Appendix F: Response to Comments

Summary

On May 15, 2024, the U.S. Environmental Protection Agency Region 10 (EPA) issued a public notice for the draft Spokane and Little Spokane Rivers Polychlorinated Biphenyls Total Maximum Daily Load. The public comment period closed July 15, 2024.

The EPA has organized this document by comment letter and attachments. When multiple commenters submit the same comment, the EPA has cross-referenced to other responses to direct elsewhere. In some cases, other responses in this document not cross-referenced may also be responsive to comments. The EPA attempted to include the complete comments in this response to comments. However, in some cases, EPA did not include figures and tables, numbers and bullets, or portions of comments that provide background but were not necessary for the EPA to provide a response to the full comment. The full comments can be viewed at https://www.epa.gov/tmdl/spokane-river-pcb-tmdls.

For the ease of the reader, the EPA is providing a list of some of the most frequently cross-referenced comments.

Comment	General Topic
2.2	Washington-Idaho river boundary condition concentrations
2.3.2, 7.3	Mass balance model technical bases and selection
2.13, 14.6	303(d) listings based on fish tissue
3.1.1	Attainability of allocations and technological limitations
3.1.2	Wasteload allocations and laboratory methods
4.3, 5.2, 7.2.3, 14.10	EPA actions related to TSCA
4.10, 16.4	Allocation approaches, implementation actions, and reasonable assurance
16.10	Variances

The EPA received comments from the following:

Avista
Hayden Area Regional Sewer Board
Idaho Department of Environmental Quality
Inland Empire Paper Company
Liberty Lake Sewer District
National Council for Air and Stream Improvement, Inc
Northwest Pulp and Paper
City of Post Falls Public Works Department
City of Spokane Public Works

Spokane County Public Works
Spokane Riverkeeper
Washington Department of Ecology

This document presents the comments received and provides corresponding responses to those comments.

1 Avista

1.1 Comment:

Avista appreciates the opportunity to provide comments on the draft Spokane and Little Spokane Rivers Polychlorinated Biphenyls Total Maximum Daily Loads (TMDL). Our comments are provided below.

Section 3.1 - Overview of PCB Sources - The second sentence of the second paragraph of the draft TMDL indicates a large volume of PCB-containing transformers were present in the watershed. As currently drafted, Section 3.1 states:

"For decades, electric utilities such as Avista Utilities, Inland Power and Light, and others deployed tens of thousands of transformers collectively containing hundreds of thousands of gallons of insulating oils with high concentrations of PCBs throughout the Spokane River basin."

As a utility we aren't aware that large a quantity of transformers ever existed in the watershed and question whether EPA's source of information is accurate. In 2015, the Washington Department of Ecology (Ecology) surveyed Avista and other electric utilities and created an inventory and current state of PCBs in electrical equipment. This information was consolidated into Ecology and the Washington State Department of Health's 2015 Chemical Action Plan (Publication No. 15-07-002) which provides on page 51,

"It is not appropriate to use national estimates or estimates from other regions for Washington State. Compared to other regions of the country, public utilities in Washington State have been the most progressive in testing equipment for PCBs and disposing of equipment with PCBs (Mark Pennell, personal communication)."

Response:

The EPA made the following changes to the text to include a citation supporting the estimated number of transformers in the watershed: "The 2016 Magnitude of Source Areas and Pathways of PCBs in the Spokane River Watershed (LimnoTech) identified 56,817 transformers operated and maintained by Avista, Inland Power and Light, Vera Water and Power, and Kootenai Electric Company over several decades. The EPA estimated that if there were 4.5 gallons per transformer, there would be around 250,000 gallons of insulating oil in the watershed."

The EPA has concluded that the statement in the proposed TMDL document referencing the estimated number of transformers in the watershed is accurate. The quote provided from the 2015 Ecology PCB Chemical Action Plan (CAP) citing personal communication from Mark Pennell refers to estimating PCB transformers still in use in Washington circa 2015 and as commentary on the efficiency of PCB containing transformer removal efforts by Washington utilities. The

comment in the CAP was not in reference to peak PCB transformer deployment during the period from 1929-1977.

1.2 Comment:

In addition, the second paragraph describing potential electrical utility sources of PCBs should also be revised to align with the 2016 Magnitude of Source Areas and Pathways of PCBs in the Spokane River Watershed (LimnoTech) and the 2016 Comprehensive Plan to Reduce Polychlorinated Biphenyls (PCBs) in the Spokane River (LimnoTech), both prepared for the Spokane River Regional Toxics Task Force (SRRTTF). For example, the draft TMDL report should reflect language from both these documents (page 7 and 19, respectively) which clarifies that by the end of 2016, Avista will have no detectable levels of PCBs in their overhead transformers.

Response:

The EPA has added language to Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document that notes improvements that dischargers have made to reduce PCBs levels in their discharges. Regarding language in two reports, which states that Avista will not have detectable levels of PCBs in their overhead transformers, the full quote from the SRRTTF reports is that "by the end of 2016, Avista will have no detectable levels using EPA test method 8082 of PCBs in their overhead transformers." The EPA notes the importance of including the full quote, since test method 8082 is in the high parts-per-trillion range.

1.3 Comment:

Also, the draft TMDL states: "The sheer number of transformers resulted in a large number of small spills that, at the time, were often treated no more seriously than any other small oil spill. Larger spills, such as when transformers failed catastrophically or during their decommissioning and removal, were also not uncommon …"

Again, Avista questions the accuracy of this statement. What is its source?

Avista implements an aggressive spill policy for discovering, reporting, mitigating, and removing oil spills. The spill response policy requires employees to respond and notify environmental staff immediately upon discovery, 24 hours a day, 7 days a week via a spill phone number. The purpose of this policy is to mitigate the potential of PCB- containing oil spill (or any petroleum product release) from damaging human health and the environment according to 40 CFR 761 (Toxic Substances Control Act, Subpart G "PCB Spill Cleanup Policy") and Ecology's Model Toxics Control Act (MTCA [Chapter 173-340 WAC]) spill response and reporting guidance. In addition, utility groups such as the Northwest Public Power Association have been collaborating with

member electric utilities for over 30 years regarding the best practices for spill response, PCB/hazardous waste management and emerging environmental concerns. These steps have been beneficial in coordinating with state and federal agencies to improve various utilities best management practices to address spill and reporting requirements.

Response:

The EPA acknowledges the comment on the statement in the TMDL document and has amended it to now read "The sheer number of transformers likely resulted in a large number of small spills and some larger spills, if they failed catastrophically or during their decommissioning and removal. After the TSCA ban on PCB manufacture, these spills likely declined." The EPA appreciates Avista's spill policies designed to protect human health and the environment and has added this information to Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document.

1.4 Comment:

Section 3.1.2 – PCB Contaminated Industrial Sites and Section 3.1.6 – PCB- Contaminated River Sediments. Text in both these sections should be revised to more correctly describe responsibility for the Spokane River Upriver Dam and Donkey Island Site (Site). For example, in 2001 the (sic) Ecology named four potentially liable parties (PLPs) for the Site. One declared bankruptcy in 2002 and the other two chose not to participate in the cleanup. Avista Development was the only PLP who signed the Consent Decree. It successfully completed remedial construction in 2006, followed by post-construction monitoring in 2008 and 2010. Ecology monitored the Site in 2020 and in its most recent (2022) 5-Year Review determined that the cleanup remedy continues to be protective of human health and the environment. The next Site monitoring is currently scheduled for 2025. The Site will also be monitored when flows in the Spokane River reach a 50-year or higher flood event.

