

Safe Drinking Water Program Overview

**Advisory Panel for Emerging
Contaminants**

December 2012

General Regulatory Background

- How and under what authority are contaminants regulated
- Applicability of regulations
- What is regulated
- Regulatory process/flow

Safe Drinking Water Act

- The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under the SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards.

SDWA Continued...

- SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells.

What is a “Public Water System” and what is ADEQ’s scope of regulatory coverage?

- Definition of a Public Water System: § 49-352(B)(1) – A water system that provides water for human consumption...and has at least 15 service connections or regularly serves at least 25 people for at least 60 days per year

Two Types of Regulated Public Water Systems:

- **Community Water Systems**

Example: City of Phoenix

- **Non-Community Water Systems**

- Non-Transient, Non-Community Water Systems

Example: Schools

- Transient, Non-Community Water System

Example: Restaurants, Campgrounds

Monitoring Requirements – Who Tests for What?

- Monitoring Requirements for Community Water Systems:

Community water systems perform the most rigorous monitoring under state and federal regulations by testing at regular intervals for over 90 regulated contaminants

Monitoring Requirements for Non-Transient, Non- Community Water Systems

- Identical to Community water systems
PWSs minus Fluoride and Radionuclides

Transient, Non-Community Water System Monitoring Requirements

- Monthly bacteria testing
- Annual nitrate/nitrite testing

What Is Regulated

- Microorganisms – (e.g., coliform bacteria)
- Disinfectants (e.g., chlorine)
- Disinfection Byproducts (e.g., TTHMs)
- Inorganic Contaminants (e.g., arsenic)
- Organic Contaminants (e.g., pesticides, herbicides, petroleum derivatives)
- Radionuclides (e.g., gross alpha, uranium)

How does the US EPA set primary drinking water standards?

- Through a three-step process...

Step #1

- EPA identifies contaminants that may adversely affect public health and occur in drinking water with a frequency and at levels that pose a threat to public health.

Step #2

- EPA determines a maximum contaminant level goal for the contaminants it decides to regulate (the goal is the level of a contaminant below which there is no known or expected risk to human health).

Step #3

- EPA specifies a maximum contaminant level (MCL)

Maximum Contaminant Levels- MCLs

- Maximum permissible level of a contaminant in drinking water which is delivered to any user of a public water system
- MCLs are enforceable
- Set as close to the maximum contaminant level goals as possible
 - Arsenic MCL = 10 ppb
 - Arsenic MCLG = zero

