



Implementation of PCB Pollutant Minimization Plans for Small Municipal Wastewater Utilities

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Watershed Management Session
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Outline

- PCB PMP Implementation
 - Objectives
 - Overall Approach
- Identifying Potential Sources
- Influent Trackback Sampling
- Assessing PCB Data Results
- Measures to address PCB sources
- Discussion

Objective of PCB PMP Implementation

Objective:

to reduce the discharge of PCB loadings to the Delaware River through identification and elimination of sources

- Demonstrate good faith effort
 - Identify and reduce any "low hanging fruit"
 - Efficiently identify and eliminate potential sources
- Contain costs
 - Strategic monitoring (avoid 1668A when possible)
 - Avoid araclor methods unless you have ID'd specific araclors
 - Method 680/8270 modified to capture PCB congeners instead of SVOCs
 - Skip the blank
 - Document benefits of existing maintenance and upgrades

Overall Approach

- Identify Potential Sources
- Search Collection System
- Isolate PCB Sources

Identifying Potential Sources

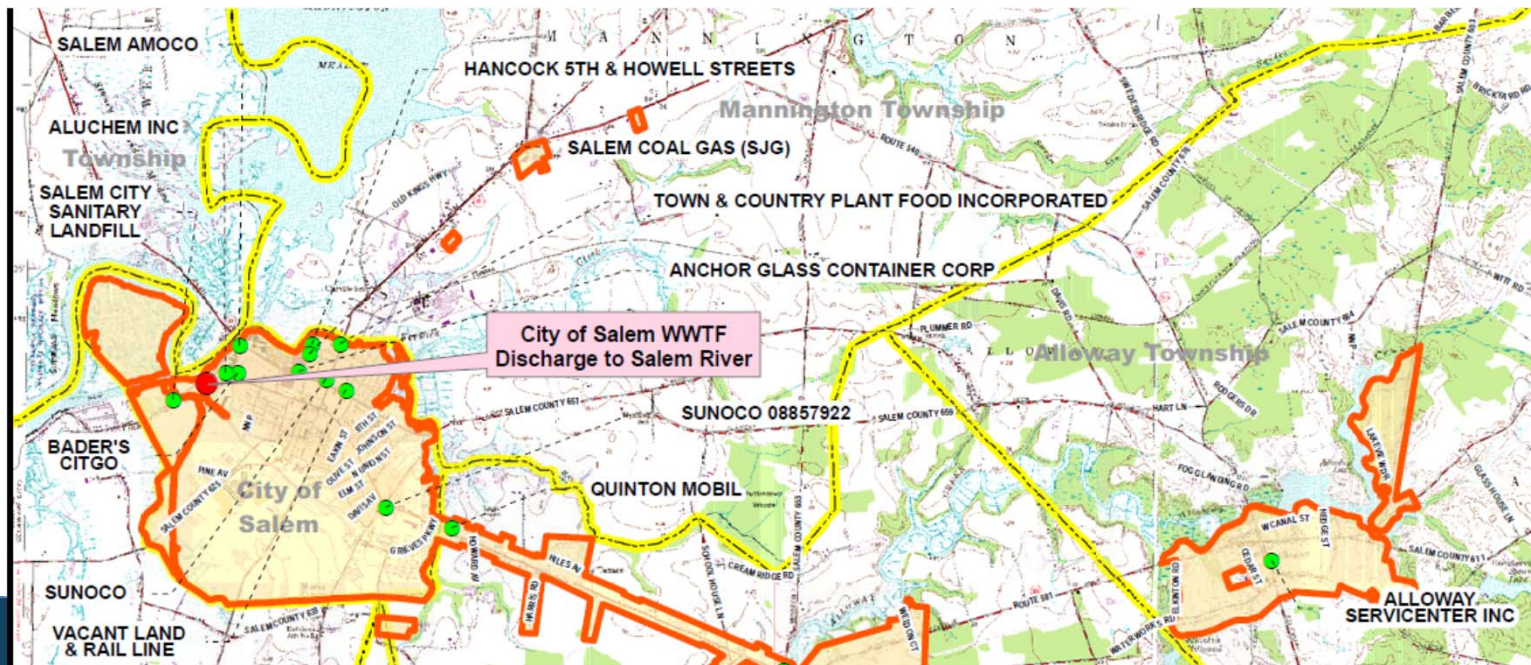
- General PCB Source categories
- GIS Assessment
 - Land use composition
 - Known Contaminated Sites
- Inventory of On-Site Equipment at WWTP
 - Transformers, chemical storage, oils and lubricants
- Operator Interview and Windshield Survey of Sewer Service Area

