Maryland
Department of the Environment

MD PCB TMDL Development & Implementation

CBP Toxics Contaminant Workgroup

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PCB TMDL Development

- MD has developed 31 PCB TMDLs to date
- Conowingo Pool/Lower Susquehanna River PCB TMDL currently under development (Fall 2022)
- PCB TMDL Monitoring
  - Fish Tissue, Water Column, & Sediment
  - Modified version of EPA Method 8082
    - Low detection level congener based methods (140+ congeners)
  - Data supports TMDL endpoint development, watershed load estimation, and water quality model calibration
- PCB TMDL Modeling
  - Tidal Prism Model
  - 1-D Numeric Tidally Averaged Water Quality Model
  - 3-D Hydrodynamic Model (EFDC Framework)

PCB TMDL Implementation

- MD PCB TMDLs assign NPDES Regulated Stormwater Waste Load Allocations (WLAs) to Phase I MS4 jurisdictions
- WLA reductions require Phase I MS4 jurisdictions to develop PCB TMDL implementation plans within one year of TMDL approval
- New Phase I MS4 permits will also require development and implementation of source trackdown monitoring plans

PCB Source Trackdown Guidance

- MDE is currently developing source trackdown guidance to assist Phase I MS4s in the development of their plans (April 2022)
- Objective of source trackdown is to assist MDE in identify discrete land sources of PCB contamination that can be controlled/remediated through MDE regulatory mechanisms (e.g., CERCLA, NPDES Industrial Permitting) or innovative stormwater management.

PCB Source Trackdown Guidance

- Desktop Analysis to identify potential PCB sources within a TMDL watershed
  - Contaminated Sites
  - Historical/Active Industrial Facilities
  - PCB Era Development (1929-1979)
- Subwatershed Prioritization
  - TMDL watershed delineated at a smaller subwatershed scale
  - Risk scoring system to prioritize subwatersheds with most potential sources of PCBs

PCB Source Trackdown Guidance

- Source trackdown monitoring comprised of three different phases
- PCB Subwatershed Screening
  - Passive sampling at subwatershed outlets
  - Reference stations (background PCB levels)
  - Identify subwatersheds that will require source trackdown investigations
- In-stream subwatershed PCB Characterization
  - Comprehensive bracketing of the subwatershed stream network
  - Passive and sediment sampling at each station
  - Identify specific subwatershed areas with potential PCB sources (direct drainage or MS4 conveyance)

PCB Source Trackdown Guidance

- Stormwater Network PCB Characterization
  - Storm sewer trackback monitoring to identify potential sources draining to the stormwater network
  - Sampling at outfalls, inlets, BMPs, and in-pipe
  - Automated sampling and passive sediment traps
- MDE recommends EPA Method 1668 for all PCB analyses

Current PCB Source Trackdown Efforts

- Baltimore Harbor (Anne Arundel)
- Back River (Baltimore City/County)
- Plan under development for Patuxent River (Anne Arundel/Howard/Montgomery County)
- Lower Beaverdam Creek (Anacostia River)
  - Collaboration between MDE's Land and Water programs and PG County
  - DOEE's Anacostia River Sediment Project identified Lower Beaverdam Creek as a significant source of PCBs
  - Source trackdown efforts have identified two areas of concern
    - Scrap Recycling Facility
      - TSCA Remediation and Site-wide Characterization
    - Pennsy Drive Area
      - Further investigation underway through stormwater outfall sampling and storm drain mapping
    - MDE provides quarterly updates at Anacostia River Leadership Council
    - https://mde.maryland.gov/programs/land/MarylandBrownfieldVCP/Pages/remediationsites.aspx

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Questions?