Response:

The EPA acknowledges this comment but disagrees that this level of detail is necessary or appropriate for the TMDL project. The existing language meets the intended purpose of simply identifying cleanup sites and responsible parties. The TMDL project itself does not impose requirements on any of the referenced parties.

1.5 Comment:

In addition, the text in Section 3.1.2 should be revised to clarify Avista's connection to the PCB contamination at the Site. As currently drafted, Section 3.1.2 states "Avista operations are associated with PCB pollution upstream of the Upriver Dam (RM=80.2) and Donkey Island." This statement may suggest to some that PCB releases to the Site resulted from Avista's utility operations. This is not accurate. Avista Development was identified as potentially liable for the

Upriver Dam and Donkey Island Site because PCBs were found in samples collected in the mid-1990s from effluent and sediment in an oxidation ditch at the Spokane Industrial Park (SIP). The U.S. government built the SIP as the Naval Supply Depot during World War II and owned the SIP property until 1960. The Naval Supply Depot handled a variety of materials that likely contained PCBs. The Depot also discharged wastewater to the Spokane River.

The mid-1990s sampling point was downstream from the junction of the SIP's discharge and that of a neighboring facility, so whether the PCBs came from one of the tenants at the SIP or from the neighboring facility was never determined. When the samples were collected, wastewater from the SIP was sent to the City of Spokane wastewater treatment system. It was not discharged to the Spokane River.

A company called Pentzer Development Corporation (Pentzer) owned the SIP at the time the samples were collected. Pentzer sold its interest in the SIP in 1996. In 1998, Pentzer merged with Avista Development. As a result of the merger, Avista Development assumed the liabilities of Pentzer.

No Avista utility operations ever occurred at the SIP. There is no evidence that Avista's operations contributed in any way to PCB contamination at the Upriver Dam and Donkey Island Site. For these reasons, we suggest that the sentence in Section 3.1.2 quoted above be revised to read as follows:

"Avista Development, Inc. was identified as potentially liable for PCB pollution upstream of the Upriver Dam (RM=80.2) and Donkey Island after it merged with another company that had owned the Spokane Industrial Park (SIP) when PCBs were detected in effluent and sediment from the SIP. The source of these PCBs is unknown."

In addition, the sentence immediately preceding the one discussed above should be revised to read as follows:

"These include sites presently or previously owned or occupied by Avista Development, Inc., General Electric Co., Spokane Transformer Co., and Kaiser Aluminum that have been shown to be contaminated with legacy PCB pollution."

Response:

The EPA has revised Section 3.1.2 of the TMDL document (PCB Contaminated Industrial Sites) to properly identify Avista Development, Inc. as the entity responsible for cleanup at these sites. Additional descriptive language about a merger was not included in these edits, because this level of detail is unnecessary for the purpose of identifying the responsible party.

1.6 Comment:

Section 3.1.6 – PCB-Contaminated River Sediments. The last paragraph of this section currently includes the following sentence: "However, reductions of water column PCB concentrations to below applicable water quality criteria (WQC) is expected to be a methodical and incremental process even in the most ideal case and will likely unfold over years if not decades of sustained effort." This sentence should be revised to clarify that "decades to centuries of sustained effort" would be required to achieve these WQC. For example, as summarized in Table 20 of the draft TMDL, a 99.4% reduction in surface water PCB concentrations at the Spokane Tribe reservation would be necessary to achieve the WQC of 1.3 picograms per liter. Monitoring data compiled by the SRRTTF and summarized in the draft TMDL indicate that little or no measurable reduction of surface water PCB concentrations has occurred in the Spokane River over the past decade. In other areas of the Pacific Northwest such as Commencement Bay where sustained, aggressive PCB source control efforts have been underway for decades, PCB concentrations in receiving waters have been reduced approximately 30 to 50 percent per decade (https://www.nws.usace.army.mil/Missions/Civil-Works/Dredging/SMARMs/). If similarly aggressive source control efforts are to be implemented throughout the Spokane River watershed, WQC at the Spokane Tribe reservation will need 80 to 160 years to be achieved, and likely at a massive cost to local and regional communities.

Response:

The EPA declines to make the suggested edits and disagrees that the TMDL document should be edited to adjust this general and approximate duration. The TMDL project is not an implementation plan and the referenced duration is provided simply for context. However, the EPA acknowledges the challenges surrounding implementation of the TMDL, and the referenced TMDL language reflects the understanding that achieving water quality standards will require a considerable, long-term effort. Regarding feasibility of meeting allocations, see response to comment 3.1.1.

1.7 1.7 Comment:

Finally, the reference to "Avista Corporation" at the top of page 31 (Section 3.1.6) is incorrect. As explained above, the Avista entity that conducted the cleanup at the Upriver Dam and Donkey Island Site was Avista Development, Inc., not Avista Corporation.

Response:

The EPA agrees and corrected this entity's name in the final TMDL document.

2 City of Post Falls

2.1 Comment:

The City of Post Falls Idaho is an incorporated city with a population of approximately 44,000. Post Falls is located in Kootenai County Idaho within the Coeur d'Alene Urbanized Area. The city owns and operates a publicly owned treatment works (POTW) that serves both the City of Post Falls and the City of Rathdrum. The POTW serves an estimated population of 52,833. The POTW currently discharges through Outfall 001 to the Spokane River pursuant to existing Idaho IPDES Permit ID0025852. The existing Permit became effective on January 1, 2024.

The City of Post Falls is committed to the fundamental goals of the Clean Water Act and improving water quality as a means of protecting public health and supporting a high quality of life for our communities. The city takes seriously our role as a steward of water quality within the Spokane River watershed as demonstrated by completion of regular compliance sampling and reporting, development of various management plans, infrastructure investments to meet current discharge limits, and voluntary participation with the Spokane River Stewardship Partnership and Spokane River Toxics Advisory Committee.

The City of Post Falls intends to continue this stewardship by operating the City of Post Falls Water Reclamation Facility utilizing all necessary staff, equipment, power, best management practices (BMPs) and chemicals to meet applicable water quality discharge limits while employing a sustainable, cost-efficient, and effective treatment methodology.

The city spent considerable time and resources reviewing the Spokane and Little Spokane Rivers Polychlorinated Biphenyls Total Maximum Daily Loads Public Comment Draft (Draft TMDL). As a result, the city would like to provide the following comments related to the draft document.

Response:

Comment noted. The EPA has added information in Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document about the City of Post Falls participation in the Spokane River Stewardship Partnership and Spokane River Toxics Advisory Committee (SRTAC).

2.2 Comment:

At the outset, the city believes that EPA lacks the authority to include the Idaho segments of the Spokane River in the Draft TMDL or, within the TMDL, to propose or specify future discharge requirements for Idaho dischargers regulated by the Idaho Department of Environmental Quality (IDEQ) permitting process. The consent decree under which EPA has proposed the PCB TMDL specifies the segments of the Spokane River in Washington state and

adjacent to tribal lands in Washington as the scope of the TMDL required. EPA's work on the Idaho segments of the Spokane River is unnecessary to comply with the consent decree and is outside of its scope. In addition, the city does not believe EPA has any independent authority under Clean Water Act Section 303 to establish a TMDL for the Idaho segments of the Spokane River or to speak to future permit requirements for Idaho dischargers as the statutory prerequisites for taking such action have not been triggered. Thus, EPA's analysis of and commentary on "the river" or the "watershed" are beyond the scope of its authority in this circumstance. Despite these concerns and objections, the city provides comments pertaining to concerns with EPA's methodology generally and its commentary regarding the Idaho segments and potential sources of PCBs specifically.

