EPA's Third Contaminant Candidate List (CCL 3)

National Monitoring Conference

Denver, CO

April 29, 2010

Thomas R. Carpenter
Office of Ground Water
and Drinking Water
US EPA

Presentation Overview

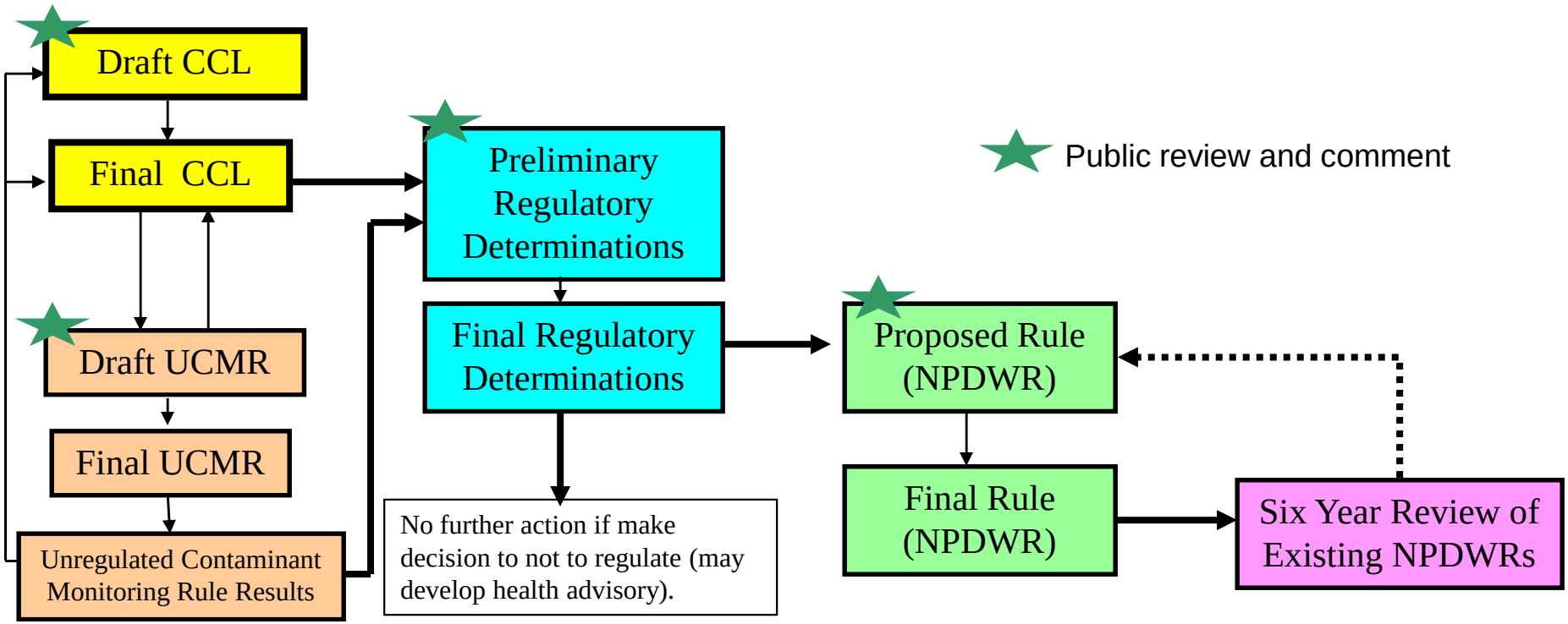
- Statutory Requirements
- CCL Process
- Types of Data and Information
- Final CCL 3
- Next Steps
- Questions

CCL 3: Accomplishments

CCL 3 was developed with a new approach that:

- Is data driven, transparent, and reproducible,
- Increases public and stakeholder involvement,
- Considers life stages and sensitive groups,
- Identifies, evaluates, and screens a large universe of chemicals and microbes in separate but parallel processes,
- Is an adaptive process that can be refined in future iterations as more knowledge and data are acquired, and
- Identifies priority contaminants that may require regulation.

