



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10**

1200 Sixth Avenue, Suite 155  
Seattle, WA 98101-3123

WATER DIVISION

February 28, 2022

Ms. Diana Washington  
Washington Department of Ecology  
Water Quality Program  
4601 N. Monroe Street  
Spokane, WA 99205  
(sent via email to: [dwas461@ecy.wa.gov](mailto:dwas461@ecy.wa.gov))

Re: U.S. Environmental Protection Agency Comments  
Draft National Pollutant Discharge Elimination System (NPDES) Permit and Fact Sheet  
City of Spokane Riverside Park Water Reclamation Facility and Combined Sewer Overflows  
(Permit #WA0024473)

Dear Ms. Washington:

Thank you for the opportunity to comment on the Washington Department of Ecology (Ecology) draft permit for the City of Spokane Riverside Park Water Reclamation Facility and Combined Sewer Overflows (Spokane RPWRF). EPA conducted this review in accordance with the procedures outlined in the National Pollutant Discharge Elimination System (NPDES) Memorandum of Agreement Between Ecology and EPA Region 10. EPA is providing the following comments on the draft permit and fact sheet.

## Fact Sheet

### Mixing Zone for Polychlorinated Biphenyls

As shown in Tables D-5 and D-6, the reasonable potential and effluent limit calculations for polychlorinated biphenyls (PCBs) incorporate dilution factors from a mixing zone.

EPA understands that the segment of the Spokane River that receives discharges from outfall 005 is not on the 303(d) list for PCBs and that average measured concentrations of PCBs in the water column upstream from the facility are below the applicable water quality criterion of 170 pg/L after blank censoring. However, in this case, EPA believes a mixing zone for PCBs is not appropriate, for the following reasons.

### River and Lake Segments Upstream and Downstream of the Discharge are Impaired by PCBs

The segments of the Spokane River and Spokane Lake listed in Table 1, below, are in category 5 (i.e., impaired and needing a TMDL) of Ecology’s most recent approved 303(d)/305(b) integrated report due to PCBs in fish tissue.

*Table 1: Category 5 Listings for PCBs in Fish Tissue in the Spokane River and Spokane Lake*

Listing ID	Location
8201	Spokane River, upstream of RPWRF

Listing ID	Location
8202	Spokane River, upstream of RPWRF
8207	Spokane River, upstream of RPWRF
9027	Spokane River, downstream of RPWRF
9033	Spokane River, downstream of RPWRF
14385	Spokane River, downstream of RPWRF
14397	Spokane River, upstream of RPWRF
14400	Spokane River, downstream of RPWRF
78968	Spokane River, downstream of RPWRF
9015	Spokane Lake
9021	Spokane Lake
36440	Spokane Lake
36441	Spokane Lake
78928	Spokane Lake
78929	Spokane Lake
78930	Spokane Lake
78931	Spokane Lake
78932	Spokane Lake
78933	Spokane Lake

In addition to these impairment listings, in the fall of 2020, the Spokane River Regional Toxics Task Force collected year-old Redband trout from the segment of the Spokane River that receives the discharge from the RPWRF. Although these data should not be compared directly to tissue exposure concentrations for beneficial use assessment or to data from prior fish sampling efforts because the fish are young and because whole fish rather than fillets were analyzed, the tissue concentrations measured in whole year-old Redband trout at this location are of a similar magnitude to tissue concentrations measured in the Task Force’s study in 303(d)-listed river segments.<sup>1</sup> Therefore, it is likely that if fish tissue data suitable for beneficial use assessment were available for the Spokane River segment receiving the discharge, that segment would also be impaired due to PCBs.

#### PCBs Are Persistent and Bioaccumulative

EPA recognizes that Ecology’s mixing zone policy does not expressly prohibit mixing zones for bioaccumulative pollutants. However, Ecology’s mixing zone policy does state that “No mixing zone shall be granted unless the supporting information clearly indicates the mixing zone would not have a reasonable potential to cause a loss of sensitive or important habitat, substantially interfere with the existing or characteristic uses of the water body, result in damage to the ecosystem, or adversely affect public health as determined by the department” (WAC 173-201A-400(4)).