Please explain if the full scope of the Draft TMDL is limited to the areas specified in the Consent Decree and thus exclusive of any segments of the Spokane River in Idaho. Please explain if the Draft TMDL either explicitly or implicitly specifies future requirements for Idaho dischargers who are regulated by the IDEQ permitting process.

Response:

The EPA disagrees with the premise of this comment. The geographic scope of the TMDL project is defined in Section 1.2 of the TMDL document, and includes all Washington waters of the Spokane River, including Lake Spokane (also known as Long Lake), from its confluence with the Columbia River to the Washington-Idaho border, and all waters of the Little Spokane River from its confluence with the Spokane River to its headwaters near the Washington-Idaho border.

The EPA is not establishing TMDLs for Idaho waters nor is it enforcing a water quality standard for Idaho waters or setting load allocations or wasteload allocations for any sources contributing to waters in Idaho. Rather, the TMDL project assigns a boundary condition to the river at the Washington-Idaho border, which sets aside a load that is subtracted from the total load entering Washington before calculating the loading capacity. The EPA has clarified that the TMDL project assigns a boundary condition to the river at the Washington-Idaho border in Section 4.2.4 of the TMDL document (Boundary Condition Concentrations in Border Waters). When developing a TMDL's loading capacity, allocations, and margins of safety, the EPA must consider all sources of a pollutant causing or contributing to an impairment to ensure that pollutant loadings are set at levels necessary to attain and maintain applicable narrative and numeric water quality standards. This includes waters from upstream or adjacent jurisdictions.

While this TMDL document neither explicitly nor implicitly "specifies future requirements for Idaho discharges[,]" the EPA notes that Idaho's water quality standards contain narrative provisions that are designed to attain and maintain the water quality in downstream waters,

including those in other downstream states. Specifically, IDAPA 58.01.02.070.08 states that for the protection of downstream water quality, "All waters shall maintain a level of water quality at their pour point into downstream waters that provides for the attainment and maintenance of the water quality standards of those downstream waters, including waters of another state or tribe." The EPA has added this citation in Section 5.10 of the TMDL document (Reasonable Assurance). The EPA also notes that Washington's water quality standards contain narrative provisions that require that "upstream actions must be conducted in manners that meet downstream water body criteria (WAC 173-201A-260)(3)(b)." This TMDL project ensures the attainment of Spokane Tribe of Indian's (Spokane Tribe) PCB's water quality standards at the reservation boundary.

Further, existing regulations provide that Idaho Pollutant Discharge Elimination System (IPDES) permits for point sources must ensure compliance with the applicable water quality requirements of all affected states (40 CFR 122.4(d), IDAPA 58.01.25.103.03)). These requirements for downstream water quality protection in federal and Idaho law apply whether or not there is a TMDL in effect for waters of the other affected state(s). A 1982 memo from Ecology calculated the travel time from the Washington-Idaho border to Nine Mile Falls Dam at RM 58.1 as approximately 55 hours (Ecology 1982, Table 6, Page 17).

Thus, consistent with 40 CFR 122.4(d) and IDAPA 58.01.25.103.03, when IPDES permits for discharge to the Spokane River are reissued, EPA expects that Idaho DEQ will demonstrate that those permits include conditions that ensure compliance with the applicable water quality requirements of Washington and the Spokane Tribe, unless Idaho DEQ can demonstrate that one or both of those downstream jurisdictions are not affected by the permitted discharge. Regarding requirements for Idaho dischargers, see the response to comment 7.5.

Under CWA 303(d) all states, territories and authorized Tribes have the responsibility to assess their waters based on approved numeric and narrative WQS and, if determined to be impaired or threatened, develop TMDLs that will attain and maintain those WQS. In 2014, the EPA published "Protection of Downstream Waters in Water Quality Standards: Frequently Asked Questions." This document states the following:

> *Downstream impacts of upstream uses and criteria should be considered as far downstream as adverse impacts are observed or expected to occur from upstream pollution (including hydrologic flow alteration). Determining how far downstream a loading of pollutants (or effects from hydrologic flows) could affect the attainment and maintenance of water quality standards is case-specific evaluation that depends on a number of variables, including the nature of the pollutants (e.g., fate and transport properties), upstream and downstream flow volumes, inputs*

from other sources/tributaries, and the distance/travel time to downstream water bodies with additional or more stringent criteria and/or uses requiring additional protection.

Ideally, downstream protection should be addressed in water quality standards prior to a TMDL being developed. However, if an established TMDL has already identified the pollutant loading rates not to be exceeded in a particular upstream water body segment or tributary in order for a downstream water body to attain water quality standards, this can provide useful information when considering what uses and criteria in upstream waters will provide for the attainment and maintenance of the water quality standards of downstream waters.

This TMDL project is consistent with the above-referenced guidance and with federal and state law.

2.3 Comment:

The U.S. EPA published the Polychlorinated Biphenyl (PCB) Total Maximum Daily Load (TMDL) Handbook in December 2011 (TMDL Handbook). Section II of the handbook discusses the scale at which PCB TMDLs should be developed. The TMDL Handbook utilized the Delaware River Estuary as an example for scale development indicated a distinct TMDL was established for each of five riverine zones of the Delaware River Estuary "in order to account for the variations in PCB concentrations throughout the estuary."

Complexity also exists within the Washington segments of the Spokane River including gaining and losing reaches of the river via interaction with the Spokane River Rathdrum Prairie Aquifer within Washington, sediment impoundments behind the Upriver Dam and Nine Mile Dam, and industrial and remediation site inputs from legacy contamination and possibly yet to be identified legacy sources.

Complexity throughout the Washington segments of the Spokane River, the immeasurably low levels of PCBs in the upper segments of the study area, and variability observed in semi-quantitative sampling events would suggest the need for a more complex analysis than the selected conservative mass balance approach utilized in the Draft TMDL. While the Draft TMDL lists simplicity and lower resource needs as advantages of this approach (pg. 37) the reality is that the situation is not simple and requires adequate resources to be invested to make sound regulatory decisions.

Response:

The EPA disagrees that more complex analysis is necessary for this TMDL project. Regarding the complexity of the problem and use of a mass balance approach, see response to comment 2.3.2.

2.3.1 Comment:

Please explain if EPA staff discussed the time and resource needs necessary to complete a TMDL that accounts for the complex fate and transport of PCBs in the sections of the Spokane River covered in the Consent Decree. If so, what were the estimated time needs?

Response:

EPA staff did not develop specific time estimates for that technical work. However, the EPA had adequate time and resources to develop a scientifically valid method in the TMDL project that adequately accounts for the fate and transport of PCBs.

2.3.2 Comment:

Please explain on what factual and technical basis was the conservative mass balance approach selected to allocate PCB loadings in the Draft TMDL required by the consent decree.

Response:

The considerations for choosing the simple mass balance approach were described in both the TMDL document (Section 4) and the modeling Quality Assurance Project Plan (QAPP). In the TMDL document the EPA identifies the following key advantages of this approach:

- Reasonable approach for a pollutant (PCBs) that is persistent in the environment and undergoes chemical transformations slowly;
- Provides environmentally conservative approach that provides an inherent margin of safety (MOS);
- Allows simple spreadsheet calculations that stakeholders can readily understand and reproduce;
- Requires fewer agency staff resources and contract funds.

In the QAPP, the EPA listed the following factors that may influence the selection of a model framework as follows:

- fit between model capabilities and project needs;
- capability to simulate all processes of interest;
- familiarity of model developers with the tool;
- complexity of the problem/tool/products;
- data needs relative to available data.

The QAPP also noted: “For this project, it is not expected that a complex mechanistic model is necessary to support a TMDL, nor is it clear that the available data would support the necessary model inputs, parameters, and knowledge of system dynamics for PCBs. Previous TMDLs for PCBs in rivers in Washington were based on simple mass balance assignment of allocations.”

