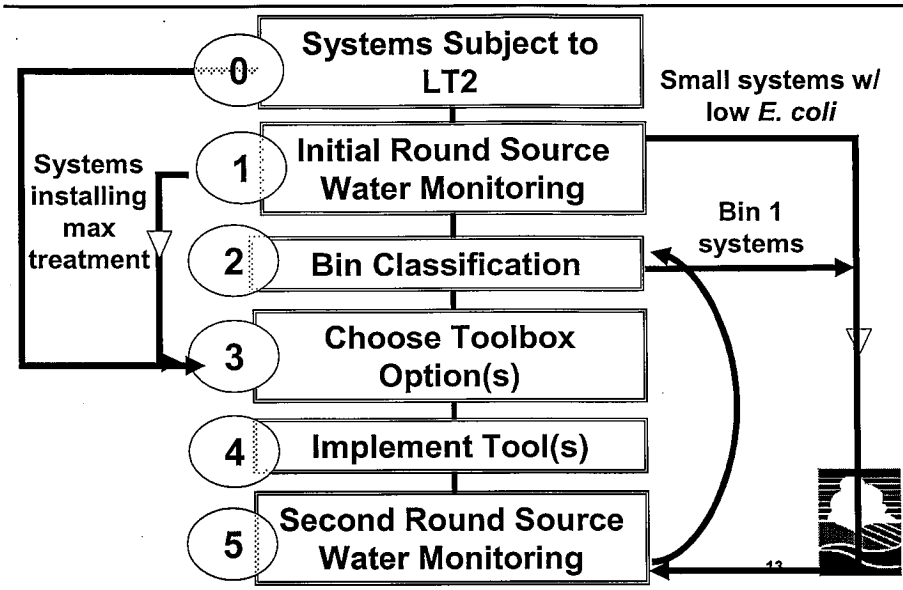
11

LT2ESWTR Overview

- Source water monitoring
- Screening procedure for small systems
- Target treatment for highest-risk systems

12

LT2ESWTR Process



13

Schedules

If you have a SW or GUI source and are this kind of system:	*You are on Schedule number:*
System serving 100,000 or more people OR a wholesale system in a CDS that contains a system serving ≥100,000	1
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	2
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	3
System serving fewer than 10,000 and not a wholesale system (not covered in today's training)	4

14

Combined Distribution Systems (CDSs)

- CDS requirements apply to wholesale system only
- Compliance date for wholesaler in CDS is based on population of largest system in CDS
- Largest system is not necessarily the wholesaler
- Not all requirements apply to purchased systems without a SW or GUI source

15

Implementation Timeline

Schedule 1

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	*Crypto* monitoring			Treatment installation			Possible extension			*Crypto* monitoring			

Schedule 2

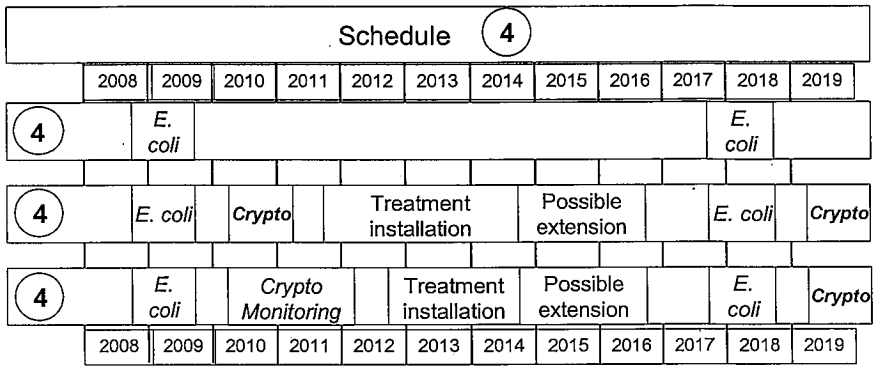
2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
2	*Crypto* monitoring			Treatment installation			Possible extension			*Crypto* Monitoring			

Schedule 3

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
3			*Crypto* monitoring			Treatment installation		Possible extension			*Crypto* Monitoring		

16

Implementation Timeline



17

Bin Classification for Crypto Systems

Bin	Crypto level	Inactivate or Remove
Bin 1	Crypto < 0.075/L	No added
Bin 2	0.075 to 1.0 /L	1-log
Bin 3	1.0 to 3.0 /L	2-log
Bin 4	≥ 3.0 /L	2.5-log

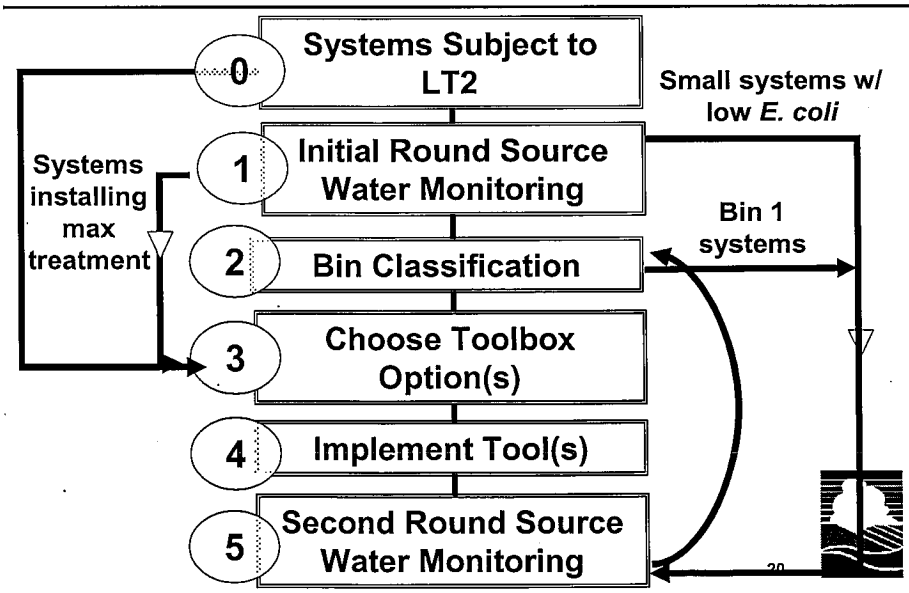
18

Bin Classification for E. Coli Systems

Bin	E. Coli. or Crypto level	Inactivation or removal
Bin 1	E. Coli < 10/100mL (lake) E. Coli < 50/100mL (flowing stream) Crypto < 0.075/L	No added
Bin 2	0.075 to 1.0 /L	1-log
Bin 3	1.0 to 3.0 /L	2-log
Bin 4	> 3.0 /L	2.5-log

19

LT2ESWTR Process



20

Toolbox Options

- Source protection and management
  - Watershed control Program
  - Alternative Source/intake management
- Prefiltration
  - Presedimentation basin with Coagulation
  - Two-stage lime softening
  - Bank filtration
- Treatment performance
  - CFE performance
  - IFE performance
  - Demonstration of performance

21

Toolbox Options (cont.)

- Additional filtration
  - Bag or Cartridge filtration (individual or in series)
  - Membrane
  - Second Stage Filtration
  - Slow Sand Filters
- Inactivation
  - Chlorine Dioxide
  - Ozone
  - UV

22