PCB Pollutant Minimization Plans: Background and Guidance

New Jersey
Water Environment Association

PCB Pollutant Minimization Workshop
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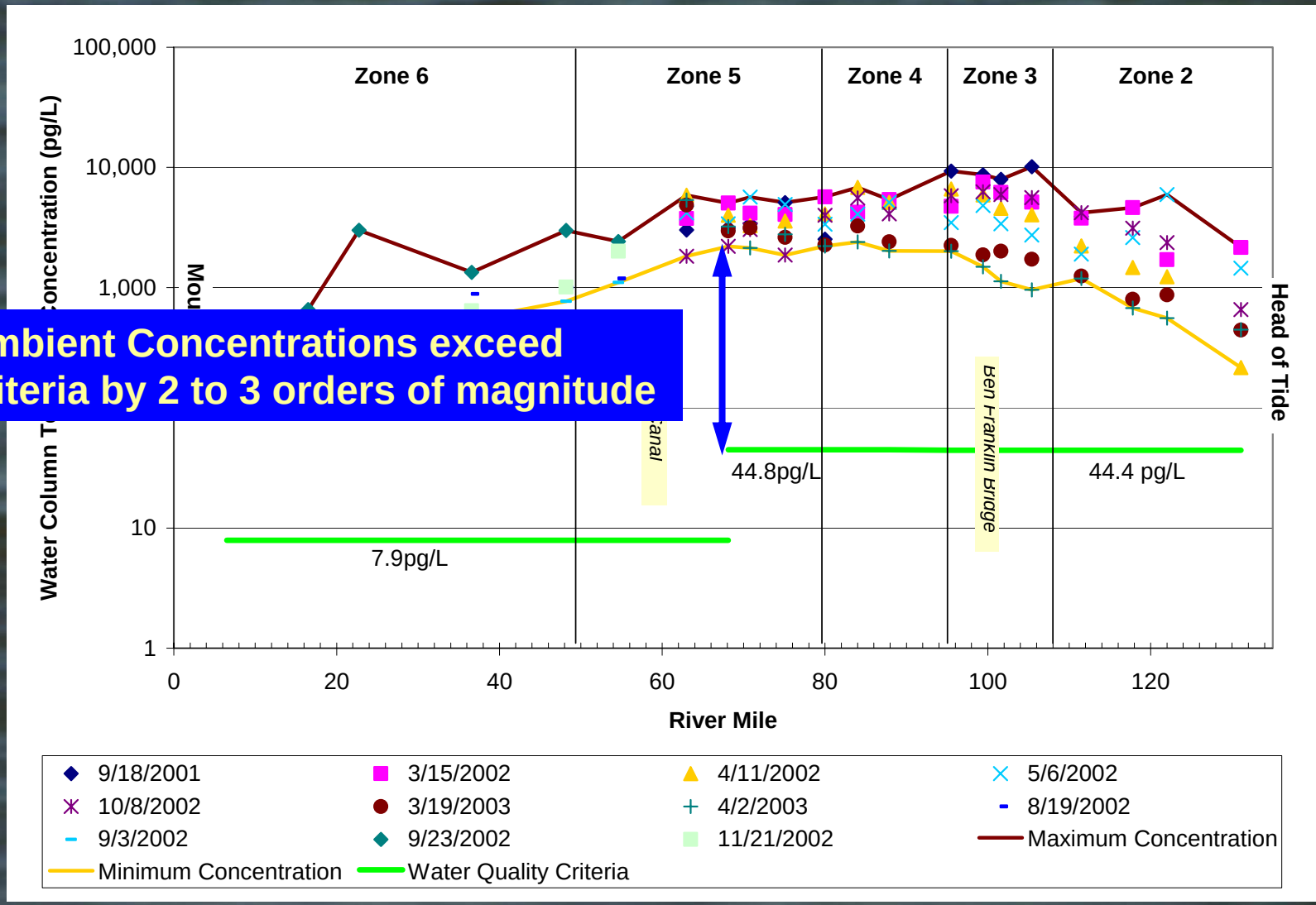
Rutgers University EcoComplex
Bordentown, NJ

John Yagecic, P.E.