2.4 Comment

Section II of the handbook discusses source identification and directs TMDL writers to consider sources indicating “A PCB TMDL can more quickly guide cleanup if a localized source or sources are determined to be affecting the waterbody.”

Whereas PCB concentrations appear to spike between Barker Road and Upriver Dam based on semi-quantitative sample events conducted as part of a source identification effort. Please explain if EPA completed an analysis regarding localized source identification efforts in this area as part of the early stages of TMDL development.

If source identification efforts were completed what were the results of the analysis? If source identification efforts were not completed why not? If localized sources of PCBs are identified within Washington segments of the Spokane River, please explain what remediation tools or legal authorities are available to control the sources with the goal of further PCB concentration reductions through completion of additional cleanup efforts.

Response:

The EPA documented all the source analysis for this TMDL project in the mass balance modeling appendix, and the modeling analysis is localized to the extent feasible based on the available data. This work builds upon the sampling information and analyses produced by the SRRTTF and entities that contributed to its products. The EPA did not conduct source identification monitoring for the TMDL project and relied on existing data.

The EPA has added information on past and current implementation in Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document.

2.5 Comment:

Post Falls understands the Draft TMDL has been prepared to satisfy requirements of Consent Decree C11-1759BJR with the requirement to be complete by September 30, 2024. Section 3 of the Consent Decree allows for an extension of the deadline if requested by EPA for extensions of a limited timeframe or longer if both Parties agree.

Please explain if EPA have staff discussed requesting an extension to the September 30, 2024 deadline for any purpose. Please explain if EPA staff have discussed requesting an extension to

the September 30, 2024 deadline in order to complete a TMDL that accounts for the assimilative capacity or other issues related to the fate and transport of PCBs in the sections of the Spokane River covered in the Consent Decree. If not, why not? Please explain if the Parties to the Consent Decree have discussed extending the September 30, 2024 deadline.

Response:

The EPA exercised an option in the Consent Decree for a 30-day extension in order to respond to comments, complete internal review, and make any changes to the final TMDL document as a result of comments. The EPA is not seeking an extension for work related to assimilative capacity or other issues related to the fate and transport of PCBs, because the TMDL's technical approach is a robust approach for developing loading capacity and allocations that meets water quality standards. Regarding questions on model assumptions and approach, see responses to comments 2.3.2 and 7.3. The EPA has not sought additional extensions because it will complete the TMDL project by October 30, 2024.

2.6 Comment:

The data used by the EPA for this Draft TMDL has been either provided by the Spokane River Regional Toxics Task (SRRTTF) or collected by other agencies using Quality Assurance Project Plans (QAPPs) with very similar data objectives. The purpose of these data collection efforts was expressly limited to identifying the relative magnitude of PCB contributions from various sources. Specifically, the SRRTTF QAPP states, "these data will be used to support a semi-quantitative low-flow mass balance assessment and assess the seasonal variability of upstream loads to the Spokane River." (emphasis added).

The proposed quantitative use of the data to assign any WLA or LA to specific entities, and especially to an upstream state, is an irresponsible misuse of the data. If a field measurement cannot be quantified, it stands to reason a precise decrease from that number also cannot be quantified. This is especially true in the upstream reaches of the study area where the differences between blank samples and river samples are nearly indecipherable. SRRTTF made a conscious decision to proceed with their efforts knowing that more precision would be possible at downstream locations where a stronger signal to noise ratio was possible. Therefore, the use of this data is inappropriate for making calculations in the development of a TMDL.

Context on the use of SRRTTF data quality can be found in the meeting notes at the following URLs:

http://srrttf.org/wp-content/uploads/2012/10/SRRTTF-Meeting-Summary-6-18-14-final.pdf
http://srrttf.org/wp-content/uploads/2012/10/7-23-14-SRRTTF-Meeting-Summary-Final.pdf

As the magnitude of the Idaho contribution of PCBs to the Spokane River cannot be quantified, it should be assumed to be negligible for the purposes of this TMDL.

Response:

Regarding the use of SRTTF data to develop the TMDL allocations, the EPA disagrees. See responses to comments 8.5.1, 8.5.4 and 8.5.5. Regarding Idaho contribution of PCBs to the Spokane River, the EPA disagrees. The available information indicates that it is inappropriate to assume negligible contributions from Idaho. For additional details on sampling methods, precision, and use of sampling information in the TMDL document, see responses to comments 2.18, 7.6, and 8.5.

2.7 Comment:

EPA has based the analysis within the Draft TMDL on a false premise that PCBs are a conservative pollutant through the river system. This means EPA assumes that each PCB molecule entering the river remains suspended in the water column throughout the entire downstream river, not settling, not interacting with sediments or aquatic life (including fish), and even after passing through any distance of the Spokane Valley Rathdrum Prairie Aquifer. EPA's assumption contradicts established science that PCBs are hydrophobic, bio-accumulative, and readily bind to small particulates. There is no scientific rationale to support EPA's simplistic assumption. The Draft TMDL discusses this decision on page 37, eventually concluding with a decision to use a "simple spreadsheet" requiring "fewer agency staff resources" to conduct the required analysis.

The Draft TMDL asserts the conservative mass balance approach provides an inherent margin of safety. Perhaps theoretically accurate, this presents a wildly over-simplistic view of watershed toxics fate and transport. If the assumption were true, PCBs would need to be regulated in every stream contributing to every water body listed for PCBs contamination throughout the nation. Further, if PCBs were truly conserved in the water column, there would be no uptake by aquatic life. Specifically, there would be no uptake by fish and therefore no need for this TMDL.

Ignoring the assimilative capacity of the river segments covered by this Draft TMDL, toxics source hot spots, sediments, and aquifer dynamics is an arbitrarily simplistic decision with major ramifications for the conclusion of the study.

Response:

The EPA disagrees with the premise of this comment. The EPA is not claiming that "each PCB molecule" entering the river remains in the river but uses this conservative assumption to ensure that water quality standards will be met, as well as providing clear, easy-to-understand water quality goals and allocations for the public and regulated entities. In addition, the

comparison of 2014 mass balance model estimates to measured PCB concentrations in the river demonstrates that PCBs discharged to the river are generally conserved in the water column, and that the model is reasonably capturing the assimilative capacity of the river for PCBs. As noted in the TMDL, the TMDL project uses an implicit MOS using conservative assumptions. The principal conservative assumption is that total PCBs released into the river will flow downstream with no loss of instream PCBs due to mechanisms such as settling, volatilization, biological uptake, and chemical breakdown. Regarding sediments and aquifer dynamics (groundwater), see responses to comments 7.3.3 and 7.3.2, respectively. See also responses to comments 2.7.1 and 2.7.2.

2.7.1 Comment

The commenter requests that the EPA conduct the appropriate studies to understand the assimilative capacity of the river segments covered by this Draft TMDL.

Response:

The EPA disagrees that further studies are necessary to understand assimilative capacity. The EPA's mass balance analysis is an appropriate study to understand the assimilative capacity of the river. Regarding modeling assumptions and rigor, see responses to comments 2.3.2 and 7.3.

2.7.2 Comment:

The commenter requests that the EPA incorporate information gained from an understanding of assimilative capacity to more appropriately allocate loads to entities within the river segments covered by this Draft TMDL. Should additional time be required to complete the appropriate studies, EPA should propose an extension to the Consent Decree deadlines per the procedures outlined in the decree.

