Spokane River Regional Toxics Task Force
Workshop Agenda

Tues-Thurs, Feb. 9-11, 2016

Day 1: 8:30 am – 5:00 pm; | Day 2: 8:30 am – 5:00 pm| Day 3: 9:00 am -12 pm

Spokane Convention Center | Room 401ABC

334 W Spokane Falls Blvd |Spokane, WA 99201

Purpose: *To provide a forum for the open exchange of information on the results of the 2014 and 2015 PCB sampling events, and develop a common understanding of NEXT STEPS needed to (a) identify appropriate best management practices for near- and long-term source reduction efforts, (b) manage, access and use PCB data, (c) fill in data gaps, and (d) develop the SRRTTF Comprehensive Plan for achieving water quality standards.*

February 9 (Day One)

8:30	**Introductions & Agenda Review**	*Chris Page (Ruckelshaus Center)*
8:40	**Briefing Session: SRRTTF – The Big Picture: Why we are Here?**	*Allyson Beall-King (WA State Univ.)*
9:00	**Session #1: SRRTTF Understanding of the Spokane River** • LimnoTech presents results and analysis of results from the 2014 and 2015 synoptic sampling • What we've learned from data collected for the SRRTTF to date.	*Dave Dilks (LimnoTech), Shawn Hinz/Jeff Schut (Gravity Consulting)*
10:30	**Break**	
10:45	**Session #1 (continued)** • Data Usability/Suitability • Other sampling/data of import (Ecology, other)	*Dave Dilks (LimnoTech)*
12:15	**Lunch Break – Lunch Provided (if pre-registered)** • TSCA Discussion	*Michelle Mullin (EPA), Peter Gimlin (EPA), Ken Zarker (Ecology), Doug Krapas (Inland Empire Paper)*
1:30	**Session #2: Fish** • General overview of fish tissue and water quality standards, fish tissue and listings, "how did we get here?" Explain bioconcentration Factors (BCFs) vs. Bioaccumulation Factors (BAFs) as they relate to fish exposure in the Spokane River (Dave Dilks) • Policy Presentation: How Ecology uses fish tissue data for 303(d) Water Quality Assessment and how that relates to Water Quality Standards (Cheryl Niemi) • Policy Presentation: How the Department of Health uses fish tissue data for fish consumption advisories (Dave McBride)	*Brandee Era-Miller (Ecology), BiJay Adams (Liberty Lake Sewer & Water District), Dave Dilks, Cheryl Niemi (Dept Ecology), Dave McBride (WA Dept Health)*
3:20	**Break**	
3:35	**Work Session #2 (continued)** • Summary of fish tissue data, general observations (Brandee Era-Miller) • Case studies and modelling approaches relevant to the Spokane River (Will Hobbs) • 30 minutes for general questions of all speakers in fish session	*Brandee Era-Miller, Will Hobbs (Dept Ecology)*
5:00	**Adjourn**	*Chris Page*

February 10 (Day Two)

8:30	**Session #3: Comprehensive Plan**
	Inputs planned for inclusion in the comprehensive plan, how estimated, and how everything works together (groundwater, stormwater, wastewater, sediment, tributary inputs, atmospheric deposition, snowpack, water column/sediment dynamics, bioaccumulation in fish).
	
	• Overview
	• What we know and don't know about sources and pathways: which components of the Comprehensive Plan will be underdeveloped?
	• Case Studies-What can we learn from other Comprehensive Plans.
	    • San Francisco (Kat Ridolfi)
	    • Puget Sound (Dale Norton)
	    • Lake Michigan (Chris Urban)
		Dave Dilks
		(LimnoTech)

10:30	**Break**	
10:45	**Session # 4: Best Management Practices (BMPs) exploring possibilities** • Introduce BMP concepts, relationship to the Comprehensive Plan, menu • Share San Francisco Estuary Institute BMP Toolbox implementation and effectiveness. (Kat Ridolfi) • Local stormwater project successes - City of Spokane LIDs (Marcia Davis) • Toxics Management Plans (Rob Lindsay)	*Sandy Phillips (Spokane Regional Health District)*
12:15	**Lunch Break**	*All Attendees*
1:15	**Session # 4 continued: BMP Discussion** • BMP Breakout Sessions • Discussion questions or small group exploration • Groups report back	*All Attendees*
2:30	**Session # 5: SRRTTF Next Steps** • Data Gaps and Prioritization for Next Steps • Congener data analysis: implications for source identification and toxicity • Develop 2016 Scope of Work for SRRTTF	*Lisa Dally Wilson* *(Dally Environmental)*
5:00	**Adjourn**	