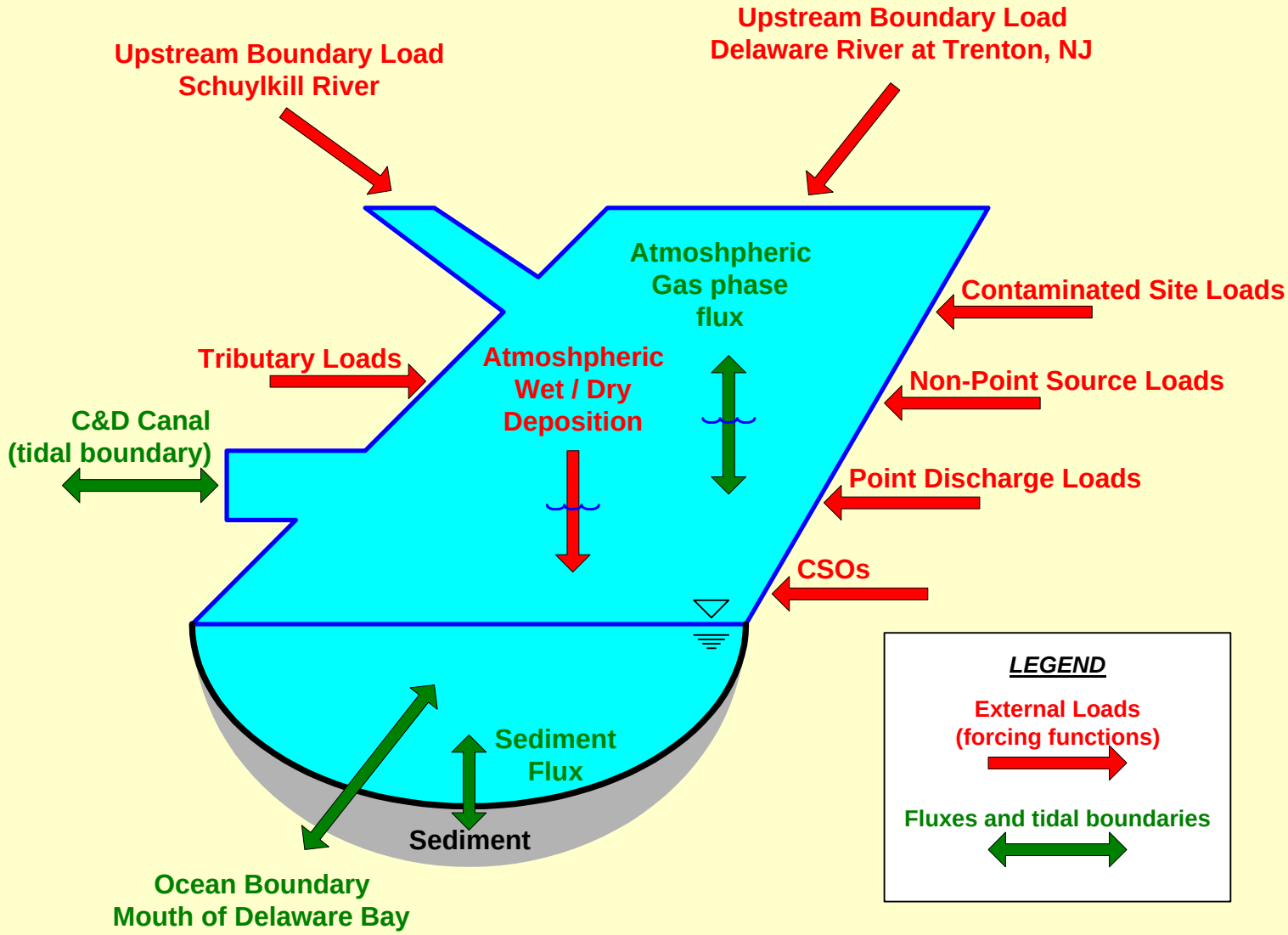
- In December 2003, EPA Regions 2 & 3 issued TMDLs for PCBs in the Delaware Estuary.
- Zones 2 through 5
- River Mile 133.4 at the head of tide at Trenton, NJ down to the head of Delaware Bay at River Mile 48.2.

