Request for Proposal and Statement of Qualifications

Evaluate Applicable Methods under TSCA Section 21 and Develop a Strategy to Petition EPA to Initiate a Proceeding for the Amendment or Repeal of the Exclusion for Inadvertently Generated PCBs

Background

The Spokane River Regional Toxics Task Force (SRRTTF) is an organization with members representing industry, government, and environmental interests collaborating to identify and implement solutions to reduce Polychlorinated biphenyls (PCBs) in the Spokane River. PCBs are ubiquitous in the environment and there are numerous sources of them. Most PCBs are persistent, bio-accumulative, and toxic chemicals (PBTs) and many have been designated by EPA as probable human carcinogens.

While the production of PCB's was banned in 1979 under the Toxics Substance Control Act (TSCA), PCBs have the potential to be inadvertently produced in certain chemical manufacturing processes that involve chlorine and high temperatures. PCBs created as unintentional byproducts of these manufacturing processes are referred to as inadvertent PCBs (iPCBs). TSCA (40 CFR 761) allows manufacturing processes to 'inadvertently' generate iPCBs up to an average PCB concentration of 25 parts per million (ppm) or an absolute limit of 50 ppm.

EPA has identified over 200 chemical processes that may produce iPCBs (A. Stone, 2018; Heine and Trebilcock, 2018). Of the processes generating iPCBs that have been reported to EPA by facilities generating or importing iPCBs from 1994 – 2015, pigment and dye manufacturing is the most common, comprising 69% of the total reports of iPCBs (USEPA, 2022). In addition to organic and inorganic pigment manufacture, other primary production sources of iPCBs include production of chlorinated solvents, agricultural chemicals, detergent bars and wood treatment (Heine and Trebilcock, 2018). Those products then have the potential to contaminate downstream supply chain products. In the case of pigments, they are incorporated into a variety of products such as inks, paints, and colorants, which can be used to print newspapers, magazines, other paper products, packaging or applied as decorative or protective finishes. Inadvertent PCBs have also been found in cosmetics, leather, and other materials.

As legacy PCBs are reduced by cleanup actions and slow biodegradation, iPCBs are becoming a larger percentage of the total PCBs in the water column of the Spokane River and in the environment in general.

The water quality standard (WQS) for total PCBs in the state of Washington is 170 parts per quadrillion, or 0.00000017 ppm, which is nearly 300 million times lower than current allowable levels under TSCA. EPA is expected to further reduce this standard to 7.0 ppq (0.000000007 ppm) and the downstream Spokane Tribe of Indians has adopted a standard of 1.37 ppq (0.0000000013), both of which are billions of times lower than the TSCA allowance. Wastewater treatment plants (WWTPs) in the Spokane River basin have invested in advanced treatment systems that are capable of removing and destroying up to 99% of the PCBs entering their systems, but are still not able to meet all of these WQS. Even with these advanced, state-of-the-art treatment systems, low levels of PCBs continue to enter the Spokane River through stormwater sewer systems and surface runoff.

A study of PCB congener distributions in the influent and effluent of Spokane River WWTPs shows that the most advanced treatment technologies are capable of removing the higher molecular weight, more bio-accumulative PCBs, leaving lower molecular weight PCB congeners that are more soluble in the final treated effluents (Rodenburg et.al, 2021). Some of the lower weight congeners are inadvertently produced (e.g., iPCBs) and therefore, continue to enter the river while legacy PCBs are removed through the WWTPs.

In an effort to meet current water quality standards and reduce environmental risk, PCB levels in the Spokane River and other water bodies in the nation will need to be reduced utilizing both beginning-of-life and end-of-life solutions. One suggested beginning-of-life action is to reduce or eliminate the allowance for iPCBs in products, specifically by petitioning EPA to evaluate the current Toxic Substances Control Act (TSCA) allowance for inadvertently generated PCBs.

Goal

The goal of this project is to reduce or eliminate the TSCA allowance for inadvertently produced PCBs in the environment by petitioning EPA to review the current limits.

Scope of Work/Objectives

The objectives of this project are to:

1) Evaluate methods for petitioning EPA to reevaluate the TSCA allowance for iPCBs with the intention of reducing or eliminating the allowance for inadvertently generated PCBs and determine whether those methods are feasible.
2) Provide direction to the SRRTTF regarding the methods evaluated, feasibility, and the most appropriate approach to pursue.
3) Develop a specific strategy, stepwise approach, and schedule for filing a Section 21 petition with EPA to reduce or eliminate the allowance for iPCBs. Include a timeline for the process, provide options (where available), and a list of considerations to assist in evaluating those options.

Qualifications and Requirements for RFP Submittal

Successful bidder will have knowledge and relevant experience with TSCA Section 21 Petitions and be familiar with basic routes of chemical restriction within the TSCA framework.

Bidders are asked to provide the following information as part of the submittal:

1. Statement of qualifications, including resumes for those expected to work on this project.
2. Scope of Work addressing each of the Objectives listed above.
3. Cost proposal for conducting the scope of work proposed

RFP Schedule

Proposals are due no later than 5:00 pm Pacific Time on December 23, 2022. Questions should be directed to Doug Krapas (dougkrapas@iepco.com). Electronic copy of proposals should be submitted in pdf format to Doug Krapas at dougkrapas@iepco.com with a copy sent to Ben Floyd at White Bluffs consulting ben@whitebluffsconsulting.com .

Selection of successful bidder will occur in January, 2023. Work to commence in January 2023 and be completed no later than May 2023.

References

40 CFR 761, Polychorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions, Environmental Protection Agency (USA)

Heine, Lauren and Charlotte Trebilcock, Inadvertent PCBs in Pigments: Market Innovation for a Circular Economy. Final Report for the Spokane River Regional Toxics Task Force (SRRTTF), Submitted by Northwest Green Chemistry October 16, 2018.

Hu, Dingfei and Hornbuckle, Keri C, Inadvertent Polychlorinated Biphenyls in Commercial Paint Pigments, *Environmental Science & Technology*, 2010, 44, 2822-2827.

Rodenburg, L, Guo, J. and Christie, R., Polychorinated biphenyls in pigments:inadvertent production and environmental significance. *Coloration Technology*, 2015, **131**, 353-369.

Rodenburg, L., Hermanson, M and Sumner, A., Effect of Membrane Filtration on the Fate of Polychlorinated Biphenyls in Wastewater Treatment. *Chemosphere*, Volume 287, Part 3, January 2022.

Sistovaris, N.; Donges, U.; and Dudek, B., Determination of Traces of Polychlorinated Biphenyls in Pigments. *Journal of High Resolution Chromatography*, 1990, 547-549.

Stone, Alex, Polychlorinated Biphenyls (PCBs) in General Consumer Products. Olympia, WA: Washington State Department of Ecology, 2014. 2018. <https://fortress.wa.gov/ecy/publications/documents/1404035.pdf>.

USEPA, 2022, https://www.epa.gov/pcbs/inadvertent-pcbs