



Which data gaps/questions are most important to address?

1. Additional biofilm/sediment sampling as a first step in identifying problematic areas and the spatial extent of those areas. Consider SRRTTF augmentation of Washington State Department of Ecology's Environmental Assessment Program (EAP) sampling this August to further verify unknown sources.
2. Generally, focus on drilling deeper into known contaminated areas or areas suspected to be a source of PCB based on recent sample results or historic land use using biofilm/sediment sampling and parallel water column sampling rather than approaching the River from a big picture synoptic survey/mass balance approach as the SRRTTF has in the past.



Which data gaps/questions are most important to address?

3. High flows – Are we mobilizing PCBs in the water column at high water levels? Conduct water column sampling at high water level(s): Consider a two-phased study process:
 - Phase 1 - Reach specific study (consider reach located somewhere between Plantes Ferry and Spokane Gage -possible sites to target include Gonzaga site, SR3, Mission, or GE) – Further target sites from August Biofilm monitoring results
 - Phase 2 - If Phase 1 indicates ability to detect PCBs at high flow (e.g., dilution does not render concentrations below detection), Consider a full synoptic high flow study leading to a better understanding of concentrations at high flow (use to establish high flow pie chart similar to the low flow sources chart)
4. Research/Literature objective – Search historical information to identify contaminated sites (potential hot spots) focusing on prevalent and problematic Aroclors used in past production processes (1254 and 1260). Understand industrial site dry wells. Use this information to help guide location of further sampling efforts



New actions or adjustments to current actions that can further reduce the PCB load entering the Spokane River system?

1. Education and Outreach:

- Tell the story about the progress being made. Better measure PCBs removed as a result of different E&O programs. Conduct annual meeting. Provide template to regulated agencies that provides consistent information regarding mass of PCBs removed each year and summarize in a form that can be shared with the public as part of annual comprehensive plan progress reporting.
- Align TF activities with and support individual member MS4 requirements and use in outreach and to measure progress
- Conduct outreach that helps to reduce inadvertent PCBs
- Bolster and quantify household waste collection
- Share technology (e.g., most effective stormwater treatment technologies)
- Focus on hazard products reduction



New actions or adjustments to current actions that can further reduce the PCB load entering the Spokane River system?

2. Conduct additional research and development on emerging technologies – how to dispose of PCBs once they are removed.
3. Focus on identifying and removing unknown sources



Other studies or actions that could allow us to better measure reductions in PCBs in the Spokane River Watershed over time (i.e., assess trends in PCB concentrations and TF progress)

1. Establish a long-term monitoring program/network to set baseline and track concentrations in fish and water (sediment and biofilm) with the intent to establish consistency and coordinated sampling between media. Conduct fish tissue sampling for rainbow trout to determine baseline and trends. The TF, WDFW and Ecology can combine their efforts. NSF grant to get scientists involved at front end of project scoping. As part of this, consider cost-effective sampling methodologies such as sediment traps and SPMDs to collect longer period PCB data to identify change over time. [Thoughtful, sampling program that lays out long term water quality and fish monitoring (for purposes of establishing baseline and tracking concentrations in fish – to supplement Ecology 10-year monitoring intervals.)] Developing a long-term monitoring plan needs to be really thought through. What will it look like and how will it complement the Ecology-conducted measurable progress review?



Other studies or actions that could allow us to better measure reductions in PCBs in the Spokane River Watershed over time (i.e., assess trends in PCB concentrations and TF progress)??

2. Metrics:

- Identify the number of identified contaminated sites the TF identifies from their monitoring that are subsequently included in a clean-up program.
- Calculate the amount of PCBs removed via treatment technology (e.g., point source sediment removal from stormwater catch basins and street sweeping).
- Track the number of outreach events the TF and individual members conduct.

Summary of Knowns and Unknowns

Potential Next Steps

What We Know

- Water column levels of PCBs during summer low flow
- Primary sources of PCBs to the water column during summer low flow
- Sediment and biofilm at certain locations are elevated above background levels
- Background levels of sediment PCBs are consistent with water column concentration

What We Don't Know

- Biofilm and Sediment
 - Spatial extent of hot spots
 - Causes of hot spots
- Groundwater loads
 - Magnitude of loads from Greene St. to Ninemile
 - Significance of loads up-gradient of Kaiser
 - Whether loads differ during high flow
- Future concentrations
- Linkage between PCB loads and resulting fish tissue
- Cause of apparent loss of PCBs near Upriver Dam
- Exact magnitude of stormwater/CSO loads
- Significance of atmospheric deposition

Likely Next Steps

- Provide input on activities already likely to occur
 - Biofilm/sediment sampling
 - Monitoring to establish if progress is being made
 - May help assess significance of unknown loads during higher flows

Unlikely Next Steps

- Refine estimate of magnitude of stormwater/CSO loads
 - City of Spokane is already addressing these loads
- Determine significance of atmospheric deposition

Potential Next Steps

- Assess biofilm/sediment hotspots
 - Provide additional resources to EAP
- Improved assessment of dry weather groundwater loads
 - Magnitude of loads from Greene St. to Ninemile
 - Significance of loads up-gradient of Kaiser
- Targeted assessment of high flow loading
- Investigate cause of apparent loss of PCBs near Upriver Dam
- Develop linkage between PCB loads and resulting fish tissue
- Others?



Follow Up Items/Parking Lot “To Do” Items

- ❖ Dave Dilks will put together a low flow pie chart of sources (reflecting the information in the bar chart he presented at the workshop) by the next TF meeting. (DONE)
- ❖ Develop a worksheet and sample location naming protocol that standardizes the name of each sample location and identifies river mile. Data management workgroup and Ecology EAP can help with this task. Include names used at the time of the study for the site 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 Ecology generated Google Earth Map.
- ❖ Other dischargers besides Kaiser and Spokane County have been monitoring routinely for PCBs and may have enough samples to also include in Dr. Rodenburg’s Phase 2 PMF (fingerprint) analysis. (Provide Lisa Rodenburg and Mike Hermanson this information right away, as scoping for this work is underway.)
- ❖ Brian Nickel to check on the PCB 11 risk assessment and note the importance of looking at the hydroxylated forms.