General PCB Source categories

General PCB Source Categories	
Source Category	Pathway
PCB Source in Collection System	Direct input into collection system
PCB Source in Service Area but not in Collection System	Extraneous flow into collection system
Air Deposition	Air to water transport, air to soil transport

GIS Assessment

- Significant Industrial Users
- Land use composition (industrial areas and transportation infrastructure)
- Known Contaminated Sites



What to look for in windshield survey

- Industrial areas
- Industrial Dump Sites
- Landfills
- Above ground storage facilities
- Auto repair shops
- Machine shops
- DPW sites
- Transformer Stations
- Railroad Stations and Corridors
- Military Installations
- Electronics Manufacturing Plants
- Automobile Service Stations



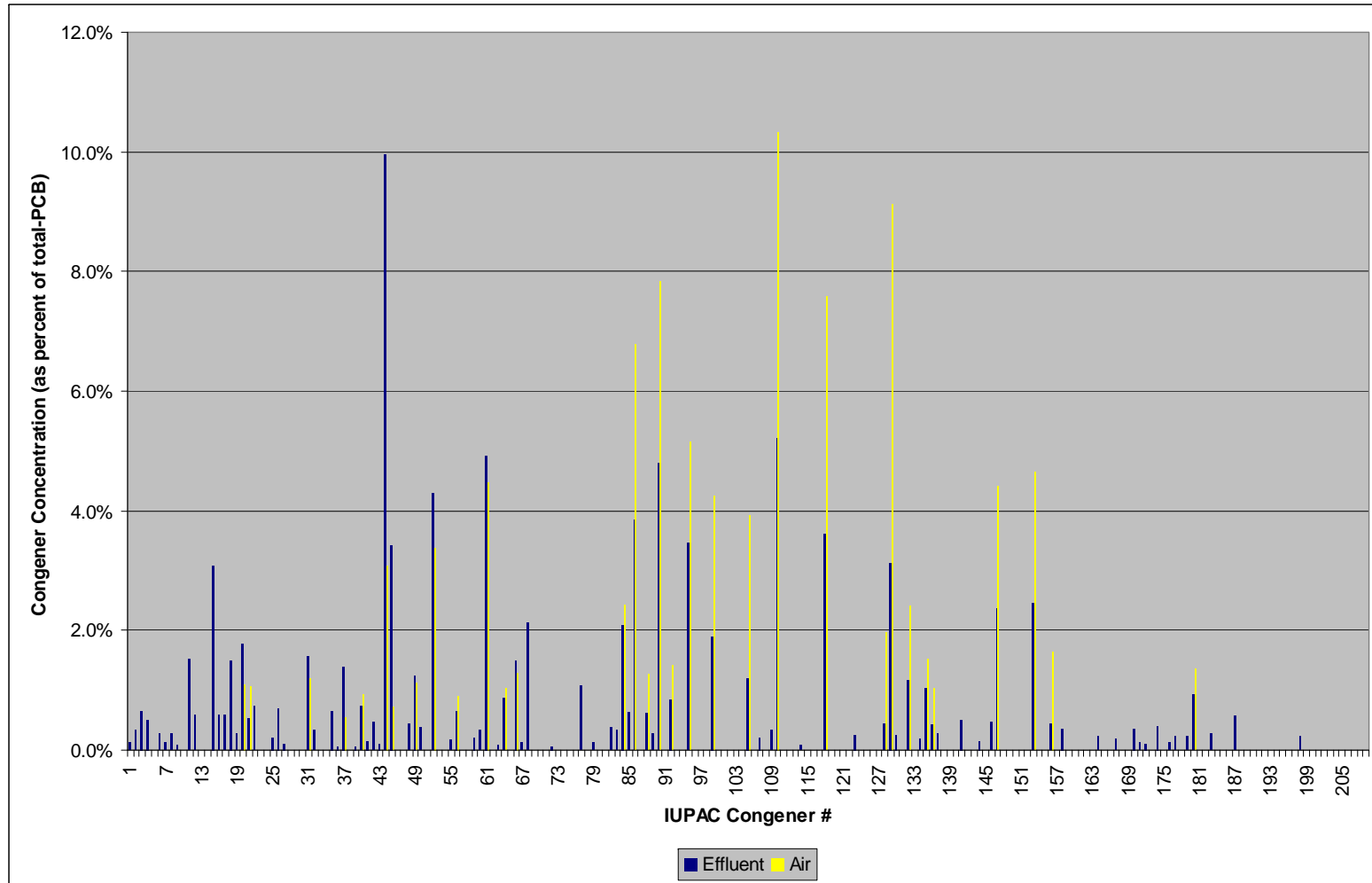
Influent Trackback Sampling

- **First Cut Sampling**
 - Air Sample (24-hour blank)
 - Influent Sample
 - Based on results:
 - Decide whether to proceed with Iterative Search phase
 - Select appropriate sampling method for subsequent influent sampling
- **Iterative Searches**
 - performed coincident with effluent sampling
 - one or two rounds of geographic isolation within collection system
 - one or two rounds of potential source isolation within collection system
- **Confirmation**
 - repeat source isolation sampling