Response:

The EPA disagrees that further studies are necessary to understand assimilative capacity. The TMDL allocations are appropriately aligned with the understanding of assimilative capacity represented in the mass balance analysis. Regarding further modeling for assimilative capacity and other studies and a request for an extension to the Consent Decree, see response to comment 2.5.

2.8 Comment:

EPA indicates in section 3.1.4 of the Draft TMDL "Sewage treatment plants and POTWs receive residential, commercial, and some industrial wastewater that contains both legacy and inadvertent PCBs, though their PCB treatment levels have dramatically increased as an added benefit from upgrades many made to comply with the 2010 Spokane River dissolved oxygen TMDL."

The use of the phrase “PCB treatment levels” is generally inappropriate. While bench scale and pilot studies have been conducted, the City is unaware of any large-scale treatment technologies implemented by a POTW for the purpose of specifically treating for PCBs.

The statement does correctly note the facility upgrades which have been made to comply with the 2010 Spokane River dissolved oxygen TMDL; Post Falls appreciates the use of the general word “upgrades.” Secondary treatment has been shown to effectively reduce PCB concentrations by 90-99%. Comparing PCB effluent concentrations prior to and following next level treatment upgrades appears to show there may be the potential for further reductions in total PCBs concentrations after completion of upgrades. What remains unknown is the effectiveness or efficiency of the various types of next level treatment at reducing PCB concentrations, particularly where, as noted, no known technology exists for PCB removal and reduction at a POTW required to implement secondary treatment. A wide variety of treatment methodologies and technologies have been implemented by facilities for the purpose of meeting the Spokane River dissolved oxygen TMDL including membrane bioreactors, solids contact clarifiers, ultrafiltration pressure membranes, and inclined plate clarifier technologies. None of these technologies are designed specifically for PCB treatment or removal.

As no comparative analysis has been completed, it would be inappropriate to go beyond a general statement that facility upgrades may further reduce PCB concentrations beyond that observed during secondary treatment or treatment designed to address dissolved oxygen. It would also be inappropriate to direct facilities as to which technologies they should be operating for PCB removal without further analysis.

Response:

The EPA agrees with the commenter’s assertion that the phrase “PCB treatment levels” is inappropriate and has changed this phrase to simply “treatment levels.” The EPA notes the comment that the City of Post Falls agrees with the term upgrades. Regarding treatment technologies, see response to comment 3.1.1. The TMDL document does not direct facilities as to what technologies they should be operating for PCB removal, nor do the statute or regulations require that TMDL documents include this information.

2.8.1 Comment:

Please explain if EPA is aware of any published and peer-reviewed comparative analysis evaluating the relative effectiveness of PCB concentration reductions through various tertiary treatment technologies such as membrane bioreactors, solids contact clarifiers, ultrafiltration pressure membranes, and inclined plate clarifiers. Please provide any specific scientific studies or analyses used by EPA in developing the Draft TMDL.

Response:

The EPA has not researched the relative effectiveness of PCB concentration reductions through various tertiary treatment technologies for the purposes of this TMDL document. However, the EPA notes that tertiary treatment in several wastewater treatment plants in the Spokane Watershed have greatly reduced PCB levels in their discharges. See response to comment 3.1.1.

2.8.2 Comment

Revise the statement in the Draft TMDL to read: "Sewage treatment plants and POTWs receive residential, commercial, and some industrial wastewater that contains both legacy and inadvertent PCBs. Treatment plants and POTWs have been shown to be effective at reducing PCB concentrations through the treatment processes designed and installed for secondary treatment or other non-PCB specific reasons. Many facilities completed a variety of upgrades to comply with the 2010 Spokane River dissolved oxygen TMDL. These upgrades are not designed for PCB treatment or removal although in some cases such technology may be providing additional reductions in PCB concentrations benefiting water quality as compared to before the upgrades were complete."

Response:

The EPA agrees that PCB removal was not a design goal for these treatment systems and has changed Section 3.14 of the TMDL document (NPDES Permitted Wastewater) to clarify that the existing tertiary treatment was not specifically designed to remove PCBs.

2.9 Comment:

In section 3.1.6, EPA has concluded that no PCBs are removed when water flows through the "Rathdrum Aquifer" due to "paucity" of "fine-grained sediments". This is not borne out by any data. In fact, WA Department of Ecology sampled several wells and springs for PCBs in 2015, including locations expected to be influenced and locations not expected to be influenced by historical industrial contamination. One of these samples was at Idaho Road, an area of the aquifer largely fed by the Spokane River in Idaho. This sample did not detect PCBs using method 1668c. While one semi-quantitative sampling event is hardly conclusive, the implication is clear: the aquifer does indeed filter PCBs.

Response:

The EPA has not made the conclusion paraphrased by the commenter. Section 3.1.6 of the TMDL document (PCB-Contaminated River Sediments) describes the process of PCB adsorption to suspended fine sediments in the river, not removal of PCBs in the aquifer. We have edited the language to clarify this description.

2.10 Comment

Revise the Draft TMDL to properly account for a different level of PCBs entering the river through groundwater. This should be done with careful consideration of localized information, such as where there is no historic industrial contamination.

Response:

The TMDL document properly accounts for PCBs entering through groundwater. Regarding groundwater in the model, see responses to comments 7.3.2 and 12.16.

2.11 Comment

Consideration should especially be given to the losing reach of the Spokane River immediately downstream of the Idaho state line and the implications on downstream water quality.

Response:

The mass balance model includes the effect of flow reduction in the losing reach on water quality. See also response to comment 7.3.2.

2.12 Comment

The TMDL should be revised to correctly reference the Spokane Valley Rathdrum Prairie Aquifer.

Response:

The EPA agrees and has changed the reference to “Spokane Valley Rathdrum Prairie Aquifer” in the TMDL document.

2.13 Comment:

EPA has relied on the WA Department of Ecology 303(d) listing of the Spokane River at the state line. Water quality data, including data used in the TMDL, show this is unlikely a realistic description of the PCBs issues within the Spokane River.

All water quality measurements at or above Barker Road in Washington have shown the Spokane River to be at essentially background levels for PCBs. A major increase in water column concentrations is observed downstream of these locations and above Upriver Dam. WA Department of Ecology listed the water body for PCBs using fish tissue studies only, as the detection limits for water column PCBs are not sufficiently sensitive to quantify and PCBs which are present.

Utilizing only fish tissue samples for comparative analysis of river segments throughout a watershed, especially where a conservative mass balance approach is proposed, is inappropriate. Fish swim. Fish are known to migrate up and down stream throughout the year. It does not make sense for fish to have high levels of PCBs in their tissue if there is no source of

PCBs. In this case the explanation is straightforward, fish harvested for the water quality assessment were likely influenced by the higher levels of PCBs downstream of Barker Road and are not reflective of the water quality near the Idaho state line.

WA Department of Ecology anticipated this would be a difficulty in using fish tissue as a screening tool. In Water Quality Program Policy 1-11, which describes the methodology used to assess impaired water bodies for 303(d) listings in WA, Ecology states, "It should not be interpreted that the displayed stream reach or grid cell AU represents the true spatial extent of a harvest use impairment. This would require additional study, such as through a TMDL." In this Draft TMDL, EPA has failed to conduct the additional study necessary to determine the true spatial extent of the impairment.

The city requests EPA to acknowledge the serious issues with utilizing only fish tissue studies from one POTW on a Washington state segment of the Spokane River to estimate water column PCB concentrations. These limitations and resulting unfounded assumptions should be explicitly stated in the TMDL.

EPA should conduct the appropriate studies necessary to determine the true spatial extent of the water quality impairment and not rely on the illogical conclusions of the fish tissue study.

