**Consumer Choice in Labeling Improves Recyclability of Waste Products and Water Quality**

***Introduction***

Polychlorinated biphenyl (PCB) is classified as a persistent and bioaccumulative chemical which means that even small contributions of PCB to the environment over time become significant. Studies of the Spokane River watershed show that PCB levels in the Spokane River fish are high enough to warrant fish consumption advisories. PCB is not manufactured in Spokane, but it is found in common consumer products, such as motor oil, paints, detergents, personal care products, and plastics. PCBs found in these products are released directly into the environment as a result of normal consumer use, as well as through recycling and disposal activities. PCBs reach the Spokane River through a number of pathways such as air deposition, stormwater, municipal water treatment and industrial discharge pathways. The trace quantities of PCB in consumer products affect the ability to reuse and recycle waste consumer materials.

Most consumers are not aware that PCB-containing products are still sold and routinely used. In addition, most consumers are unaware of the impact their purchasing decisions have on the environment, in particular the Spokane River. The current regulations for managing PCB under the Toxic Substances Control Act and the solid waste regulations are inadequate at protecting the river and those relying on the fish in the river. The most effective way to control PCB pollution is to reduce the inputs of PCB at the source. Unless steps are taken to reduce PCB at the source, the economy of the local region could be impacted by expensive end-of-pipe treatments for municipal facilities and loss of economic competitiveness for local recycling businesses.

This project is intended to increase consumer awareness through the development of a “PCB Free” label that can be adopted for use within the watershed. Labeling programs have been shown to be effective in impacting consumer behavior and ultimately market demand [add reference]. When given information during purchasing decisions, some consumers will opt for the “green” product over one where environmental information is not provided. This, in turn creates a market demand for the product, potentially creating a voluntary, self-regulating reduction in PCBs.

***Sources of PCB in Consumer Products***

Although EPA banned the commercial manufacture of PCBs in 1979, the presence of inadvertently manufactured PCB is still allowed in certain products. One example is PCB that is inadvertently produced during pigment manufacture. Environmental studies show that this source of contamination has become pervasive and ubiquitous in the environment throughout the world. [add reference] Pigments are used in almost all consumer products and may legally contain up to 50 ppm (average 25 ppm) of these inadvertently generated PCBs. If we consider the yellow pigment alone, it is estimated that approximately 1.5 million pounds of PCBs are produced each year from the production of yellow diaryl pigments. Another pigment family, the phthalocyanines (green and blue) also contains PCB. These pigments find their way into paints, newspaper inks, printing toners personal care products, and polymer plastics.

The EPA regulations also allow concentrations of PCBs in other products such asdetergent bars (clear hand “soaps”) (up to 5 ppm PCB) and motor oil (up to 2 ppm).

***Hierarchy of Source Reduction and Impact of PCB to the Recycling and Waste Management Industry***

The traditional waste management hierarchy calls for

1. Source Reduction
2. Recycling
3. Energy Recovery
4. Treatment
5. Disposal or Other releases

When managing a persistent, bioaccumulative substance such as PCB, source reduction becomes a priority. Recycling activities have the potential to concentrate and/or disperse PCB in the waste streams and environment. As long as inadvertently produced PCBs are allowed, there is a real threat to the economic viability of recycling sectors such as paper, plastics, auto shredding waste, and electronics recycling. Economic failure of a local recycling industry, however, does not lessen the impact of this contaminant. Recyclable materials can be diverted to overseas operations where environmental controls are not as strictly enforced. PCBs then enter the environment through and are transported globally through a number of pathways. [insert ref]. For example, the [ ] in Bend, Oregon has published information showing that toxics are transported in the atmosphere from Asia and deposited in North America.

Solid wastes that contain PCB are land disposed or incinerated. The solid waste management and air quality regulations may not protect water quality. For example, a Waste to Energy plant, can emit up to [ ] PCBs annually from consumer waste. Air deposition of PCBs has been shown to be a potential factor in the Spokane River Watershed.

The water quality standard for PCB under the National Toxics Rule is 170 parts per quadrillion. The Spokane River standard is 0.34 parts per quadrillion. The allowable EPA concentration of 50 ppm is 150,000,000,000 greater than Spokane River’s standard. Treatment costs of municipal and industrial effluent to this standard would be . . .

***Collaborative Efforts to Address PCB Source Reduction in the Spokane River***

The State of Washington Department of Ecology (Ecology) and the EPA are doing something different than a TMDL to address PCBs in the Spokane River. To accelerate clean‐up actions, interests groups and governments in the Spokane River basin have collaborated on a unique and innovative approach that includes the establishment of a Spokane River Regional Toxics Task Force (Toxics Task Force). The task force is a collaborative effort between two states, environmental groups, municipalities, and industries that have an interest in making measurable reductions in the amount of PCBs reaching the river.

This proposal is one part of a series of actions that are part of a larger strategy implemented by the Department of Ecology and the SRRTTF. Toxic contaminants such as PCB, that are persistent, and bioaccumulative are a special waste minimization challenge. The waste management hierarchy of 1) Source Reduction, 2) Recycling, 3) Energy Recovery, 4) Treatment and 5) Disposal or Other releases is not appropriate as long as residual PCBs are present in the material. Source reduction is the only viable long-term alternative. An alternate hierarchy of 1) Don’t make it, 2) Don’t use it, 3) Use less of it, 4) Manage it better, and 5) Remove it is more appropriate.

***The Spokane River Source Reduction Hierarchy***

*Don’t Make It*

The Toxics Substances Control Act (TSCA) currently allows for PCBs to be manufactured at up to 25 ppm concentration, up to 50 ppm maximum as a result of inadvertent production. The SRRTTF has requested EPA to consider removing this allowable source of PCBs. Changing this rule could eliminate a PCB source that is widely distributed throughout the consumer and recycling markets.

*Don’t Use It*

PCBs have been documented to be present in common consumer products such as printed materials, paints, detergent bars, and motor oil. PCBs can potentially be present in any product containing inks or dyes. This proposal is intended to address the information and process needed to communicate the “Don’t use” message to consumers.

As will be addressed in [ ], [insert information about consumer choice and labeling programs]

*Use less of it.*

[related and complimentary messaging]

[regulatory concepts such as usage of pigments by application]

*Manage it better.*

[Best Management Practices as developed by the SRRTTF]

*Remove it.*

[Last option, involves end-of-pipe treatment -- estimate of costs?]

**Desired Outcome**

The overall desired outcome is to eliminate the introduction of PCBs from commonly used consumer products into the environment using voluntary market-based incentives.

**Desired Outcomes for Project**

A labeling program that helps consumersmake informed purchasing choices, including

* Evaluation of types of labeling programs available and recommendations
* Description of the key elements of a program
* Implementation plan with market segments
* Description of consumer education and outreach needs

**Approach**

Some consumers will be motivated to purchase a “PCB Free” product is they perceive that buying the product leads to achieving the end goal.

Educate and inform consumers about their purchasing impacts.

Implement

**Partnerships and Matching Funds**

SRRTTF: participants of members in kind

Others?

**Deliverables**

1. Research existing labeling programs: identify key success factors
   1. “White Paper” for review and comment by SRRTTF
2. Prepare prototype program
   1. Criteria for “PCB-Free  
       label
   2. Target products
   3. Target audience
   4. Partners for labeling and certification
   5. Education and messaging
   6. Label design
   7. Implementation in local area
   8. Transferrability to other areas
3. Finalize program based on SRRTTF recommendations
4. Implement program
   1. Identify implementing organization
   2. Transfer program to implementing organization
   3. Metrics, monitoring, and feedback