

**Inland Empire Paper Company  
NPDES Permit No. WA-000082-5  
Permit Condition S6.B.**

**Polychlorinated Biphenyls  
Best Management Practices Plan**

**2015 Report**

**October 30, 2015**

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## **PCB Best Management Practices Plan**

### **1.0 INTRODUCTION**

Permit Condition S6.B., PCB Best Management Practices (BMP) Plan, of Inland Empire Paper Company's (IEP) National Pollutant Discharge Elimination System (NPDES) Permit No. WA-000082-5 includes a requirement to develop a PCB BMP plan. Direct language from the permit regarding this condition is as follows:

*By November 1, 2015, the Permittee shall develop a PCB BMP plan and submit it to the Department for review and approval. The plan shall include the following:*

### **2.0 CROSS-FUNCTIONAL TEAM FOR BMP DEVELOPMENT**

IEP's Engineering and Production staff all play significant roles in the development and implementation of this BMP plan based on their respective disciplines, responsibilities and departments. Key individuals contributing to this effort include:

Doug Krapas – Environmental Manager and Team Leader  
Ryan Ekre, Ph.D. - Environmental Engineer  
David Newton – Technical Superintendent  
Kevin Davis – Production Manager  
T. J. Eixenberger – Plant Engineer  
Luke Huntley – Pulp Mill Superintendent  
Chris Averyt – Paper Machine Superintendent

### **3.0 CURRENT AND PAST SOURCE IDENTIFICATION AND WASTEWATER REDUCTION EFFORTS**

This report details the results of IEP's investigation into feasible PCB BMP's based on its PCB Source ID Study and the feasibility of PCB reduction opportunities. It should be noted that all PCB containing equipment was removed from IEP several decades ago. The IEP facility was deemed a PCB free facility through a multi-media inspection performed by the Washington State Department of Ecology and EPA in the early 1990's.

IEP recently conducted a source identification study as part of NPDES permit condition S6. The study identified recycle paper as the primary source of PCB's within the facility and wastewater treatment system. A potential mitigation approach is discussed in subsequent sections.

IEP has implemented significant wastewater reduction efforts in the past decade; unfortunately these efforts have increased the technological difficulty in removing PCB's within the site due to cross contamination. Wastewater reduction efforts to date include:

- a. **Conustrenner (2004)** – The conustrenner is a compact highly efficient self-cleaning fractionation filter. Approximately 1-1.4 MGD of primary treated water is diverted to the conustrenner for reclamation and reuse in the pulp mill processes, greatly reducing freshwater needs and volumetric loading to the water treatment system.
- b. **Pump Seals (2005 to 2007)** – Flow limiting devices were installed on mechanical seal water lines for numerous pumps around the mill. These devices greatly reduced freshwater consumption to the process streams resulting in a substantial decrease in the volumetric loading to the water treatment system.
- c. **Retention Aid Carrier Water (2012)** - IEP switched from using fresh water to reclaimed process water for its retention aid carrier water. This modification reduced treated effluent flow by approximately 100 gallons/minute. Just a note: We intended to go back to this design, but are currently running on fresh water due to white water quality concerns.
- d. **Disk Filter Shower Water (2014)** – IEP's #1 Disk Filter showers were changed from fresh water to reclaimed process water. This modification reduced treated effluent flow by approximately 200 gallons/minute.

#### **4.0 POTENTIAL BMP'S**

IEP recently conducted a PCB source identification study in compliance with condition S6.A. of its National Pollutant Discharge Elimination System (NPDES) permit number WA-000082-6. The intent of the source identification study was to aid in the development of Best Management Practices (BMPs) for dealing with Polychlorinated Biphenyls (PCBs); Condition S6.B. The source identification study implicated the use of recycled paper within the facility as the primary source of PCB's to its wastewater treatment system.

Direct language from the NPDES permit relating to the PCB BMP is as follows:

*The goal of the BMP plan is to maintain or lower effluent concentrations of PCBs through source control, pollution prevention and/or wastewater reduction opportunities.*

Unfortunately one stated method from the NPDES permit (wastewater reductions) has had the opposite effect within the facility and has compounded the PCB problem within process streams due to cross-contamination; further details of this issue are explored in the PCB source identification study.

IEP foresees three options for reduction of PCBs in its final effluent .:

- Toxic Substances Control Act Reform
- Tertiary Treatment
- Elimination of paper recycling
- Tertiary treatment

#### 4.1 TSCA REFORM

The PCB problem for water quality compliance derives from the federal allowance for PCB concentrations up to 50 parts per million (ppm) in manufactured products. This allowance under EPA's Toxic Substance Control Act (TSCA) results in the presence of PCBs in a wide range of commercial and consumer products, including caulking, soaps, pigments, inks, dyes and paints. PCBs present in commercial and consumer products enter the environment through many pathways, including hatchery fish, stormwater, pulp and paper mills that process recycled paper products, and every municipal wastewater treatment plant.

