Toxics Task Force Presentation

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Title Slide
We are members of this community and committed to the health of the Spokane River.

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Who We Are
We represent a broad diversity of interests: business, tribes, conservation groups, and state, local and Federal government agencies. And we are collaborating and leading efforts to find and reduce toxic chemicals in the Spokane River and Lake Spokane.

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The Issue
So, what is the issue? To begin our discussion, it is necessary to understand that there are different water quality standards. There are Federal (EPA), State (WA Ecology), and tribal (Spokane Tribe).
The Federal Clean Water Act requires that upstream users can not cause or contribute to a violation of downstream water quality standards.

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Our Vision
Our goal (vision) is to work together to properly identify sources and take measurable action toward addressing these sources to bring the Spokane River into compliance with applicable water quality standards.
This approach must be reasonable, science-based, and something that can be accomplished using current technology.

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What Are PCBs?
A family of toxic industrial compounds that persists in the environment and accumulates in animal tissue.
Properties:

- First produced in 1927 and commercial production started in 1935
- They were found to have good insulating and fire resistance properties
- And were used in transformers, motor oil, hydraulic fluids

- And are also often found in the materials used to construct old (pre-1979) homes
- But they were found to have environmental impacts, so
- Stopped commercial production in 1977
- PCBs were banned in the US in 1979

In 1989 1.5 million tons was the estimated global inventory of PCBs

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Where PCBs Are Found Today

Production of "inadvertently generated" PCBs is still allowed

Toxic chemicals are in the products we buy and use every day – from household cleaners to yard products to durable goods. The risk from toxic chemicals isn't just a leaking drum at an industrial site. Our consumer choices can make a difference in preventing the use of these chemicals in the first place.

EPA allows maximum of 50 ppm of PCBs in products and are classified "non" PCB

PCB levels exceeding water quality standards are still being detected in present day products such as:

- Inks, dyes, pigments (yellow, green and blue color) that are used in:
    - Paints
    - Dyes for clothing
    - Newspaper printing inks
- Caulk
- Motor oil
- Consumer products
- Plastics
- Detergents
- Soaps and shampoos
- Food packaging
- Cosmetics

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How PCBs Enter the Spokane River:

- Through storm water run-off

- Through the atmosphere from the water cycle - rain and snow - atmospheric deposition
- Through the home and PCB-containing consumer products
- Through waste water treatment plants:
    - Human waste flushed down our toilets
    - Dyes washed off our clothes
    - Recycling of newspaper

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How PCBs Enter the Spokane River?

Specific to the Spokane River, this Pie chart shows what we know about the sources of PCBs

The Clean Water Act uses the terms "Point source" (as in comes out of a pipe, such as wastewater treatment plants) and "Non-point source," generally thought of as uncontrolled storm water (such as agricultural run-off, storm water washed off parking lots, roads and highways .

The point sources in WA (wastewater treatment plants) do not produce PCBs. They received PCBs from **true sources such as consumer by-products and the inks in recycled newsprint.** The wastewater treatment plants are effective in removing most of the PCBs but are unable to get down to the low levels of the water quality standards

The important part about this Pie Chart is the **significant "Unknowns" (57%) and that the WA Dischargers only represent 8% of the total load**

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What Are PCB Limits?
Water Quality Standards
WA State's PCB WQS is 170 picograms per liter

EPA Water Quality Standard is 64 picograms per liter

The Spokane Tribe's WQS is 3.37 picograms per liter

Sources of PCB in the watershed:

- Motor oil (up to 2 ppm allowed by the US Food and Drug Administration)
- Detergent bars (up to 5 ppm)
- Fish and animal feed (up to 2 ppm)
- Food wrappers (up to 10 ppm)
- Human food (0.2 to 3 ppm in milk, eggs, other dairy products, poultry, fish, shellfish, and infant foods)

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What Are PCB Limits?

Picograms per liter is same as parts per quadrillion

What does this look like?

- One picogram/liter is trying to find one dollar bill in the entire country of Canada
- One picogram per liter is trying to find one hair from all the heads of all the people on the planet
- One picogram per liter is 2.5 minutes out of the age of the Earth
- One picogram per liter is like pouring one cup of coffee in the Great Lakes

Or, you could also say: One quadrillion, sixty-seven billion, eighty-eight million,
three hundred and eighty-four thousand Pennies [One cube measuring 2,730 x 2,730 x 2,730 feet]
From the MegaPenny Project, aimed at putting big numbers in easily-understood terms and visuals.

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Health and Environmental Impacts of PCBs

- PCBs are persistent, bioaccumulative, and toxic
- Take a long time to degrade in the environment

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Health and Environmental Impacts of PCBs

Many of these chemicals end up in our environment, including our lakes and rivers. Here they persist and travel up through the food chain, in some cases having ongoing impacts to humans and the environment.

Environmental impacts

- Accumulates and is toxic, is very slow to break down, concentrates in fish, affects wildlife and people that eat fish

Health impacts

- Can cause Skin ailments, liver damage, neurological effects, birth defects and is a suspected carcinogen

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Decline of 50% Over 20 Years

- Remediation work has reduced PCB levels in the Spokane River by 50% since the 1980s
    - The first 50% was in part due to remediation but also due to natural reductions in PCB due to the EPA bans on commercial production.

- Additional work is needed to reduce levels by 98%

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Task Force Approach

- Efficient and cost-effective collaborative process
- Seeking long-term, science-based solutions
- Using direct-to-implementation process
- Find source – remove source
- Through this approach, Spokane is a national leader

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Task Force Goals

The Task Force did a "needs assessment" and we identified these needs:

- To bring the Spokane River into compliance with applicable water quality standards
- Engage in clean-up activities
- Prioritize which activities are the most efficient and cost effective
- Better understanding of how PCB enters and moves through the Spokane River
- Develop an understanding of the river and describe in a model
- Identify the data we have for the model and what data we need (a data gaps assessment)
- Fill the data gaps with data that is collected or information that we can infer from environmental studies

The work plan for cleanup will include "best management practices" and PCB reductions activities.

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Task Force Accomplishments

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Looking Ahead

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Why Should You Care?

- Human Health
    - Fish consumption

- Clean Water
    - Aquifer
        - Exchanges water with the Spokane River, so a clean Spokane River means clean drinking water
- Your investment means:
- Economic Growth
- Preservation of the physical beauty of the River

BUT We all pay for this somehow—better now than later

Costs shared by:

- Rate payers
- Businesses
- Government
    - Federal
    - State
    - Local

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What Can You Do as a Consumer?

Don't make, don't use, and use less. Managing PCBs and preventing them from entering the environment will take a comprehensive approach that addresses many sources including consumer products.

Currently, there is no consumer labeling or education programs about PCBs and associated toxic chemicals. Learn more about what is allowed and what products contain toxic chemicals and make changes in what your purchase.

- Product choices such as dye-free goods
- Proper disposal of used products containing pollutants (Motor oil, caulk, paint)
- Support efforts for "PCB-free" pigments and labeling

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Questions?