SPOKANE RIVER
REGIONAL TOXICS TASK FORCE

COLLABORATION INNOVATION PROGRESS

Welcome

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Suggestions, Take-Aways, Ah ha's

COLLABORATION INNOVATION PROGRESS

Sampling/Data Collection/Holistic Monitoring Program

- When designing any future data collection activities that could be used for modeling purposes, coordinate spatial measurement of fish, sediment, biofilm, water column.
- Don't randomly collect samples. Design monitoring plan based on what we expect is going to happen. Consider forecasts for:
  - Municipal treatment plants – tertiary treatment
  - Industrial treatment plants
  - Mitigation of Kaiser groundwater plume
  - Consider sampling with composites, or sediment, biofilm or fish – if it gets much cleaner, we won't be able to quantitatively measure the water column concentrations
- We need an NSF grant: 5 years, Big $$, interdisciplinary team with defined project area and questions to be answered.
- Recent Storms are a great test of CSO Tanks - collect data to check effects

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Sampling/Data Collection/Holistic Monitoring Program (cont)

- We should float the river with data/maps this summer and help Brandee and Siana scrape rocks. SRSP (funding and Lisa's time to organize, Lands Council to help host/organize). (Knowledge).
- Dr Rodenburg's "New info" talk reinforces our need for a big picture, long term, experimental design. We've been playing "whack-a-mole" with one-off monitoring data. Let's pool our resources and ask the right questions.
- Should we measure winter flows, other seasonal water column measurements (in addition to low flows)
- Can we use Biofilm to make strong conclusions: consider additional biofilm sampling to reduce uncertainty, further explore unknown, periodic source near Mirabeau.
- Trend Analysis: Need more samples/site data to reduce uncertainty. Is this level of effort warranted?
- Trends: Would it be better to use the median and interquartile range instead of mean and standard deviation
- Some PCB Studies have used low density polyethylene (LDPE) as a passive sampling medium. Some have achieved quantification limits as low as 1.5 pg/l in water, TF may want to consider this technique.

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Fish

- Discuss/Distinguish: Bioaccumulation vs. Biodegradation (eg., when does fish consumption of PCBs contribute to/accelerate the degradation or elimination of PCBs)?
- Management – Change operation of Dam to transport solids to areas of lower fish production and consumption.

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Policy Considerations

- Consider looking at PCB Congeners differently – how they affect human health and environment (WQS, Fish Tissue, etc) and inform future work of the SRRTTF.
  - Eg., PCB-11 is not bioaccumulative in fish tissue, so should the TF de-emphasize control of PCB -11 (inadvertent) sources (least bang for the buck)?
  - Should EPA consider work of SRRTTF to inform how they use BCF's to regulate PCBs?
  - Europe does not regulate mono & di-chlorinated PCBs for this very reason.
- Primary (top ten) PCB congeners in fish are different that in water column. What is most important to target in our control actions: PCBs that have the highest concentration in the water column (WQS) or those in fish (justification for listing)?

Policy Considerations (cont)

- Sediment cleanup standards are based on protecting aquatic/benthic communities, not necessarily on human health (BN).
- Management - Seasonal uptake by fish – Bioaccumulation in Winter, Low Temperature, Give Credit to zero discharge in winter.
- Management – Include/Consider carbon footprint and increase in water temp due to required treatment systems to comply with 7 pg/l versus 170 pg/l standard. Consider overall impact to resources and environment.

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Data Analyses, Data Consistency, Graphics (current data/studies)

- PIE CHART – "So, our current version, updated, of Ecology's pie chart is?????
- Need a worksheet that identifies sample location, River mile, standardize the name of the sample location. Use Data management workgroup to help with this task. Include names used at the time of the study for the site, develop information and sync with online GIS database that the County is currently developing. (Note – County and Ecology to coordinate on GIS database and Google Earth database).
- Add layer showing DOH advisories to the Google Earth Map
- Other dischargers besides Kaiser and Spokane County have been monitoring routinely for PCBs and may have enough samples to fingerprint.
- Hydroxylated PCBs (from metabolism of congeners in fish). Dr. R. says these can be more toxic. We know PCB-11 likely metabolizes. Risk Assessment currently being conducted by EPA looking at inadvertents (eg., PCB-11) should look at hydroxylated form.

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Source Control

- What is the mass load of PCBs from TCP sites versus other sources we have identified. EG., what is the potential for TCP sites to be a significant factor in PCB loading to the river.
- TCP sites: closed or open. Does the TF have any control if we focus on these sites?
- "Identification and implementation of appropriate actions needed to make measurable progress" should include more effort in emerging treatment technology evaluation by SRRTTF

Overall Objective

Answer the question: "*Where should the Task Force focus control efforts to most effectively reduce PCBs in the Spokane River Watershed*"?

Comprised of two parts:

1. What are the sources of PCB to the river?
2. How does each source contribute to concentrations in the water and fish?

Expected Outcomes

- Recommendations to the TTWG regarding monitoring activities to be supported in 2019 (and potentially beyond) that are specifically targeted to allow the Task Force to best manage PCBs in the Spokane River watershed.

- Recommendations for specific sources to be considered for additional control actions.

- A first step towards addressing key longer-term questions such as “What level of effort should be invested in monitoring for future years?” and “At what point do we expect to see diminishing returns?”

- Recommendations for assessing trends/progress.