February 11 (Day 3): Morning Only

9:00	**Session #6 – Database Management** Expected Outcome: "Short List" recommendation to Task Force regarding Data Management Tool(s) and Implementation. • Summary of Data Management Options (Jake Kleinknecht (Ecology EIM), Tim Towey (LimnoTech), Greg Cavallo (DRBC), Brian Robinson (City of Seattle) • Preliminary needs assessment • Breakout Sessions • Panel Discussion	**Adriane Borgias** *(Ecology)*
12:00	**Adjourn**	

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Session #1: SRRTTF Understanding of the Spokane River
(Presenters: Dave Dilks – LimnoTech; Shawn Hinz and Jeff Schut - Gravity)

Session Focus: This session will present the understanding of PCBs in the Spokane River gained by the Task Force, focusing on a detailed analysis of the August, 2014 and August, 2015 data collection efforts. Key information gaps that remain will also be discussed.

Outline:

- Background on objectives of SRRTTF
- Pre-2015 activities
    - Phase I activities and findings
    - Description of mass balance approach
    - 2014 mass balance assessment results
- Description of 2015 sampling ()
- 2015 mass balance assessment results
- Other relevant studies
- Summary of understanding
- Questions/discussion

Questions to Be Addressed
- What types of data have the SRRTTF collected?
- What types of analyses are being performed for processing the data collected from the sampling events?
- How does blank contamination affect the usability of these data?
- What have we learned about sources of PCBs from these studies?
- Beyond mass balance results, what information can be gleaned from the data collected?
- Are the quality of data sufficient to achieve the QAPP objectives?

Session # 2: Fish

Presenters: Dave Dilks – LimnoTech; Cheryl Niemi – Ecology Water Quality Program; Dave McBride – WA State Department of Health; Brandee Era-Miller – Ecology EAP; and Will Hobbs – Ecology EAP

Session Focus: This session will provide an understanding of how concentrations of PCBs in fish from the Spokane River relate to the 303(d) list of Impaired Waterbodies, State water quality criteria for the protection of human health, and the Department of Health's fish consumption advisory process. The outcome of this session will guide how this information can be used to help shape the future goals, studies and endpoints supported by SRRTTF. *(1:30 – 5 pm)*

Outline:

- General Overview: Fish tissue and water quality standards, fish tissue listings, "How did we get here?" High level explanation of bioconcentration factors (BCFs) vs. bioaccumulation factors (BAFs) as they relate to fish exposure in the Spokane River. Discussion of existing food chain modeling for the Spokane River (**Dave Dilks**) – **20 minute** presentation followed by **10 minutes** for questions. (*1:30 – 2 pm*).
- Policy Presentation: How Ecology uses fish tissue data for the 303(d) Water Quality Assessment and how that relates to Water Quality Standards. Brief update on current rulemaking. (**Cheryl Niemi**) – **30 minute** presentation followed by **20 minutes** for questions. (*2 – 2:50 pm*).
- Policy Presentation: How the Department of Health uses fish tissue data for fish consumption advisories, cover current information for the Spokane River (**Dave McBride**) – **20 minute** presentation followed by **10 minutes** for questions. (*2:50 – 3:20 pm*).
- **Break – 15 minutes** *(3:20 – 3:35)*
- Data and Future Research: Summary of fish tissue data, general observations and update on upcoming Spokane Hatchery Study (**Brandee Era-Miller**) – **15 minute** presentation followed by **10 minutes** for questions. (*3:35 – 4 pm*).
- Predicting Reductions in Fish Tissue PCB Concentrations: Case studies and modelling approaches relevant to the Spokane River (**Will Hobbs**) – **20 minute** presentation followed by **10 minutes** for questions. (*4 – 4:30 pm*).
- Time for general discussion and questions for the speakers: **30 minutes** *(4:30 – 5)*

Questions to be addressed:

- What is the difference between Bioconcentration factors (BCFs) and bioaccumulation factors (BAFs)? BCFs are based on EPA studies from the 1980's, is this data relevant?
- Why are the 303(d) Listings for PCBs in the Spokane River based on fish tissue and not water column data? Which end point should SRRTTF focus on?
- What will be the impact of rulemaking to the human health-based water quality standards in WA and ID?