Why?

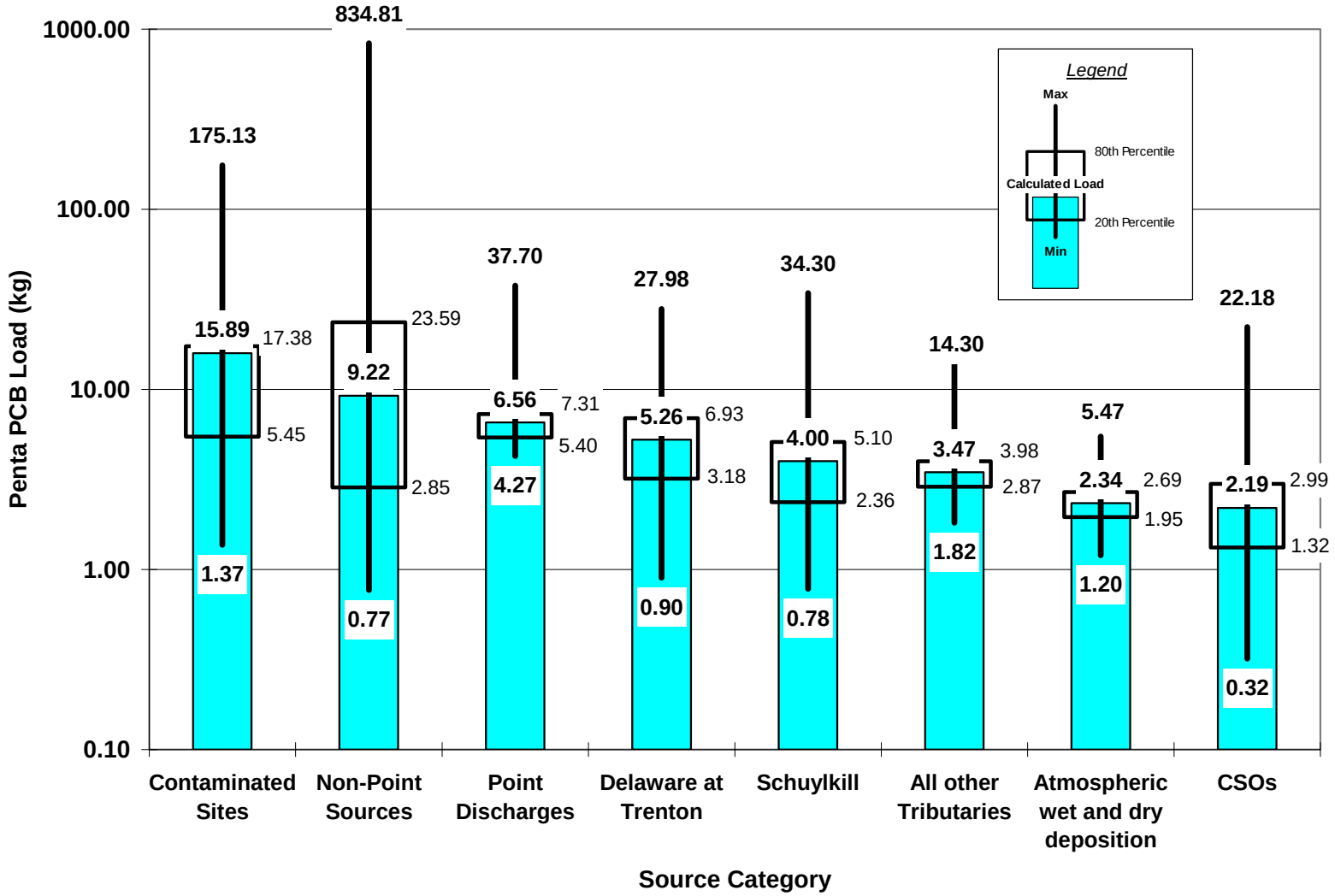
Ambient Concentrations Vs. Criteria (*Log Scale*)