If the appropriate studies cannot be completed in time to revise the Draft TMDL, the spatial extent of the Draft TMDL should be modified to exclude Washington Assessment Unit WA17010305000012_001_001, from RM 94.8 to 96.3.

Response:

The commenter states that the EPA's reliance on 303(d) listings, which relied on fish tissue studies, is inappropriate because water quality data do not match the impairment determinations made from fish tissue data and that additional studies should be completed to understand the spatial extent of the impairment. The commenter further questions the validity of Ecology's impairment listings based on fish tissue. Lastly, the commenter states that the Washington AU from RM 94.8 to 96.3 should be excluded because though fish tissue data show impairment, water quality data does not because PCB levels are essentially at background concentrations.

Regarding EPA's reliance of 303(d) listings based on fish tissue and its relation to water quality data, the EPA disagrees with the commenter. Section 303(d) of the Clean Water Act requires that TMDLs be completed for waters in category 5 of the 303(d) Integrated Report. Therefore, the EPA has appropriately developed the TMDL project to address impaired assessment units in the Spokane and Little Spokane Rivers. Regarding water quality data matching fish tissue data regarding impairments, Section 3.3 of the TMDL document (Current Conditions and Recent

Exceedances) includes recent monitoring data that shows, even when blank censored at 5X, 68.4% of the samples collected from the mainstem Spokane River were above the Washington State water quality standards of 7 pg/L, and 79.7% were above the Spokane Tribe standards of 1.3 pg/L. Therefore, PCB impairments in the Spokane and Little Spokane Rivers are confirmed by both fish tissue and water quality data.

Regarding the validity of Ecology's impairment listing, the EPA disagrees that it may not rely on fish tissue data or impairments based on fish tissue exposure concentrations. States are required to evaluate all existing and readily available information in assessing their waters when developing their 303(d) lists (40 CFR 130.7(b)(5)). Section 1.3.4 of the TMDL document (PCB-Impaired Assessment Units) explains the basis for the PCB listings on the Spokane and Little Spokane Rivers. Ecology compared fish tissue data with tissue exposure concentrations from Chapter 1, Appendix 2, Policy 1-11, using its listing methodology and guidelines from Policy 1-11. Ecology previously determined that 12 segments of the two rivers were impaired for PCBs and continued to list these in Category 5 of its combined 2014-2018 CWA Section 303(d) list. The impaired assessment units do not meet harvesting and/or domestic water supply beneficial uses based on exceedances of the human health criteria. Figure 5 in the TMDL document shows these impaired AUs, and Table 7 shows their associated waterbody identification numbers, jurisdictions, and river mile extents. As stated previously, water quality data further confirm the validity of these listings.

Regarding Assessment Unit 17010305000012_001_001, the EPA has no reason to doubt the validity or scientific basis of Ecology's decision to include this assessment unit in their 303(d) list of category 5 impaired waters. In addition, the Consent Decree for this TMDL specifically lists this assessment unit as one that must be addressed by this TMDL project. Recent monitoring data from RM 90.3 (4.5 miles downstream of AU 17010305000012_001_001) used in the TMDL document to describe current conditions, blank censored at 5X, range from 0.0 pg/L (due to aggressive blank censoring) to 55.6 pg/L, averaging 5.7 pg/L. Similar monitoring data from RM 86.6 range from 0.0 – 195.6 pg/L, averaging 55.4 pg/L. Additionally, recent monitoring data collected by the SRRTTF at Post Falls and the Lake Coeur d'Alene outlet, both several miles upstream of AU 17010305000012_001_001, that were not included in the TMDL document similarly show water column PCB concentrations considerably higher than applicable WQC (https://spokaneriverpcbfree.org/about-pcbs/srrttf-pcb-data-portal/).

The current conditions estimate initially put forth in the public draft TMDLs for AU 17010305000012_001_001 was derived from a linear regression relating Spokane river mile to water column PCB concertation, based on 5X blank censored data collected between RMs 90.3 and 57.8. The EPA recognizes that this relationship is only one way to estimate current PCB

water column concentrations where monitoring data are not available, and has revised the current conditions and necessary reductions estimates for AUs wholly upstream or downstream of Spokane RMs 57.8-90.3. Rather than extrapolating a linear regression, current conditions estimates for these AUs will simply be assigned the immediately downstream or upstream estimate based directly on 5X blank censored monitoring data. Please see revisions to Tables 9 and 20 in the TMDL document.

Additionally, no portion of the consent decree outlining the EPA's responsibilities in issuing these TMDLs would preclude the EPA from including other assessment units in this TMDL project. This means that even if the EPA agreed with the assertion that Ecology had insufficient evidence to list AU 17010305000012_001_001 as impaired by PCBs, the EPA could still require allocations for this AU, if they were needed to restore impaired segments downstream of the AU.

2.14 Comment:

The Draft TMDL has conflicting information pertaining to the spatial distribution of PCBs in the Spokane River. Figure 7, pg 35, depicts the known PCB river monitoring data from 2010 onward. In this figure, PCBs at river mile 90.3 are shown near zero. However, in Table 9, the mean total PCB concentration for river miles 94.8 – 96.3 is listed as 48 pg/L with a footnote that this value is extrapolated from downstream measurements.

The Draft TMDL should be revised to correctly list the near-zero mean PCB value for the first assessment unit listed in Table 9. Based on the near-zero PCBs measured at river mile 90.3, the Draft TMDL should be modified to exclude Washington Assessment Unit WA17010305000012_001_001, from RM 94.8 to 96.3.

Response:

The EPA disagrees that information pertaining to the spatial distribution of PCBs is conflicting. See response to comment 2.13 for additional discussion on spatial distribution and the current water column PCB conditions estimate for AU WA17010305000012_001_001.

2.15 Comment:

The city acknowledges the challenge EPA faces in assigning boundary conditions, wasteload allocations, and load allocations for a water quality standard which is immeasurable and unachievable with today's technology. The city reiterates its comment that EPA does not have authority in the present circumstances to include Idaho segments of the Spokane River in its draft PCB TMDL for Washington state. We nevertheless provide the following technical comments on EPA's approach.

In attempting to meet the requirements of the Consent Decree, EPA concludes the effective water quality criteria at the Idaho state line must be 1.3 pg/L based on the flawed and overly simplistic assumption that PCBs are conserved in the water column and through groundwater. In reality, EPA has not conducted the research to validate this assumption.

In the summer, when the Draft TMDL states PCBs in the water column appear to be at a higher concentration, as much as 75% of the water from the Idaho state line infiltrates into the aquifer. At all times water in the river passes through five reservoirs, over or through five dams, past multiple large tributaries, as it travels over 63 miles to the boundary of the Spokane Tribe's jurisdiction.

EPA has expended no effort to determine the actual assimilative capacity of the river. This blanket assumption may be reasonable for downstream reaches of the river which appear to have levels of PCBs which are significantly higher. However, given the semi-quantitative nature of sampling efforts for this stretch, there is a very real possibility the immeasurably low levels of PCBs entering the Study Area from the Idaho state line could be assimilated by the various components of the river.

The Draft TMDL should be revised to include a study of the fate and transport of PCBs within the watershed.

Response:

The EPA acknowledges the comment on the challenge of developing the TMDL to meet the water quality standard. Regarding the scope of the TMDL and expectations for Idaho, see response to comment 2.2. Regarding the assumptions in the TMDL analysis, the EPA disagrees that its analysis is inadequate. The EPA has evaluated available data and constructed a mass balance model that reasonably estimates the assimilative capacity of the Spokane and Little Spokane Rivers for PCBs based on the best available data. The modeling assessment results support the EPA's assumption that settling behind the dams does not significantly reduce PCBs moving downstream. The model explicitly accounts the loss of river water and associated PCB mass into the aquifer below the state line. See also responses to comments 2.7 and 7.3.