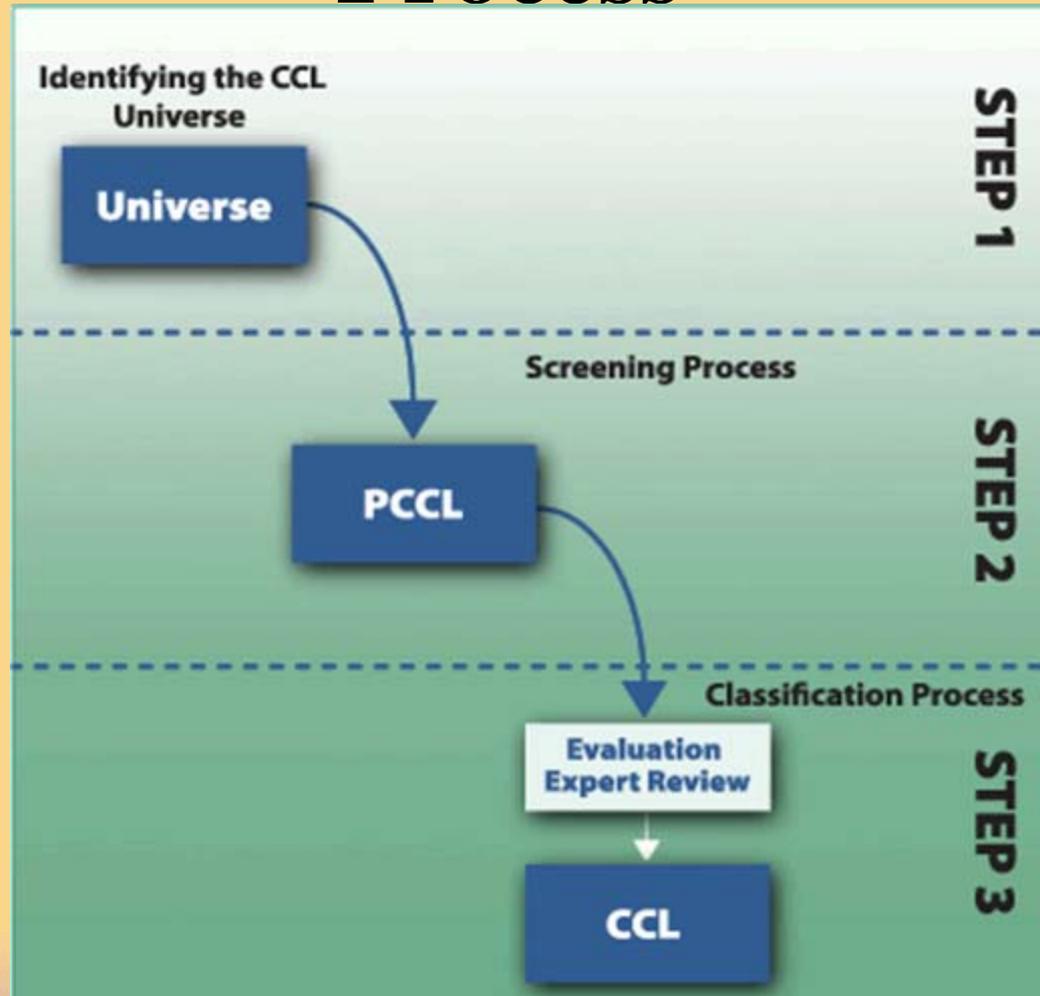
The SDWA Regulatory Process

- The Safe Drinking Water Act includes a process that EPA must follow to identify and list unregulated contaminants, which may require a national drinking water regulation in the future.
- EPA must periodically publish this list of contaminants (called the Contaminant Candidate List or CCL) and decide whether to regulate at least five or more contaminants on the list (i.e., make regulatory determinations).

Making Regulatory Determinations

- When making a determination to regulate, the Safe Drinking Water Act requires consideration of three main criteria:
 - the potential adverse effects of the contaminant on the health of humans,
 - the frequency and level of contaminant occurrence in public drinking water systems, and
 - whether regulation of the contaminant presents a meaningful opportunity for reducing public health risks

Contaminant Prioritization: CCL Process



Slide Courtesy of the U.S. Environmental Protection Agency Office of Ground Water

Contaminant Candidate List (CCL) History

- CCL 1 - Finalized 1998
 - Nine contaminants selected for regulatory determinations
 - In 2003 EPA published its final determination that no regulatory action is appropriate or necessary for all nine contaminants
- CCL 2 - Finalized 2005
 - Eleven contaminants selected for regulatory determination
 - In 2005 EPA published its final determination that no regulatory action is appropriate or necessary for all eleven contaminants
- CCL 3 - Finalized 2009
 - Contaminant review is ongoing
- CCL 4 – EPA accepted nominations through June 2012

Unregulated Contaminant Monitoring Rule (UCMR)

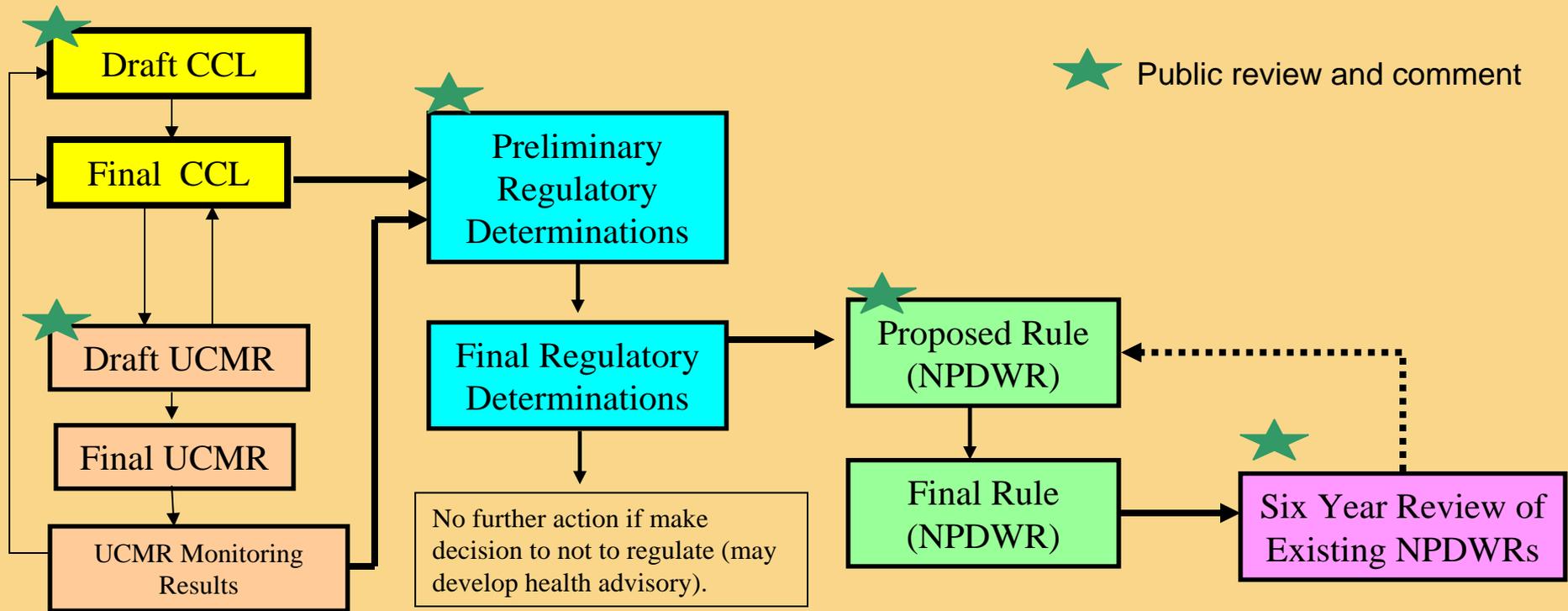
- EPA uses the Unregulated Contaminant Monitoring (UCM) program to collect data for contaminants suspected to be present in drinking water, but that do not have health-based standards set under the Safe Drinking Water Act (SDWA).
- Every five years EPA reviews the list of contaminants, largely based on the Contaminant Candidate List.