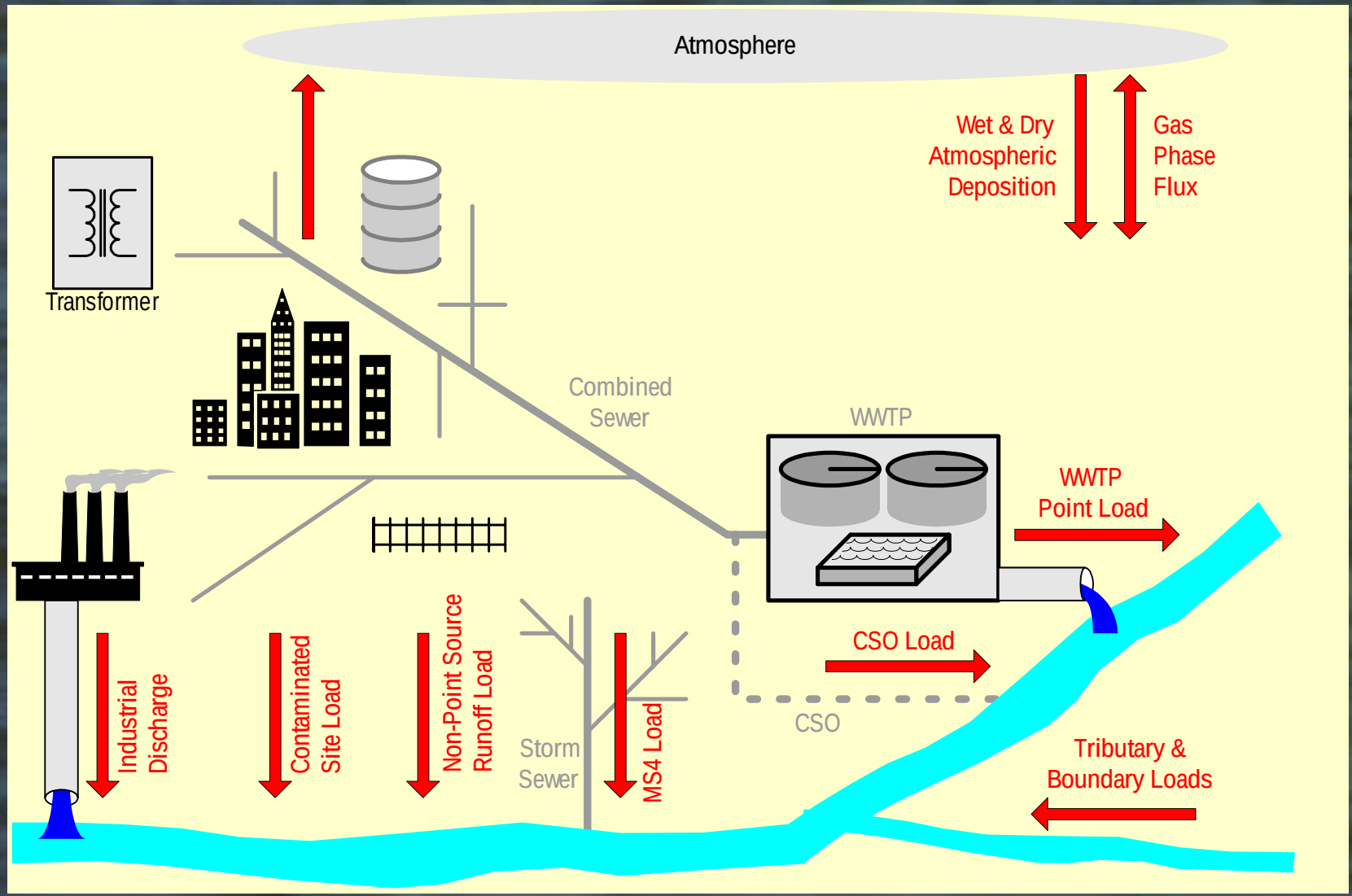
Load Vs. Fluxes



Estimated Loads by Category and Uncertainty