Section 5.1.2 of EPA’s *Water Quality Standards Handbook*<sup>2</sup> recommends against mixing zones for bioaccumulative pollutants. As explained in the handbook, fish tissue contamination tends to be a far-field problem that is not confined to a mixing zone. In addition, the handbook specifically mentions mixing zones that may encroach on areas often used for fish harvesting as a situation in which it may be appropriate to restrict or eliminate mixing zones for bioaccumulative pollutants. The Spokane RPWRF is directly upstream from the “Bowl and Pitcher Area” at Riverside State Park, which is identified as a fishing area by the Washington State Parks and Recreation Commission.<sup>3</sup>

<sup>1</sup> [http://srtrtf.org/wp-content/uploads/2021/08/SRRTTF\\_FishTissuePCBReport\\_07-30-2021\\_final.pdf](http://srtrtf.org/wp-content/uploads/2021/08/SRRTTF_FishTissuePCBReport_07-30-2021_final.pdf)

<sup>2</sup> <https://www.epa.gov/wqs-tech/water-quality-standards-handbook>

<sup>3</sup> <https://www.parks.wa.gov/DocumentCenter/View/1937/Riverside-State-Park-PDF>

Discharges of PCBs at concentrations above the water quality criterion just upstream from a designated fishing area to a river with multiple segments impaired by PCBs in fish tissue may interfere with the harvest use of the waterbody and/or adversely affect public health and would therefore not be allowed under Washington's mixing zone policy.

### Summary

Because of the multiple 303(d) listings for PCBs in segments of the Spokane River and Spokane Lake both upstream and downstream of the discharge, the persistent, bioaccumulative nature of PCBs, a designated fishing area located just downstream of the discharge, and nearby tissue concentrations similar in magnitude to those observed in 303(d)-listed segments of the river, any apparent capacity for discharges of PCBs at concentrations above the water quality criterion is likely illusory if the fish tissue exposure pathway is considered. Therefore, EPA recommends that Ecology not authorize a mixing zone for PCBs for the Spokane RPWRF and that reasonable potential and effluent limit calculations for PCBs be repeated with applicable water quality criteria applied at the point of discharge.

### Wastewater Influent Characterization

In Table 5, on Page 16 of the fact sheet, there are two lines for influent temperature, both labeled as "Average 7-DADMax," but with different values. Based on a discussion between you and Brian Nickel of my staff on January 25, 2022, we understand that the second row, with a higher temperature value, is actually a 1-DMax temperature, not a 7-DADMax. Please correct the table as needed.

### Mixing Zones (General)

In Table 15, on Page 33 of the fact sheet, which lists the critical conditions used to model the discharge, the harmonic mean river flow is missing from the table. The Surface Water Toolbox software, jointly developed by the USGS and EPA, can calculate stream design flows for a variety of averaging periods and return frequencies, including the harmonic mean.<sup>4</sup> Please calculate a harmonic mean river flow rate and add it to Table 15.

On Page 41, the description of the mixing zones includes physical dimensions. However, this discussion also states that the dilution factors were calculated based on percentages of the critical flow, and that the permit requires a dye test/mixing zone evaluation. If the physical dimensions of the mixing zone will not be known until the dye test or mixing zone evaluation is completed, the fact sheet should clearly state this.

The mixing zone dilution factors for human health criteria in Tables 19 and D-5 of the fact sheet do not match those in Table D-6 of the fact sheet or Table 5 of the draft permit. Tables 19 and D-5 of the fact sheet list the carcinogen and non-carcinogen dilution factors as 12.7 and 4.5, respectively, whereas Table D-6 of the fact sheet and Table 5 of the draft permit list these dilution factors as 12.5 and 3.8. Please ensure that the dilution factors are correct and consistent.

### Evaluation of Surface Water Quality-based Effluent Limits for Narrative Criteria

On Page 38, the fact sheet states, "methylmercury only has criteria for marine waters." This is not correct. Although the criterion of 0.03 mg/kg methylmercury in fish tissue that EPA promulgated for the State of Washington is an "organisms only" human health criterion, and such criteria are generally applicable to marine waters, the methylmercury fish tissue criterion is applicable to waters designated for domestic water, which includes the Spokane River. See 40 CFR 131.45(d)(2). Ecology should

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<sup>4</sup> <https://pubs.er.usgs.gov/publication/tm4A11>

evaluate the reasonable potential for the Spokane RPWRF to cause or contribute to excursions above the methylmercury fish tissue criterion. EPA has published the *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion* to assist permitting authorities with this analysis.<sup>5</sup>

On Page 39, the fact sheet states, “Participation in the Spokane River Regional Toxics Task Force will enable dischargers to the Spokane River to coordinate efforts to find and reduce sources of PBDE to the River.” The Task Force’s memorandum of agreement states that, “For purposes of this Agreement, all references to ‘toxics’ shall mean PCBs and Dioxins that were included on the Washington 2008, Category 5, 303(d) list.”<sup>6</sup> PBDE was not among the parameters causing category 5 listings in the Spokane River in the 2008 integrated report. As such, PBDE are not addressed by the Task Force’s memorandum of agreement, and it is not clear that the Spokane River Regional Toxics Task Force will specifically address PBDE sources to the Spokane River.