SDWA Risk Management Approach



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

CCL Statutory Requirements

- **Safe Drinking Water Act (SDWA) requires EPA:**
  - Publish a list of unregulated contaminants (the CCL) which may require regulation and are known or anticipated to occur in public water supplies every 5 years.
  - Determine whether or not to regulate at least 5 CCL contaminants.
- **In developing the list, SDWA also specifies that EPA:**
  - Consider substances listed on CERCLA and FIFRA.
  - Consult with the scientific community including the Science Advisory Board (SAB).
  - Provide an opportunity for public comment.

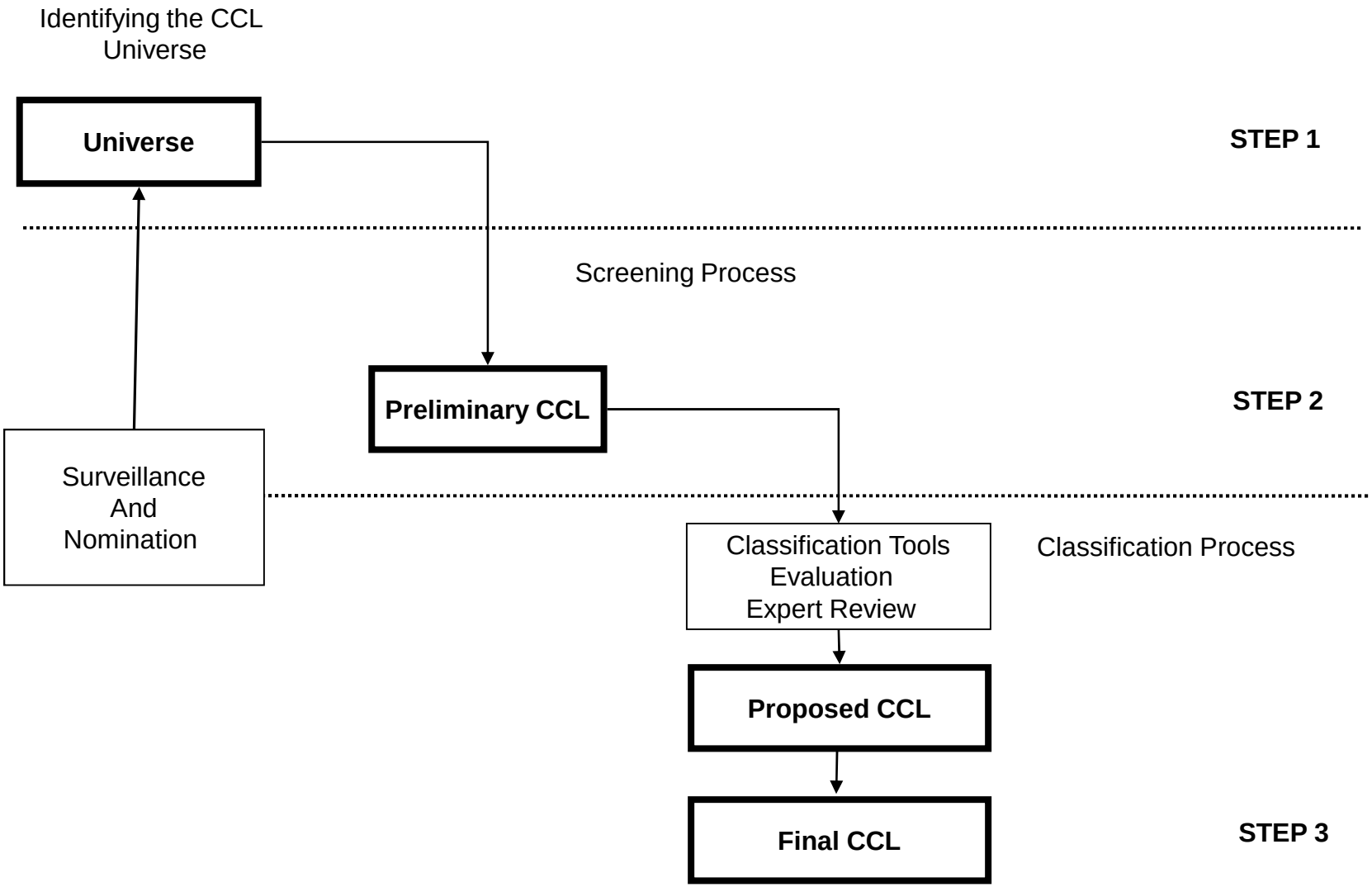
Guiding Principle of CCL 3

Occurrence in public water systems at frequency and levels of public health concern