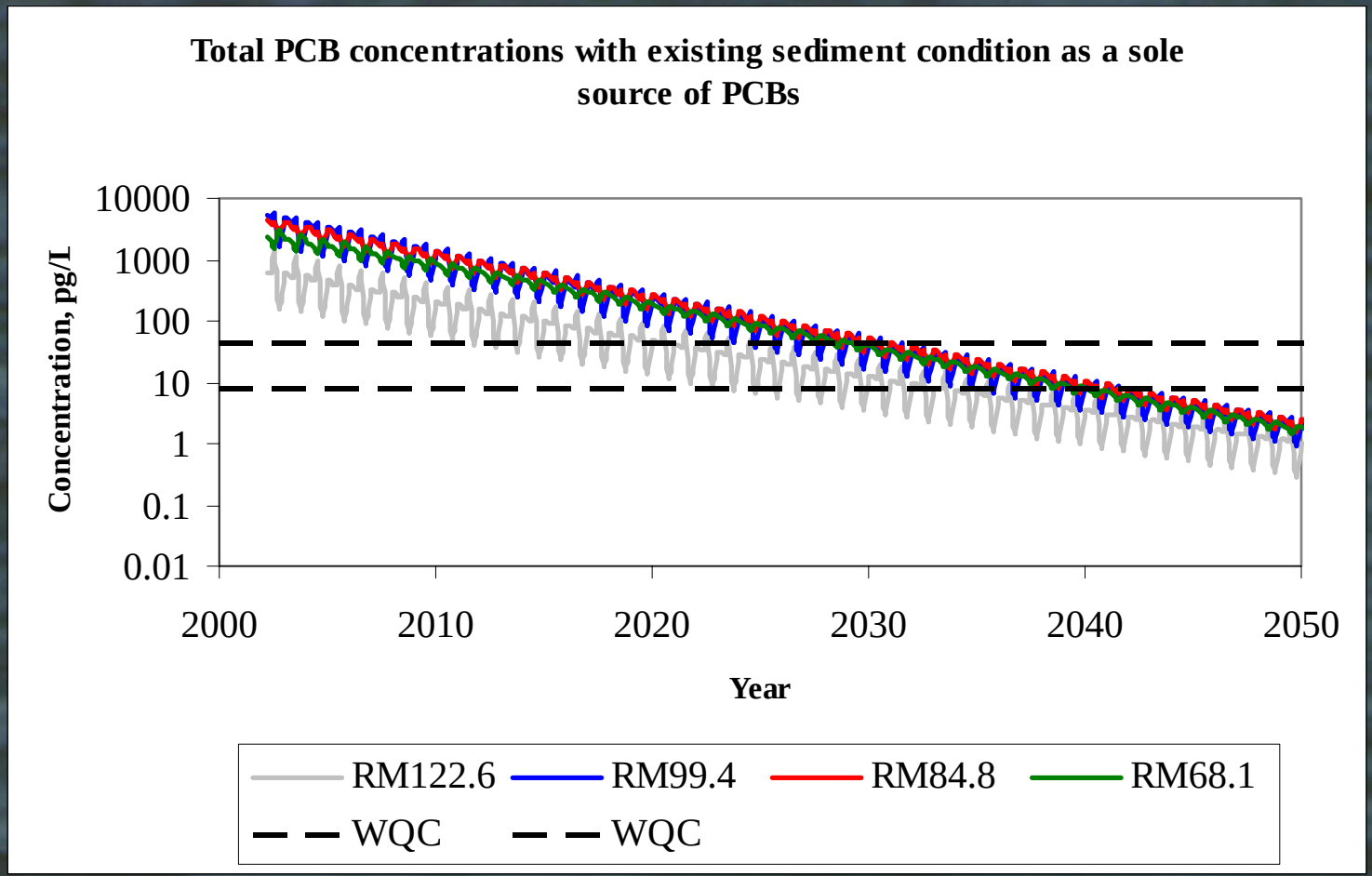
Original Sources of PCBs not the same as Loading Source Categories



WHY?