In the Pacific Northwest, EPA is requiring public and private facilities to meet very stringent PCB water quality criteria placing dischargers in the impossible position of trying to treat the presence of PCBs that result from EPA's TSCA regulations. Even EPA appears to acknowledge that there is no way for dischargers to technically or economically achieve this burden.

IEP in conjunction with many different industrial, environmental, and Tribal entities is pursuing TSCA reform. Mitigating the PCB issue at the source in dyes, inks, and other products will relieve the significant technological, environmental, and economic burdens on wastewater treatment facilities throughout the country. In order to provide the most environmental benefits it is necessary to hold the producers of PCB containing products to the same type level of standards as the wastewater treatment facilities that are saddled with the challenge of removing PCBs. To address this issue IEP is pursuing the following change to TSCA:

The following amendment to the TSCA regulations is needed to address this source of PCBs:

1. Amend Section 6 of TSCA, 15 USC 2605(e)(2)(B) to read: After January 1, 201X no person may manufacture, process, or distribute in commerce or use any polychlorinated biphenyls in any detectable amount previously authorized under authorization of the Administrator by rule.

If repeal of the TSCA exception is not acceptable, then the following amendment of the Clean Water Act should be adopted to protect those downstream from harm resulting from the TSCA allowance:

1. Amend Section 303(b) of the CWA, 33 USC 1313(b) to add a new subsection: (3) The Administrator shall not propose or approve new or revised water quality standards for states or tribes for polychlorinated biphenyls as long as the Administrator by rule allows for the manufacture, process or distribution of polychlorinated biphenyls in detectable amounts under the Toxics Substance Control Act.
2. Amend Section 304(a) of the CWA, 33 USC 1314(a) to add a new subsection: (6) The Administrator shall not propose new or revised criteria for water quality standards for polychlorinated biphenyls as long as the Administrator by rule allows for the manufacture, process or distribution of polychlorinated biphenyls in detectable amounts under the Toxics Substance Control Act.

#### 4.2 TERTIARY TREATMENT

In an effort to attain compliance with the Spokane River DO TMDL, IEP is currently developing a new biological treatment technology that utilizes algae to remove nutrients from process waters. The system has two main components; a biological based reactor and an ultra-filtration membrane system. It is believed that the combination of the two components will result in significant reductions to PCBs due to biological absorption to the algae and complete suspended solids removal by the membrane system.

Additional testing of the system will be on-going for approximately the next year. During this time the PCB removal capabilities of the system will be evaluated. A high level of PCB removal is anticipated based on data collected by the Spokane County Wastewater Treatment Facility (SCWTF). SCWTF utilizes a membrane system as a final treatment step prior to discharge. This same approach is used in the biological process being developed by IEP.

Tertiary treatment being developed for the compliance with the DO TMDL is currently the default PCB BMP.

#### 4.3 ELIMINATION OF PAPER RECYCLING

The PCB source ID study implicated recycled paper as the primary source of PCBs to the facility. Inks and dyes used for printing contain concentrations of PCBs up to 50mg/L or approximately 300 million ( $2.9 \times 10^8$ ) times more than the current WA State water quality standard of 170pg/L. This creates a significant burden on the facility by requiring in excess of 8-Log removal of PCBs. This level of treatment is unlikely to be achieved through any current technologies available.

There are significant environmental benefits from recycling paper that include conservation of natural resources, energy savings, reductions in greenhouse gas emissions and reductions in used landfill space. To achieve the water quality standard for PCBs within the effluent at the facility it would be necessary to completely remove any and all PCBs that enter the facility. Recent experiences at Ponderay Newsprint Company (PNC) suggest that even small amounts of recycle (< 0.6% of total pulp) can contribute a significant amount of PCBs to the effluent system. It was not until PNC completely ceased recycling that PCB concentrations fell to levels that can be considered background concentrations (~80 pg/L); Additional details from PNC may be found in the PCB Source ID study, Permit Condition S6.A.

The overall effect of eliminating recycling would likely have significant consequences for IEP. This action may result in a net negative environmental impact due to the elimination of all the beneficial aspects of recycling. IEP would cease to have the capability of providing a finished paper product with recycled content and would lose this market share. IEP installed its integrated recycling facility in 1991 due to environmental pressures and paradoxically it is now environmental regulations that now threaten the future of recycling at IEP. Because of the significant impact to IEP's business, elimination of recycling will be the last BMP to be implemented.

## **5.0 UPDATES TO BMP PLAN**

This report represents the first iteration of IEP's PCB BMP. Subsequent reports will include updates to the plan.

## **6.0 ADDITIONAL PCB TESTING RESULTS NOT REQUIRED UNDER CONDITION S3**

Additional PCB testing results used in support of the BMP may be found in IEP's PCB source identification study report.