

PCB Implementation in Delaware: Overview

Delaware's approach to PCB TMDL implementation is multi-faceted and involves:

- 1) Incorporation of the DRBC PCB PMP requirements into Delaware NPDES permits (including MS4s). Those requirements can be found in Section 4.30.9 of the DRBC's Water Quality Regulations: <http://www.state.nj.us/drbc/library/documents/WQregs.pdf>
- 2) Providing technical assistance to NPDES permit holders on the design, execution and interpretation of PCB "trackback" studies. This requires a mutual desire to cooperate and make progress on reducing the PCB problem.
- 3) Establishment of a programmatic framework that better coordinates efforts of Delaware's water, watershed, and waste management and remediation programs. We call the framework WATAR, which stands for Watershed Approach to Toxics Assessment and Restoration. More info, including a 5 year work plan, is available at: <http://www.dnrec.delaware.gov/dwhs/SIRB/Pages/WATAR.aspx>
- 4) Conducting state-of-the-science monitoring of ambient water, sediment and biota to identify problem areas and sources. The latest Sampling and Analysis Plan (SAP) is available upon request. This work not only helps to identify problem areas and sources, the data collected is also used to develop State-specific partitioning models which better account for bioavailability and bioaccumulation. And it is used to update fish consumption advisories. All implementation plans need monitoring data to track progress.
- 5) Identification, prioritization and cleanup of known upland sources of PCBs. Follow links to PCB mass loading studies in the link listed in item 3 above.
- 6) Place current conditions into perspective by supporting the analysis of radiodated sediment cores for PCBs. This provides long-term (decade-scale) trend information not available through any other means. This information is vital in determining whether existing programs are working and the trajectory of change (which informs management decisions).
- 7) Implementing in-place remediation of PCB-contaminated sediments. PCB in sediments represents an ongoing source of contamination to the water column and aquatic food chain. In-situ treatment of sediments with activated carbon can significantly reduce dissolved PCBs in sediment pore water, the water column and biota. Delaware has been an early adopter of this technology. Additional information is available under "Mirror Lake" and "Little Mill Creek" in the link in item 3 above.

PCB Implementation in Virginia - Background

Virginia does not develop implementation plans to address sources identified in PCB TMDLs. The descriptions provided below include approaches for managing different source categories.

Point Sources

Municipal WWTP, Individual Industrial or Industrial Storm Water facilities permitted under a General Permit – if assigned a WLA the facility must address PCBs through a Permit Special Condition that requests:

- 1) If PCB screening data are lacking a more formal baseline load must be established to compare with the WLA by screening PCBs using method 1668, or
- 2) If a formal baseline load exists and it is determined the facility exceeds the assigned WLA, the Special Condition language directs that a PMP be developed (see Appendix A for an example). All PMPs are considered for adaptive management and are likely to take more than one permit cycle.

MS4s – that are assigned WLAs for PCBs are to address implementation through their Action Plans. This has not really been developed yet but in essence will be like a mini-TMDL (i.e., perform source investigation and then determine where loads can be reduced to meet the allocated % reduction).

Non-Point Sources

Contaminated sites – most known sites have already been remediated and unless the low level method is used to screen runoff, an actual load from these sites is at best an estimate. Also, since remedial activity has been completed, there is no regulatory leverage to have additional clean-up performed. The TMDL allocation does not serve as an ARAR.

For impaired watersheds where TMDLs will be developed or are under development, and there is known clean-up going on at a site, efforts are made to preemptively address the PCB contamination using the more sensitive method. DEQ's TMDL staff attempt to integrate with the clean-up team, explain why the low level method is needed and why it should be incorporated into the site investigation monitoring (at least a small percentage of samples). The potential impacts of the impending TMDL are also discussed.

Atmospheric - No management actions are taken since the prospective sources are unknown.

Sediment - No management actions have been taken to date although would be considered with extremely elevated and localized PCB contamination. In most situations, PCBs found in the sediments are too diffuse to adequately address.

Appendix A – PMP Permit Special Condition Example (Virginia)

7. PCB Pollutant Minimization Plan (Outfalls)

a. Pollutant Minimization Plan (PMP)

The permittee shall submit a Pollutant Minimization Plan (PMP) to the DEQ- Regional Office for review and approval. The PMP shall be designed to investigate the location and potential reduction of sources of PCBs in the outfall collection system.

The PMP shall detail the practices and procedures which will be followed to investigate the location and potential reduction of sources of PCBs. This PMP shall include, but not necessarily be limited to, the following items, as appropriate:

- 1) Provide a facility contact for the contents of the PMP and any activities associated with the PMP;
- 2) Provide a proposed implementation schedule for minimization activities and prospective milestones;
- 3) Establish a baseline for PCBs in the final effluent, if the current baseline is inadequate;
- 4) Propose actions for known or probable sources;
- 5) Propose actions to find and control unknown sources;
- 6) Summarize any previous minimization activities;
- 7) Present methods for measuring, demonstrating, and reporting progress;
 - i) May include an evaluation of the total PCBs and/or PCB congener distribution in the initial source intake water to determine the net contributions of PCBs introduced to the treatment works.
 - ii) May include raw influent testing using either grab or composite samples as well as sampling upstream in the collection system. Screening methods may be utilized to target specific areas of interest.
 - iii) Alternative PCB test methods are acceptable provided analytical sensitivity is sufficient for detection and quantification.
 - iv) May perform further monitoring of the final effluent to determine effectiveness of the reduction efforts.
- 8) Estimate the PCB load reduction provided by treatment; and
- 9) Provide information on continuing assessment of progress, which may include establishment of criteria to evaluate whether the location and potential reduction of PCB sources has been addressed, and whether a more routine follow-up awareness, education, and inspection approach is appropriate.