Health Effects

Occurrence

Contaminant Candidate List 3 Process



Expert / Public Involvement

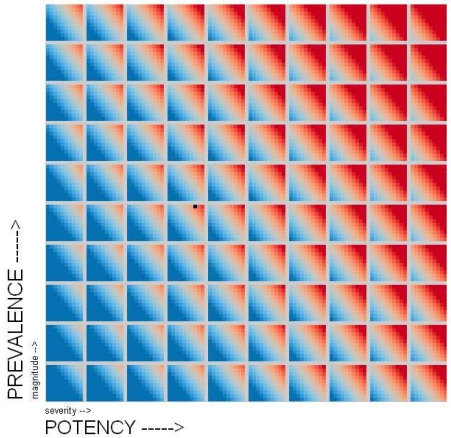
- National Academy of Sciences – National Research Council (NRC) (2001)
- National Drinking Water Advisory Council (NDWAC) Workgroup (September 2002 – July 2004)
- Public Stakeholder Meeting (September 2004)
- Convened 6 Expert Panels (July 2005 - March 2006)
- Sought Nominations from the Public in Federal, Register (October 2006)
- SAB Review (April 2007)

Screening Chemical Universe to the PCCL

Health Effects (e.g., LD_{50}, RfD, LOAEL, Cancer Classifications)	**Occurrence (finished water, ambient water, release, production)**					
	No Detect	**Very Low**	**Low**	**Moderate**	**High**	**Very High**
Increasing Toxicity						

Evaluating Chemicals on the PCCL for Listing

- Classification Models used as Tools
  - Standardized Protocols for different types of data
    - Occurrence and Health Effects
  - Results Predicted Decision
    - List , List?, Not List?, Not List



- Evaluate the Results and Available Data

- List contaminants with Health Reference Level (HRL)/ Water Concentration Ratio $\leq$ 10
  - HRL converts potency data to a concentration in water
  - Concentration considered detection in drinking water, ambient water, or OPP modeled occurrence estimates
  - Ratio serves as a benchmark that suggests level of concern

- List contaminants with release data and classification model result = List or List?

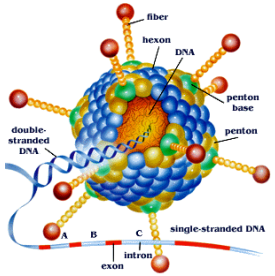
Screening Pathogens to the PCCL

Remove Pathogens from further consideration if:

- Survival or transmission in water implausible
- Pathogen or disease transmitted exclusively by direct or indirect contact body fluids
- Pathogens transmitted exclusively by animals, insects, and food borne pathways
- Pathogens causing disease not associated with water-related transmission

Evaluating PCCL Pathogens for Listing

- Developed Scoring Protocols
  - Recognized the limited occurrence data available for pathogens
  - Standardized Scoring Protocols
    - Occurrence, Waterborne Disease Outbreaks, and Health Effects
  - PCCL Pathogens ranked relative to one another



Sought Information on Pharmaceuticals

- Addressed pharmaceuticals in the Draft FR Notice
- 39 letters included comments on pharmaceuticals.
  - Commenters noted detection of contaminants at low levels
  - Differed on whether or not pharmaceuticals should be included on the CCL 3.
- Contacted State and Territory's Department of Health and/or Environment on how they are addressing issue
  - 16 of the 37 responses specifically addressed CCL 3.
  - States cited limited budget and resources.
  - Some states noted that if the data and information meet the listing criteria, these contaminants should be included on the CCL 3.