History of the UCM Program:

UCMR 3

- The final rule "Revisions to the Unregulated Contaminant Monitoring Rule (UCMR 3) for Public Water Systems" was published in the *Federal Register* on May 2, 2012 (77 FR 26072).
- UCMR 3 monitoring will take place from 2013-2015, and will begin in January 2013.
- Monitoring for 28 chemicals and two viruses.

Generalized Flow of Regulatory Processes



At each stage, need increased specificity and confidence in the type of supporting data used (e.g. health and occurrence).

(slide courtesy of US EPA Office of Groundwater)

Review of Established Standards

- The Safe Drinking Water Act also requires EPA to review each national primary drinking water regulation at least once every six years and revise, as appropriate.
- SDWA specifies that any revision must maintain or increase public health protection.

Now to the unregulated...

- What is not regulated?
 - Virtually everything else

National Secondary Drinking Water Regulations

- National Secondary Drinking Water Regulations (NSDWRs or secondary standards) are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards

National Secondary Drinking Water Regulations Include:

- **Aluminum** - 0.05 to 0.2 mg/L, colored water
- **Manganese** - 0.05 mg/L, black to brown color; black staining; bitter metallic taste
- **Odor** - 3 threshold odor number, "rotten-egg", musty or chemical smell
- **Total Dissolved Solids** - 500 mg/L, hardness; deposits; colored water; staining; salty taste
- **Silver** 0.10 mg/L, skin discoloration; graying of the white part of the eye

Impacts of Serving Water with Elevated Levels Secondary Contaminants

- Water System Operational Concerns
- Increased Water System Operational Costs
- Shortened Lifespan of Household Appliances (e.g., hot water heaters, evaporative coolers, washing machines, etc,
- Staining of plumbing fixtures, appliances and clothing
- Dissatisfied customer base

What's Being Done At The Federal Level To “Fine Tune” The Regulatory Process?

EPA's General "New Strategy"

Background...

- On March 22, 2010, EPA Administrator Lisa Jackson announced a new drinking water strategy which outlines four principles to expand public health protection for drinking water.
- One of the four principles is to address contaminants as groups.
- By working within the current regulatory framework, EPA is looking at ways to more efficiently and cost-effectively enhance the protection of drinking water.

Why Would EPA Explore Modifying the Existing Process (i.e., regulate groups vs. individual contaminants)?

- The current regulatory framework for drinking water protection mainly focuses on assessing risks from exposure to individual contaminants (e.g., perchlorate)
- This framework poses high administrative burdens and resource requirements on both the regulators (Federal and State Governments) and public water systems

Initial Thoughts:

- Evaluating and addressing contaminants as groups during the regulatory process may:
 - better protect public health
 - consume less time and resources
 - account for risks from multiple contaminants
 - deal more effectively with an increasing number of emerging contaminants
 - provide water systems with an opportunity to make better long-term decisions on capital investments.

Thank You! Questions?

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