The EPA supports additional study of PCB sources and fate and transport within the watershed, but the currently available data support the EPA's technical approach for the TMDL project.

2.16 Comment:

The city reiterates our belief EPA lacks the authority to include Idaho segments of the Spokane River in the Draft TMDL, or, within the TMDL. The below comment should not be interpreted as sanctioning inclusion of any analysis within Idaho but is made to further point out the severe flaws in the factual and technical basis EPA has used throughout the Draft TMDL.

Consent Decree C11- 1759BJR requires the EPA to develop a TMDL that has the meaning provided at 40 C.F.R. §130.2(i). 40 C.F.R. §130.2(i) indicates a TMDL should be the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background. Since the TMDL required by the consent decree does not include Idaho segments of the Spokane River, EPA's approach to include an allocation for Idaho at the state boundary line is inappropriate.

Response:

The TMDL project set a boundary condition concentrations to the river at the Washington-Idaho border and the groundwater and tributaries at the Washington-Spokane Tribe border. These boundary conditions appropriately account for loads reaching Washington waters. Establishing a TMDL for the Idaho waters is beyond this TMDL project's scope, and therefore the EPA assigned a boundary condition to the river at the Washington-Idaho border in the TMDL document to account for contributions to Washington waters by Idaho waters. For further response regarding the TMDL project scope and Idaho waters, see response to comment 2.2.

Regarding the consent decree, the EPA disagrees with the commenter's description of the consent decree's requirements. The consent decree was not meant to limit the concept of a TMDL to a particular tight reading of 40 C.F.R. 130.2(i). As that regulatory definition is intended to explain and does not, and legally cannot, replace the statutory language in section 303(d) of the Act, the EPA does not and cannot read the consent decree as displacing its legal duty in creating a TMDL with a document that features just a load allocation and wasteload allocation.

The EPA must in addition adhere to the statutory language, "Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality" and relevant caselaw. Because the TMDLs must "be established at a level necessary to implement the applicable water quality standards," the EPA must account for PCBs that cross the border from Idaho.

The EPA also notes that it has not included Idaho segments of the Spokane River in the draft TMDL project but rather has set a boundary condition in the river at the Washington-Idaho border.

2.17 Comment:

Section 3.1.5 of the Draft TMDL covers Atmospheric PCB Deposition. Per section 3.1.5, atmospheric deposition is addressed within the study areas boundary conditions, "In the upper basin, atmospherically deposited PCBs are integrated into the source waters of the Spokane

River flowing from the outlet of Lake Coeur d'Alene and are part of the boundary conditions considerations."

Further in the Draft TMDL, Section 5.2 covers Loading Capacity indicating the sum of load allocations is "the portion of the TMDL attributed to existing and future nonpoint sources and natural background. The loadings associated with tributaries, groundwater, and assigned boundary conditions are included in the total LA loading."

The phrasing within these sections creates ambiguity regarding a difference between "natural background" and the "boundary conditions."

Response:

The EPA is unaware of any mechanism by which PCBs are created naturally and has added in Section 5.2 in the TMDL document (Loading Capacity) that natural background concentrations are zero. All the assigned loadings are to human-caused loadings to tributaries, groundwater and to the river at Washington borders with Idaho and Spokane Tribe.

2.18 Comment:

EPA should use the best available information and conclude the water quality of the Spokane River at the Idaho state line is effectively "background" and therefore negligible for this Draft TMDL. Should EPA believe the boundary conditions of the Spokane River at the Idaho state line differ from a natural background level, EPA needs to explain the factual and technical bases for this assertion. Also, the Draft TMDL should include a definition for each term as well as the quantifiable level for each and rationale used to differentiate the two.

Response:

The EPA agrees that the TMDL project should use best available information, but that is why the EPA concluded that a boundary condition for PCBs to the river at the Washington-Idaho border was necessary. PCB concentrations in the river at the Washington-Idaho state line are higher than the downstream water quality standards and are therefore not "negligible" in the context of these TMDLs. Regarding the concept of natural background levels of PCBs, see response to comment 2.17. Regarding boundary conditions, Section 4.2.4 of the TMDL document (Boundary Condition Concentrations in Border Waters) describes the boundary conditions assigned to the river at the Washington-Idaho border and to tributaries and groundwater at the Washington-Spokane Tribe border.

3 City of Spokane – Cover Letter

3.1 Comment:

The City of Spokane (City) provides the following comments to USEPA's Spokane and Little Spokane Rivers PCB TMDL Public Comment Draft, dated May 15, 2024. While the City supports efforts to protect and improve these natural resources, the process utilized by the USEPA to develop the TMDLs and wasteload allocations is simplistic, highly conservative, and not consistent with the Clean Water Act.

Response:

The EPA disagrees. The TMDL project is consistent with the Clean Water Act. Regarding this statement and the EPA's process to develop the TMDLs and wasteload allocations, see responses to comments 3.1.1 through 3.1.5

3.1.1 Comment:

First, the load and wasteload allocations are not currently attainable and will not be attainable for the foreseeable future.

Response:

As in Section 3.1.6 of the TMDL document (PCB-Contaminated River Sediments) and response to comment 1.6, the EPA acknowledges that the allocations required to attain and maintain applicable water quality standards are low relative to the existing levels of PCBs, and that reaching these levels will require time and numerous actions. The low concentrations are necessitated by water quality standards protecting human health, the persistence of PCBs in the environment, the pollutant's tendency to bioaccumulate, and its toxicity at low levels.

The Clean Water Act requires that TMDLs must be established at levels necessary to attain and maintain applicable water quality standards with seasonal variations and a margin of safety (40 CFR 130.7(c)(1)). This TMDL project sets allocations to meet the applicable water quality standards in the identified impaired segments. As stated in response to comment 7.2.2, water quality criteria for any pollutant that causes a water to exceed water quality standards must be set at a level that attains and maintains a waterbody's designated uses (40 CFR 131.11(a)). Water quality criteria approved by the EPA under Section 303(c*)* of the Clean Water Act are based solely on data and scientific judgments on the relationship between pollutant concentrations and environmental and human health effects and do not reflect consideration of economic impacts or the technological feasibility of meeting pollutant concentrations in ambient water (40 CFR 131.11(a)).

While the EPA recognizes the challenges in meeting the allocations, the TMDL project must be written to attain water quality standards. The EPA notes significant progress is being made in

understanding and reducing PCBs in the Spokane watershed. . For example, source identification and control measures can reduce the PCBs entering the treatment plants, and thereby reduce PCBs in the treated effluent. Section 5.10 of the TMDL document (Reasonable Assurance) describe plans and actions for work towards meeting the load and wasteload allocations as well as a $6.9 million grant to Ecology from EPA's Columbia River Basin Restoration Program for regional planning and implementation work in the Spokane River Basin. See response to comment 16.4 for more information on implementation.

The TMDL document notes that upgrades to municipal and industrial wastewater facilities to meet the 2010 Spokane River dissolved oxygen TMDL project resulted in marked decreases in PCB effluent discharges. In addition, the EPA has added information in the TMDL document on the programs and projects provided by commenters, which show significant progress to reduce PCB discharges to the Spokane River and Little Spokane River. Although the EPA has not conducted studies on technologies to meet the TMDL allocations, the EPA notes the reductions in PCB discharges over the last 20 years in this watershed. In addition, technologies and information on reducing PCBs will continue to improve as this TMDL project is implemented over time.

3.1.2 Comment:

Second, the extraordinarily low wasteload allocation concentration of 1.3 pg/L cannot be measured using any available laboratory method.