PMP Due: No later than

b. Pollutant Minimization Plan (PMP) Annual Report

An Annual Report shall be submitted to the DEQ- Regional Office for review and approval by for the previous year's PMP activities.

The Annual Report shall:

- 1) Summarize PMP Achievement for investigating the location and potential reduction of sources of PCBs in the collection system during the past calendar year;
- 2) Address any revisions needed for the PMP for the coming year;
- 3) Address material and process modifications, if applicable;
- 4) Summarize measures taken to address known, probable and potential sources; and
- 5) Discuss incremental and cumulative changes from the baseline loading.

PCB Implementation Plans in Maryland: Overview

Implementation plans are developed at the County level:

Montgomery County (Anacostia)

Source Track-Down Methods:

- Zoning Information - Identifying areas zoned for industrial activity for investigation
- Historical Records - Identifying businesses that may have used PCBs in the past
- Specific Industries - Targeting specific industries that have used PCBs
- Caulk - Identified buildings with potentially contaminated caulk and their remediation status
- Stormwater BMPs - Establishing protocols for testing sediments in stormwater BMPs
- LEPC Data - Local Emergency Planning Requirements keep records on stored hazardous materials

Planned Actions:

- Caulk – In the past year, approximately 45 Kg of PCBs were removed from a single school with contaminated caulk and many more structures have been identified that could potentially contain contaminated caulk. Efforts will focus on requiring testing and remediation as part of the permit process as well as outreach to deal with unpermitted repairs or renovation work.
- Industrial Area – The only industrially zoned section in the County's drainage is upstream from an area identified as having a relatively high level of PCBs. This area will be surveyed for properties that could be sources of PCBs.
- Stormwater BMPs – Toxics are known to accumulate in stormwater BMPs. A protocol is being developed to test material removed as part of the normal maintenance process for PCB contamination.

Baltimore County (Baltimore Harbor, Back River, Jones Falls)

Programmatic Actions:

- Work with MDE to develop a load reduction calculation that will link PCBs with sediment loadings
- Hold Household Hazardous Waste Collection Events
- Implement Continuing Public Outreach Plan
- Work with MDE to enhance fish tissue monitoring and develop enhanced bioaccumulation monitoring program to help identify subwatersheds with potential contamination

- Develop and implement remediation plans for subwatershed identified as contributing to PCB pollution.

Management Actions:

- Street Sweeping Programs
- Implement sediment reducing BMPs identified in Baltimore Harbor Nutrient TMDL Implementation Plan (i.e. stream restoration, stormwater retrofits, urban tree canopy, stream buffer restoration)

Tracking Implementation Progress:

- Document entitled *Baltimore County Method for Pollutant Load Calculations, Pollutant Load Reduction Calculations, and Impervious Area Treated*. This document will detail the data sources, data analysis (including pollutant load calculations, and pollutant load reductions calculations), validation of the practices, and reporting of progress made.

Baltimore City

- Baltimore City plans to use nutrient and sediment BMPs to meet PCB goals.
- They have a single implementation plan to address all TMDLs, including nutrient and sediment, as well as PCBs.
- Neighborhoods have already been targeted.
- Practices Include:
 - Structural BMPs (retention basins, wetlands, infiltration swales, rain gardens);
 - “Alternative” BMPs (stream restoration, impervious surface removal, tree plantings);
 - Management BMPs (mechanical street sweeping, storm drain cleaning, IDDE, E&S);
 - Public Outreach and Education

Prince George’s County

Implementation sediment-reducing BMPs to address PCBs using the following approach:

- Use Watershed Treatment Modeling (WTM) to evaluate the ability of existing BMPs and programmatic initiatives to meet the local TMDL WLAs and then identify and quantify future BMPs and programmatic initiatives necessary to meet the local TMDL WLAs.
- Develop cost estimates associated with the implementation of identified BMP practices and initiatives.
- Develop timelines associated with the deployment of identified BMP practices and initiatives to determine if the timelines required by the TMDL program can be achieved.
- Identify opportunities for BMP practices and programmatic initiatives and develop cost estimates.
- Identify the financial and technical resources required and develop achievable timelines for the deployment of BMP practices and programmatic initiatives that can best meet TMDL program requirements.

Perform Outreach to Assist with Achieving Implementation objectives:

- Perform Target Audience Analysis
- Inventory Existing County Outreach Programs
- Enhance and Grow Partnerships
- Develop and implement Targeted outreach components as part of an outreach toolbox:
 - Residential and community stormwater management and BMP implementation;
 - Elimination of PCB-containing transformers and equipment at industrial and commercial facilities;
 - Proper disposal of PCB-containing fluorescent light ballasts

Tracking Progress:

- Progress will be tracked in MS4 annual reports
- Biological monitoring and assessment using benthic IBI
- Sites for water quality monitoring will be identified on the basis of the County's BPJ
- Samples will be analyzed using EPA's Method 1668.
- Monitoring will not be conducted to evaluate the effectiveness of specific BMPs.