CBP Water Quality Goal Implementation Team
Toxic Contaminants and Wastewater Treatment WG
Meeting Agenda

Date: *Wednesday December 11th, 2019*
Time: 1:00 - 3:00 PM
Location: Conference Call, Room 305 at CBPO
Call-in: 1-929-205-6099; **Code:** 574- 130- 465
Zoom Link: https://zoom.us/j/574130465
Calendar Page: Link.

Agenda Item and Desired Outcome	Time	Background Docs, Notes, and Action Items
1. Introductions and Announcements • Welcome to the WWTWG members • Overview of WWTWG – Ed Dunne, DOEE • Approval of the November meeting minutes • Management Board updates on plastics: • "The Management Board recently approved the formation of a Plastics Pollution Action Team to determine the best way to carry out recommendations from the STAC microplastics workshop. STAR will be discussing the charge and membership of this team at its January meeting. If you have any recommendations for membership, please let us know or send them to Emily Trentacoste."	1:00	• TCW members should email Greg Allen (allen.greg@epa.gov) and Hilary Swartwood (swartwood.hilary@epa.gov) if interested in participating in the PCB exploratory team.
2. Assessing Benefits of Wastewater Treatment Plant Nutrient Control Upgrades on Toxic Contaminants – Marcus Bowersox, Tetra Tech *Discussion Questions:* • How can this report be used in advancing PCB TMDLs? • What additional information and monitoring data do we need moving forwards? • What are the next steps to undertake in our strategy and action plan with regard to PCBs and Wastewater?	1:05	• Presentation and report. • TCW strategy and workplan.
3. Shenandoah Accumulated Wastewater Mapper: A Screening tool to Understand Human and Wildlife Exposure to Toxicants and Pathogens Associated with the Incidental Reuse of Treated Wastewater - Dr. Larry Barber and Jennifer Rapp, USGS *Discussion Questions:* • Would the methodology be useful in getting more information on PCBs? • Would this be useful to help inform PCB TMDLs?	1:45	• Presentation and report.

• How does wastewater effluent compare to other sources of EDCs in the watershed, and its effect on fish health? • How might these results be transferable to other areas? • How would this compare to urban environments?		
4. Draft final User Guide for the Fish Consumption individual panel usage – Caitlyn Johnstone, Communications and Outreach Coordinator *Discussion Questions:* • From the jurisdictions and fish consumption leads, who should receive this for review and comment?	2:25	• Fish consumption infographic: ○ English version ○ Spanish version • Request for feedback
5. Wrap Up and Adjourn	2:55	***Next meeting:* January 8th, 2020 from 1- 3 PM**

Summary of Actions and Decisions:

Action: Jurisdictions will provide feedback on the draft Final User Guide for Fish Consumption and, pending final approval, will distribute the Guide on Fish Consumption to their relevant agencies, local governments, etc. for use.

Action: TCW members will send recommendations for membership to the STAC Plastic Pollution Action Team (PPAT) to Emily Trentacoste (trentacoste.emily@epa.gov).

Action: The TCW will invite Trevor Needham to present his finds on Back River effluent and PCBs at a future TCW meeting.

Meeting Minutes:

1. **Additional Announcements**

   Ian Hartwell retired from NOAA and Fred Pinkney said a few words of appreciation on the WG's behalf for the work he has contributed to NOAA and the Bay Program in regard to toxic contaminants. Thank you , Ian!

2. **Assessing Benefits of Wastewater Treatment Plant Nutrient Control Upgrades on Toxic Contaminants**

   The purpose of this study was to: "1) investigate co-benefits of nutrient removal upgrades at WWTP to the reduction of other toxic contaminants, particularly PCBs, in the CB watershed, 2) Assess another large estuary watershed in the US that may have WWTPs that have implemented nutrient removal upgrades and whether there were any other toxic contaminant reduction benefits, and 3) Evaluate peer-reviewed literature for direct studies of reductions in toxic contaminants due to implementation of nutrient removal upgrades or specific type of upgrade at WWTP." The key findings of the report were that PCB reductions should be differentiated from other toxics;

hydrophobicity is important and potentially a dominant PCB characteristic as it pertains to effluent reductions during wastewater treatment; and lesser and lighter chlorinated PCB congeners are more biologically degradable than heavier and more chlorinated ones. *The main conclusion*: highly likely that nutrient removal upgrades aid in reducing toxic contaminants, including PCBs, in WWTP effluents. However, there was little quantitative evidence to support this conclusion (this means overall confidence was low). The report recommends that CBP and its partners increase efforts to better quantify reductions of toxic compounds due to nutrient removal upgrades by: 1) continuing to stay up-to-date of the recent literature (currently literature relating to this topic is limited and only allows for broad conclusions to be drawn, 2) support proactive characterization of remaining WWTPs within the Chesapeake Bay Watershed pre- and post-upgrade, and 3) support additional proactive efforts to document the science of PCB reductions at conventional and BNR WWTPs.

Discussion:

The jurisdictions inquired about sludge and what happens after its removed. It would be good to have data on what the sludge concentrations are Bay wide and where that sludge goes because jurisdictions could use these results to determine how sludge is being applied / could be applied.

In terms of the TCW workplan, this report confirmed the TCW's rational that whenever work can be done to reduce PCBs upstream of the WWTP, it should be implemented. Additionally, this study showed that ENR upgrades can biologically reduce PCBs and partition them into sediment and sludge, which means they are not becoming available in the environment. So, now there is a new research need: how much is going to sludge and where is it being applied? Is it in a controlled setting or not?

Needham informed the group that MD published results on Back River effluent in 2019. In this study they found that the freely dissolved concentration increases but the overall load is significantly less. Since the organic carbon / suspended solid is removed, there is a higher fraction of lower chlorinated congeners, which are more biodegradable to aerobes and less bio accumulative in the environment (these are generally considered less toxic than heavier, more chlorinated ones). This could potentially be another presentation in the future.

3. **Shenandoah Accumulated Wastewater Mapper: A Screening tool to Understand Human and Wildlife Exposure to Toxicants and Pathogens Associated with the Incidental Reuse of Treated Wastewater**

The mapper tool quantifies point source contributions of wastewater for water quality studies and fish habitat analyses. It also provides a flexible framework to identify reaches with strong likelihood of EDCs. The goal is to expand the wastewater mapper to all rivers in the Potomac River Watershed and eventually to the entire US (mapper tool: https://va.water.usgs.gov/webmap/shenmap). The research found that there was widespread occurrence of complex chemical mixtures related to landscape activities and that fathead minnows exposures indicated minor endocrine disruption effects consistent with low levels of EDCs in the water. Additionally, the results of the Shenandoah Accumulated Wastewater Mapper Modeling were consistent with field measurements. This suggests low to moderate risk for fish endocrine disruption. Furthermore, accumulated WWRatios could guide water- supply permit decisions and the PEC model could be used to identify hot spots for wastewater impacts and utilized by agencies to identify biological / chemical sampling priority areas.

4. **Draft Final User Guide for the Fish Consumption individual panel usage**
    a. **Ask:** Can jurisdictions help provide this information to agencies, local governments, etc. for them to use?
    b. **Action:** Jurisdictions will provide feedback on the User Guide for Fish Consumption and will distribute the Final Used Guide on Fish Consumption to their relevant agencies, local governments, etc. for them to use.

Call Participants:

Greg Allen, EPA
Scott Phillips, USGS
Doug Austin, EPA
Emily Majcher, USGS
Hilary Swartwood, CRC
Jennifer Rapp, USGS
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