- To what extent do the concentrations of PCBs observed in the water column explain the concentrations we are seeing in fish tissue (or do water column concentrations imply a secondary source)?
- Can the congener distribution in the water column and the congener distribution in fish tissue from the Spokane River be used to make any inferences about exposure pathways (and hence, relevant BMPs)?
- We know that there is a time lag in how fish respond to decreased loadings of contaminants in a waterbody. What can we reasonably expect for the Spokane River?
- Future goals, and identify additional research and data?

Session #3: Comprehensive Plan
(Presenters: Dave Dilks, Dale Norton, Kat Ridolfi, and Chris Urban)

Session Focus: This session will describe the inputs that will be considered as part of the comprehensive plan, how the inputs will be estimated, and how they will be used to develop the plan. Case studies from other sites that have conducted similar activities will also be provided.

Outline:
- What is a comprehensive plan?
- How the comprehensive plan will be developed
- Conceptual model of PCB sources, pathways, and sinks
- Available data (and data gaps) to inform the comprehensive plan
- Selection of Best Management Practices/control measures
- What the Spokane comprehensive plan will look like
- Examples of other relevant studies
    - Puget Sound
    - San Francisco
    - Lake Michigan
- Questions/discussion

Questions to Be Addressed
- What data will be considered in the comprehensive plans?
- How will data gaps dealt with?
- What will the comprehensive plan look like?
- How have these types of plans been developed in other areas?
- How will the control actions to be included in the comprehensive plan be selected?

SRRTTF PCB Workshop
Session #4: Best Management Practices – Exploring Possibilities

Session Focus:
This session focuses on creating an inventory of applicable Best Management Practices (BMPs) that can be considered by LimnoTech for inclusion in the Comprehensive Plan to accomplish measurable progress in bringing the Spokane River into compliance with applicable water quality standards for PCBs. The session will provide an overview of general BMP Concepts, a menu of BMPs to consider exploring, a preliminary analysis of PCB BMP effectiveness in other watersheds, a review of local Low Impact Development (LID) projects that are aimed at PCB stormwater reductions and a discussion of how BMPs are included in Toxic Management Plans for waste water treatment plants.

Session Outline:
Part 1:
- Introduce Best Management Concepts and the relationship with the Comprehensive Plan. Provide a menu of potential BMPs to consider for Spokane River Watershed.
- Summarize BMPs implemented in the San Francisco Bay Estuary and the resulting effectiveness and discuss their relevance to the Spokane River Watershed.
- Review Low Impact Development projects undertaken by the City of Spokane to treat stormwater on site. Discuss stormwater permits, Toxics Management Plans and BMPS.

Part 2: Breakout sessions into 6 Potential BMP Category discussion groups (as suggested by Dave Dilks and Kat Ridolfi, LimnoTech)
Part 3: Report back recommendations to LimnoTech for consideration as they develop BMPs as part of the Comprehensive Plan

Session Presentation Specifics:
- What is the definition of a Best Management Practice?
- How do BMPs fit into the Comprehensive Plan?
- What are the key issues that BMPs are intended to address?
- What BMPs have been used in other watersheds to reduce PCB contamination, and are they relevant to the Spokane River Watershed?
- What are the evaluation criteria for BMPs and are cost-benefit analyses and/or feasibility studies needed for evaluation?
    - Use – past, current, future potential
    - Effectiveness – known and data is available, or needs to be studied
    - Cost – to develop, to implement, to construct, to maintain
    - Control options - potential loading reduction
    - Feasible - to implement in the Spokane River Watershed
- What are the implementation challenges (authorities, responsibilities, cost/funding, effectiveness monitoring)?

Breakout Session Discussion Goals:
- Determine BMP applicability to the Spokane River Watershed
- Define implementation strategy

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- Identify implementation options:
    - Direct implementation by SRRTTF member (i.e. stormwater controls)
    - Implementation through SRRTTF member authority (i.e., ordinance)
    - Implementation by SRRTTF (i.e. TSCA reform)
    - Implementation by recommendation of SRRTTF (i.e., purchasing ordinance)
- Define measurement criteria:
    - Loading reduction estimate
    - Effectiveness monitoring (measurement of PCB, surrogate measure (i.e., sediment))
    - Environmental trends (water or fish concentrations)
- Provide input to LimnoTech regarding the relevance of certain Best Management Concepts to the mitigation of PCB loading to the Spokane River.