PCB sources and pathways may be readily identified!

Long Duration Problem



- **Modeling showed that even if all PCB loads could be instantaneously shut off, criteria wouldn't be achieved for ~35 years due to sediment alone**

Implementation of the Stage 1 PCB TMDLs

- Dischargers to receive *non-numeric* water quality-based effluent limits (WQBELs) consistent with their WLAs;
  - 40 CFR 122.44(k)allows non-numeric, BMP-based WQBELs where appropriate
- DRBC may require other actions to implement TMDLs;
- Typical permit will include discharge monitoring with Method 1668A and Implementation of a PCB pollutant minimization program;

From
"TOTAL MAXIMUM DAILY LOADS FOR POLYCHLORINATED BIPHENYLS (PCBs) FOR ZONES 2 -5 OF THE TIDAL DELAWARE RIVER"
December 15, 2003
Executive Summary, Pages xii and xiii

2 Tracks in Developing the PMP Approach

Outlines

- Developed by interagency workgroup
- To articulate a consistent recommended framework
- Communicates the elements we think are necessary for success

Rule

- Authorizes DRBC to require plans sooner rather than later
- **Adopted May 18, 2005**
- **Can require PMPs from non-point sources**
- **Resolution expressed a goal of achieving 50 percent reduction in aggregate loads within the next 5 years**

Interagency Workgroup

PA	Jenifer Fields
NJ	Melisse Carasia-Auriti Pilar Patterson
DE	John DeFriece
EPA II	Maureen Krudner
EPA III	Brian Trulear Roberta Riccio
DRBC	John Yagecic Bob Tudor Pam Bush

General Minimization Plan Components

- Facility Description
- Statement of Support and Identification of Team
- Proposed Schedule
- Actions for Known / Probable Sources
- Actions to Find and Control unknown Sources
- Previous Minimization Activities
- **Measuring, Demonstrating, and Reporting Progress**
  - Establishing a Baseline
  - Estimated Load Reduction
- Continuing Assessment

Guiding Principles

Dischargers know best how to reduce loads

- PMP requirement not prescriptive
- Provides a consistent framework for communicating the plan
- Dischargers know their facilities better than regulators
- Wide flexibility for achieving reductions
  - Different facilities will have different approaches
  - What works for one may not work for another
  - Encourage creative solutions

Guiding Principles (continued)

Plans need to articulate specific actions

- Other examples (from outside the basin) we considered were insufficient.
  - *"We'll look for the pollutant. If we find it, we'll get rid of it."*
- Need a real plan of action
  - What, when, how, and what's the impact

Guiding Principles (continued)

Measuring and Demonstrating Progress is the highest priority

- Allows for an iterative Adaptive Management approach
- Pollutant minimization approach is a risk
- Will succeed or fail depending on demonstration of reducing loads to the estuary

Guiding Principles (continued)

Many ways to measure and demonstrate progress

- For some sites, analytical uncertainties may mask effluent concentration reductions – consider other options
  - *Influent* concentration reductions
  - PISCES effluent sampling
  - PCB mass removed from site / system
  - Demonstrate reductions in a surrogate parameter such as solids, OC
  - Effluent volume reductions (if likely to reduce PCB mass)

- Ultimately need to compute an estimated PCB effluent load reduction

The Rule

DRBC Water Quality Regulations Section 4.30.9

"Pollutant Minimization Plans for Toxic Pollutants"

- Adopted May 18, 2005
- Authorizes Commission to require pollutant minimization plans from both point and non-point discharges impacting water bodies where:
  - Commission determines that assimilative capacity for toxic pollutant has been exceeded; or
  - TMDLs for toxic pollutants have been established.