### Total PCB Analytical Methods

The discussion of total PCB analytical methods beginning on Page 58 of the fact sheet should include EPA Method 1628. This is a PCB congener method which was published in July 2021 and which has undergone multi-laboratory validation, although it has not yet been approved under 40 CFR Part 136 for use in NPDES permit compliance monitoring.<sup>7</sup>

### Technical Calculations

There are errors and inconsistencies in the PCB reasonable potential and effluent limit calculations in Tables D-5 and D-6. Specifically, as Brian Nickel of my staff discussed with you on January 25, 2022, the effluent concentrations of PCBs in Table D-5 were labeled as having units of µg/L, but the listed values are expressed in units of pg/L. Assuming the effluent PCB concentrations in table D-5 are accurate except for the mismatched units, these concentrations should be a maximum or 95<sup>th</sup> percentile of 0.000643 µg/L and a 50<sup>th</sup> percentile of 0.000265 µg/L.

In addition, the receiving water concentrations of PCBs differ between Tables D-5 (the reasonable potential analysis) and D-6 (effluent limit calculation). In Table D-5, the 90<sup>th</sup> percentile and geometric mean PCB concentrations are listed as 0.000374 and 0.000199 µg/L, respectively, whereas in Table D-6, the 90<sup>th</sup> percentile and geometric mean PCB concentrations are listed as 0.00011 µg/L and 0.000028 µg/L, respectively. Please verify that the background concentrations of PCBs used in reasonable potential and effluent limit calculations are correct and consistent. Please also list the background PCB data and its source(s) in Table 4 of the fact sheet.

## Draft Permit

### Monitoring Requirements

The fact sheet states, on Page 58, that “Ecology has specified Method 1668 to evaluate BMP effectiveness in this proposed permit...” EPA notes that the permit requires monitoring of the influent for PCBs, using Method 1668. In the Permitting Recommendations for the Spokane River Watershed submitted to Ecology on July 13, 2015, EPA recommended that Ecology require monitoring of the final effluents of POTWs for PCB congeners using EPA Method 1668C at least quarterly. EPA continues to

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<sup>5</sup> <https://www.epa.gov/sites/default/files/2019-02/documents/guidance-implement-methylmercury-2001.pdf>

<sup>6</sup> <http://srrttf.org/wp-content/uploads/2012/07/SRRTTF-MOA-Final-1-23-2012.pdf>

<sup>7</sup> <https://www.epa.gov/cwa-methods/pcb-congeners-low-resolution-gc-ms-method-1628-not-yet-approved>

recommend this effluent monitoring to evaluate the effectiveness of both source control BMPs and treatment and to quantify PCB loadings from point sources.

EPA also recommends that the permit specify that a “sufficiently sensitive” method be used for determining compliance with effluent limits for total PCBs, instead of specifying the use of EPA Method 608.3. Currently, Method 608.3 is the most sensitive EPA-approved analytical method for PCBs and is therefore currently “sufficiently sensitive” as per 40 CFR 122.44(i)(1)(iv). However, a more sensitive method such as EPA Method 1628 may be approved for compliance purposes during the term of the permit. Requiring the use of a sufficiently sensitive method would require the permittee to switch to a more sensitive method if one is approved during the permit term, rather than continuing to use Method 608.3 until the permit is modified or reissued.

The sediment monitoring requirements appear in the draft permit twice, starting on Page 50 and once again on Page 53. Please delete the repeated language.

### Best Management Practices and Implementation Plan

EPA supports the requirement in this section to operate the “next level of treatment” (NLT) upgrade year-round. EPA expects this will result in reduced discharges of PCBs and other particulate and particle-bound pollutants in the winter when phosphorus effluent limits are not in effect.

For any questions or concerns with EPA’s comments on Ecology’s draft permit for the Spokane RPWRF, feel free to contact Brian Nickel of my staff at 206-553-6251 or [Nickel.Brian@epa.gov](mailto:Nickel.Brian@epa.gov).

Sincerely,

Susan Poulson, Section Manager  
NPDES Permitting Section

cc: Adriane Borgias, Ecology ERO (via e-mail)  
Karl Rains, Ecology ERO (via e-mail)