SRRTTF PCB Workshop Day 2

Potential PCB BMP Categories and Mitigation Strategies for Break-out Group Discussion

Potential BMP Categories	Potential Mitigation Strategies	Breakout Group Facilitator
Group 1 Institutional BMPs – Governmental Practices – Control Actions	Take-back programs to accept PCB-containing waste	Lisa Dally Wilson Dally Environmental
	Targeted street sweeping	
	Review/revise road oiling practices (product testing, application controls, etc.)	
	Purchasing standards/product testing	
	Implement controls on building remodeling or demolition	
	Survey of the state's utilities and other owners of electrical equipment to confirm the presence of PCBs in transformers	
	Survey PCB-containing lamp ballasts in schools/public buildings	
Group 2 Institutional BMPs – Governmental Practices - Regulations	Review/revise laws regulating waste disposal	Adriane Borgias Ecology
	Review/revise permitted burning of used oil	
	TSCA, MTCA, Clean Water Act, DW changes	
Group 3 Institutional BMPs - Educational	Education about legacy sources (caulks, ballasts) of PCBs in older buildings, and how to manage/replace them	Sandy Phillips Spokane Regional Health District
	Education about ongoing sources of PCBs, and safer alternatives	
	Use existing education programs – eg. Don't Drip and Drive, Dump Smart (carpet cleaners), Washington Waters – Ours to Protect, etc.	
Group 4 Stormwater Treatment	Discharge to river - Controls at pipe entrance	Kat Ridolfi LimnoTech
	Discharge to river - Controls in the pipe system	
	Discharge to river - Controls at end-of-pipe	
	Discharge to ground (drywells, swales, storm gardens, etc.)	
	Combined system to treatment plant	
Group 5 Wastewater Treatment	PCB minimization in influent	Ellie Key Ecology
	Treatment processes	
	Septic systems	
Group 6 Site Remediation	Identification and elimination of storage or use of PCBs	Mike LaScuola Spokane Regional Health District
	Identifying older buildings that may contain PCBs	
	Evaluation of existing clean-up sites	
	Building fire clean-up and soil testing	

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Session #5: "Next Steps/Where Do We Go From Here"

Session Focus: This session focuses on obtaining perspectives and input from invited guests and other workshop participants on the body of work performed (sampling, data analysis, approach for comprehensive plan and application of relevant BMPs) and any insights they may have about additional data collection and analysis that would assist with future source identification and reduction efforts. In addition, the session focuses on identifying potential next steps for the SRRTTF to take regarding the analysis of data generated from 2014 and 2015 sampling events, collection of new data, preparation of a comprehensive plan, and source identification and reduction actions.

Expected Outcomes: Identify and prioritize next steps for additional source contribution investigations, remaining data gaps, approaches for resolving data gaps, and potential near-term source reduction activities. Communicate next steps to the Independent Community Advisor (LimnoTech) such that they can develop the Scope of Work for the Task Force for the coming year.

Outline:

a) **Review of 2015 Priority Next Steps** (what have we accomplished in 2015)
b) **Overview of Workshop** (what we have heard over the last two days)
c) **Discussion Topics (Invited Guests and Attendees)**
   Invited Guests

- What is your overall opinion of the technical soundness of the data collection efforts (sampling, analytical, and data analysis) that have been undertaken?
   o Are these data suitable to address the question they were intended to (i.e. are their previously unknown dry weather sources)?
   o Are there other things we should be monitoring?
   o Are there other analyses of the existing data that we should be undertaking?
- Can you share relevant lessons learned from the watersheds in which you work as it applies to our efforts to understand PCB sources, their contribution, and pathways such as groundwater recharge, stormwater, sediment or snowmelt?
- Do you think it would be beneficial to look at individual congener data or homologs from water column data to identify potential sources? Do you think it would be beneficial to compare congeners in fish with those in the water column and how is that best performed? If the water column PCB levels don't explain measured fish levels, is there a way to back into the missing inputs from a congener/homologue perspective? Are there other data analysis methods such as Positive Matrix Factorization (PMF) that could help with source identification?