PMP Procedures

- DRBC will notify facilities by letter that they must develop a PMP;
- Plans to be submitted within 90 days of notification by DRBC;
- Plans submitted to DRBC and state;
- Completeness Review by DRBC;
- Peer Review Advisory Committee to evaluate PMPs in light of 50% / 5-year goal and circumstances of each site.

Will PMP Approach Work?

Early Signs of Success

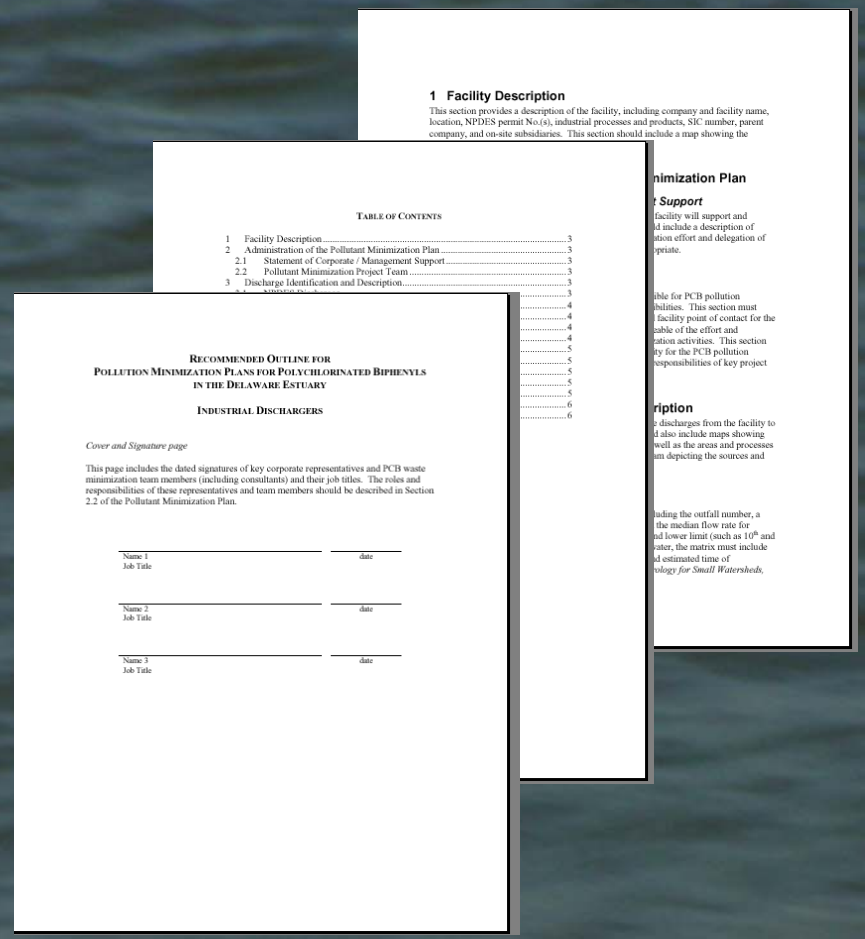
- Rail facility in Wilmington, DE demonstrated ~ 90% reduction in PCBs in surface runoff via erosion control;
- Chemical manufacturer in Wilmington, DE demonstrated initial 22 to 32% load reduction through raw material change with a 90% goal by 2007 through raw material changes, process changes, settling, and sand filtration;
- Refinery in southeast PA eliminated PCB equipment years ago but identified contaminated sediments in a stormwater drainage ditch.

PCB Pollutant Minimization Plans

- Rule and Guidance available on DRBC web site

www.drbc.net

- Contact John Yagecic at 609-883-9500 x271



Delaware River Basin Commission

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