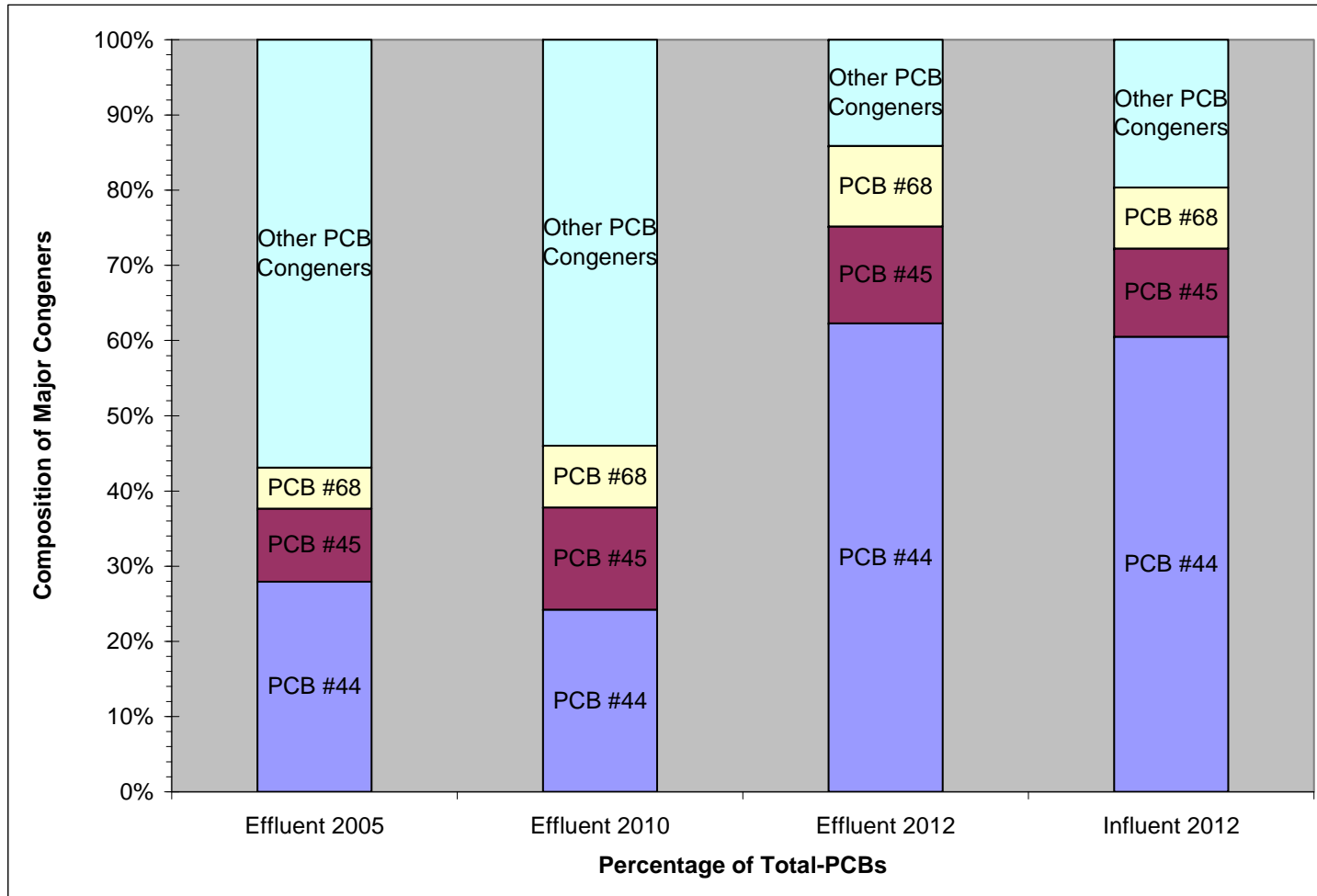
Assessing PCB Data Results

- Applying DRBC QC rules regarding blanks
 - Rinsate blank contamination acceptance rules:
 - An individual congener cannot exceed 40 pg/L
 - If associated sample concentration exceeds 3x the amount in the blank, then no action is required
 - If congener is not found in the associated field sample, then no action is required
 - =IF(OR(SAMPLE="",SAMPLE=0),E5,IF(BLANK<=40,SAMPLE,IF(SAMPLE>BLANK*3, SAMPLE,"ERROR")))
 - The total PCB concentration cannot exceed 600 pg/L
- Total- and penta-PCB comparisons
- Fingerprint Analysis

Air and Effluent Congener Composition



Analysis of Congener Composition



Evaluation of Treatment Efficiency and Influent Source Trackdown

SAMPLE	Total-PCBs	Penta-PCBs
Effluent (existing treatment)	2,831	302
Effluent (pilot filtration)	1,420	243
Effluent (pilot coagulation + filtration)	1,529	304
Influent - Main	186,045	87,498
Influent - Pump #1	15,822,452	8,626,700
Influent - Pump #12	11,956	3,499
Influent - Pump #5	7,328	1,403

Measures to address PCB sources

- Maintenance and upgrading of sewer lines (cleaning, rehabilitation, and lining)
- Identify source for regulatory action
 - e.g. generating station
- Contact electric company and request location of all transformers not certified as PCB-free, as well as date of last inspection
- Document impact of treatment upgrades

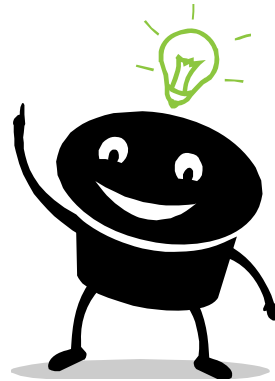


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Questions? Ideas?



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