<u>All Attendees</u>

- Should we explore sediment as a source of PCBs to fish and the water column, and if so, how? How can we determine the extent to which PCBs in bed sediment affect PCB water column concentrations? How can we best determine the primary pathways through which fish are obtaining PCBs in the Spokane system (eg., water column, sediment).

- Do we need further quantification of stormwater loadings, and if so, how should it be done?
- What are the next steps related to source identification that should be taken in river sections where groundwater contribution is indicated to be an important source?
- Are there other parallel activities (data generation, data mining or other analysis) that should be undertaken:
  - Overlay locations where PCB congener level data for the water column, fish, sediment or other data exist on the river to determine where detailed analyses of fish/water/sediment could be performed or should be performed?
- Are there any direct actions that can/should be taken relative to sources based on the sampling results to date?
- Is there value at this point to see if fish tissue data (2005 / 2012) align with the riverine PCB concentrations measured in the 2014 and 2015 water column or align with recent sediment PCB data (eg., is there value to conducting a more rigorous food web model)?
- Are there other BMPs that should be considered beyond the ones that have already been discussed?
- **d) Input from Task Force Members (Roundtable Discussion)**
- What are the next steps that you would recommend the Task Force take in our efforts?
- What two or three next steps would be your highest priority?

Session # 6: Data Management

Session Focus:

This session focuses on identifying data management system(s) that will, through the use of reliably-collected scientific data, help SRRTTF identify, evaluate, reduce toxics loading (specifically PCB), and trend the environmental impacts of reduction activities in the Spokane River.

Present information about how systems will be used to:
- Document actions taken
- Document measured load reductions
- Identify, measure, and evaluate environmental responses

The outcome of this session is a set of recommendations that informs a needs assessment, selection of a data management system, and/or necessary enhancements to an existing system.

Session Outline:
9 am -10 am

Part 1: Summarize system options and capabilities; pros and cons; acquisition and operating expenses
- Ecology EIM
- Access database
- DRBC database
- EQUIS system

10: 15 am – 11 am

Part 2: Breakout sessions to discuss needs and evaluate broad options
Session A: Ecology EIM as **archive tool**: Ecology develops additional capabilities based on Task Force needs.
Session B: Ecology EIM as archive tool: project-specific data management and analysis tool (like **Access Database**) with graphical interface. Capable of downloading form or uploading to EIM.
Session C: Product that is **self-contained** (commercial or public domain), populated with SRRTTF data and capable of uploading data to EIM. (EQUIS, DRBC)

11 am – 11:30 am
Part 3: Report back recommendations to inform the Comprehensive Plan development about how systems will:
- Document actions taken
- Document measured load reductions
- Identify, measure, and evaluate environmental responses
- Prioritize needs assessment

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11:30 am – noon
Part 4: Panel discussion with experts (representatives from Ecology (EIM), EQUIS (City of Seattle is a user), Delaware River Basin Commission, LimnoTech (Access database) – sponsorships needed.

Session Presentation Specifics:
- What types of data needs to be managed or used?
  - Environmental data (i.e., ground water, surface water, storm water, sediment, solid, fish, air, and products) from Ecology, SRRTTF, and member organizations.
  - Permittees data (influent, effluent, stormwater, source tracing)
  - Toxics Cleanup Program data
  - Product analyses
- Management considerations (QA, input, output, reporting, updating software, ultimate disposition of system and data)
- What does the EIM provide and what are its limitations? Can changes be made to the EIM? If so, what is the timeframe for doing so? If not, how can the EIM limitations be addressed? [Same questions can be made regarding PARIS, the permit database]
- When evaluating the system and its functions, what is the price tag to acquire, maintain (purchase, updates, modifications, data QA, data input, data output and reporting)?
- What type of management functions are important: reporting, mapping, graphs (of homolog patterns), scatter plots (for trends), positive matrix factorization.
- How would the database track BMP implementation? Estimated load reductions?
- How does system document Measurable Progress?

Breakout Session Discussion Goals:
- Each session will evaluate one of the broad options in the context of the needs assessment.
- What are the SRRTTF needs (narrow down needs assessment)?
- What are the perceived pros and cons?
- Prepare a minimum of three questions for the expert panelists.