Final CCL 3 Selection

- OW evaluated comments and best available data on contaminants

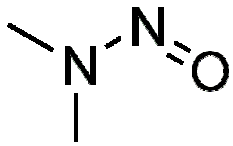
- Re-applied CCL 3 process to contaminants
  - Listed chemical contaminants with a HRL/Concentration ratio ≤ 10
  - Selected chemical contaminants with List or List? model outcomes based on TRI data or pesticide application data
  - Selected 104 chemicals from the 586 on the PCCL

  - Re-evaluated waterborne disease outbreak protocol and data
  - Selected 12 microbes of the 29 on the PCCL that had the highest scores

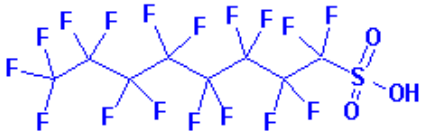
- Final CCL 3 FR notice identifies additional data needs to prioritize next steps
  - Health effects, occurrence, and detection methods

Types of Contaminants on the Final CCL 3

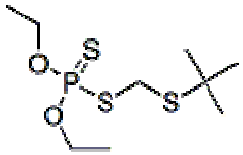
- 11 Disinfection byproducts
  - i.e., NDMA, aldehydes, halogenated compounds.

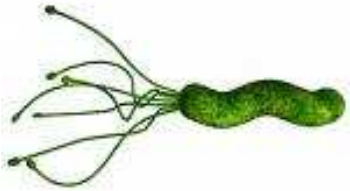


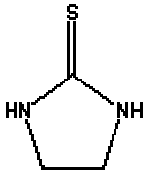
- Perfluorinated contaminants (PFOA & PFOS)
- 9 Hormones and an antibiotic
  - Considered occurrence in water and health reference level.
- 43 Pesticides and/or degradates
  - Detected occurrence, modeled concentrations, and application rates considered.
  - Organophosphates, Degradates,

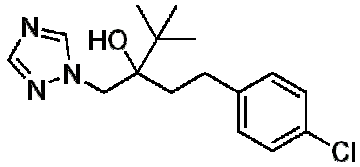


- 12 Pathogens
  - Identified 12 waterborne pathogens that have known or anticipated occurrence in PWS
- 3 Cyanotoxins









Types of Contaminants on the Final CCL 3

Selected contaminants include:

- 9 based on reproductive or developmental health effects
- 31 based on carcinogenicity

CCL 1 and CCL 2 contaminants re-evaluated for CCL 3

- 20 contaminants with Regulatory Determinations not included on CCL 3 - no new data
- Remaining 40 contaminants evaluated for CCL 3
- 25 of 40 included on CCL 3

UCMR includes 16 CCL3

- 5 PBDEs limited occurrence dataUCMR
- Pesticide - parent degradate pairings in UCMR
- Two N-Nitroso compounds picked up in NDMA method

Next Step: Regulatory Determination

Collecting data and information on occurrence and health effects to regulate a contmainant EPA must determine that -

- *The contaminant may have an adverse effect on the health of persons;*
- *The contaminant is known to occur or there is substantial likelihood that the contaminant will occur in public water systems with a frequency and at levels of public health concern; and*
- *In the sole judgment of the Administrator, regulation of such contaminant presents a meaningful opportunity for health risk reduction for persons served by public water systems.*

SDWA Section 1412(b)(1)

Next Step: Drinking Water Strategy

- Focus is on four principles that will provide greater protection of drinking water.
  - Address contaminants as a groups rather than one at a time so that enhancement of drinking water protection can be achieved cost-effectively.
  - Foster development of new drinking water technologies to address health risks posed by a broad array of contaminants.
  - Use the authority of multiple statutes to help protect drinking water.
  - Partner with states to share more complete data from monitoring at public water systems (PWS).

Information & Contacts

WEBSITES:

http://www.epa.gov/safewater

http://www.epa.gov/safewater/ccl

http://www.epa.gov/safewater/sdwa/dwstrategy.html

CCL 3 Docket:
http://www.regulations.gov
EPA-HQ-OW-2007-1189

Safewater Hotline: 1-800-426-4791