Response:

The EPA agrees that existing analytical methods for PCBs cannot accurately measure PCBs at a concentration of 1.3 pg/L. As noted in response to comment 3.1.1, the EPA acknowledges in the TMDL document the challenges of meeting the wasteload allocations. As explained in the responses to comments 3.1.1 and 7.2.2, TMDLs must be established at levels necessary to attain and maintain applicable water quality standards, and those standards are set based solely on environmental risk and are not based on feasibility concerns. It is also common for water quality criteria to be below the detection or quantification limits of approved analytical methods; see the *Technical Support Document for Water Quality-based Toxics Control* at Section 5.7.3. While approved analytical methods must be used to determine compliance with effluent limits in an NPDES permit (40 CFR 122.44(i)(1)(iv)), the sensitivity of approved analytical methods is not a factor in deriving water quality criteria or in developing TMDLs or deriving water quality-based effluent limits from those criteria. The final rule for Washington's human health criteria states, "As a general matter, analytical methods and quantitation limits are subject to change over time. As such, it is important that WQS reflect the necessary level of protection regardless of contemporary limitations of analytical methods" (EPA 2022). The

methodology for calculating numeric human health water quality criteria is described in detail in the EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000)*.

The EPA notes that laboratory methods continue to improve for all pollutants. Specific to PCBs, Appendix D of the TMDL document (Water Quality Monitoring Analytical PCB Methods) describes different PCB methods with lower detection limits and greater sensitivity to congeners compared to the current EPA-approved method for PCBs. While the PCB analytical methods other than Method 608.3 are not approved, they are an example of how methods develop and improve over time.

The EPA notes that PCB levels currently discharged by point sources are above the detection limits of the most sensitive laboratory methods (e.g., EPA Method 1668C), though these methods are not approved under 40 CFR Part 136 for NPDES compliance monitoring. Since reductions in PCBs will require sustained, long-term efforts, as noted in Section 3.1 (Overview of PCB Sources) and Section 5.10 (Reasonable Assurance) of the TMDL document, PCB levels in these discharges will likely be measurable for some time by current laboratory methods.

3.1.3 Comment:

Third, USEPA is not regulating "toxic pollutants in toxic amounts" but instead arbitrarily assumes that all PCBs have the same effect on fish and human health.

Response:

The EPA disagrees that regulating toxic pollutants in toxic amounts, 33 U.S.C. § 1251(a)(3), is the only statutory language relevant to this TMDL project; TMDLs are specifically governed by 33 U.S.C. § 1313(d)(1)(C). TMDLs must be written to attain and maintain applicable water quality standards for a water listed under 33 U.S.C. § 1313(d)(1)(A). Section 2 (PCB Water Quality Standards) and Appendix A (Applicable PCB Water Quality Standards) of the TMDL document describe Washington's and Spokane Tribe's water quality standards for PCBs, which are applicable to the TMDL project. In short, numeric criteria are adopted to protect a designated use, including aquatic life or human health. Human health water quality criteria protect any designated uses related to ingestion of water, ingestion of aquatic organism, or other waterborne exposure from surface waters. Aquatic life water quality criteria are necessary to support any designated uses related to protection and propagation of fish, shellfish, and wildlife. Narrative criteria (such as waters shall be free from toxic pollutants in toxic amounts) can serve as the basis for establishing pollutant or chemical-specific water quality based effluent limitations for wastewater or stormwater discharges where the state or authorized Tribe has not adopted chemical-specific numeric criteria for a specific pollutant (EPA 2017).

Numeric criteria for PCBs set the level of toxicity above which PCBs can harm aquatic life and human health, depending on the type of criteria. The EPA established the TMDL loading capacity and allocations to meet the more stringent of the two criteria, the human health PCB criterion. Because the human health criterion is more stringent than the aquatic life criterion in this case, the TMDL project protects both uses.

3.1.4 Comment:

Finally, USEPA's approach fails to address key sources of PCBs in fish and as a result does not provide a pathway to restoring fishing as a designated beneficial use.

Response:

The EPA disagrees that the TMDL project fails to provide a pathway to restoring fishing as a beneficial use. As explained in response to comment 3.1.3, the TMDL project is written to meet the applicable water quality standards for PCBs to protect human consumption of fish, including from fishing. The TMDL project establishes the levels that must be attained, while the implementation of the TMDL project relies on the work of the sources discharging PCBs. Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document describes some of the implementation planning and actions to reduce PCB discharges.

3.1.5 Comment:

The City understands USEPA has prepared this Draft TMDL, and that the Washington State Department of Ecology will have the responsibility to prepare the eventual Implementation Plan. The City is providing these comments to highlight issues to consider during the TMDL development and implementation process. These comments also incorporate the attached technical memorandum from Dr. Tom McHugh and Ms. Lila Beckley of GSI Environmental, Attachment "A".

Response:

Comment noted.

3.2 Comment:

The City values the Spokane and Little Spokane Rivers and has invested heavily to protect these resources. The City recognizes and values the Spokane and Little Spokane rivers as significant natural resources and is committed to preserving and improving these resources including managing PCB loadings into the rivers. Over the past 10 years, the City has made a generational investment exceeding $450 million in its wastewater/stormwater infrastructure. These investments include:

Improved Wastewater Treatment: In 2021, the City completed an upgrade to the Riverside Park Water Reclamation Facility (RPWRF) including installation of the Next Level Treatment (NLT)

system, a state-of-the-art membrane filtration system that provides tertiary treatment for the City's wastewater effluent prior to discharge to the Spokane River. Due to the very low solubility of PCBs, PCBs in wastewater are almost exclusively bound to suspended particles. As a result, the removal of particles in the treated effluent through microfiltration is a best available technology for removal of PCBs. The City's membrane filtration system (0.1 micron pore size) became fully operational in 2022. The membrane filtration system has a standard operating capacity of 50 million gallons per day (MGD) but can be operated at rates as high as 75 MGD for short periods of time. The RPWRF receives an average flow of approximately 30 MGD, thus, under normal operating conditions, the membrane filtration system treats 100% of the RPWRF influent. As discussed in the technical comments, the PCB concentrations in the treated RPWRF effluent are so low that they cannot be accurately measured. However, based on influent and effluent testing conducted since the installation of the membrane filtration system, the best estimate is that the RPWRF is achieving, on average, over 99% removal of PCBs compared to influent concentrations.

Response:

The EPA appreciates submittal of this information about the City of Spokane's treatment system and estimates of PCB removals by that system. The EPA has added information about the investments and upgrades at the RPWRF to Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document. Regarding PCB concentrations in the treated RPWRF effluent being so low they cannot be accurately measured, the NPDES permits dictate the level that may be discharged and still comply with NPDES permit conditions and requirements. See responses to comments 7.4.1 and 16.9 on options and considerations for NPDES permit conditions.

3.3 Comment:

Improved Management of Combined Sewer Flows: In addition to upgrading the RPWRF, the City has implemented a number of measures to minimize direct discharge of untreated mixed stormwater and wastewater associated with combined sewer overflow (CSO) events. The City has also been working for many years to reduce or eliminate CSO events. The most recent improvements include construction and maintenance of a storage capacity for up to 13 MG of combined sewer flow within the collection system, and operation and maintenance of the sewer network to maximize flow capacity to the RPWRF including routine maintenance to remove debris, roots, and other blockages. In addition, the City has an on-going program to install cured in-place pipe ("CIPP") liners in sewer lines identified to have excess infiltration of groundwater or storm water. These liners minimize infiltration within the rehabilitated sections reserving flow capacity for other inflow sources. Although the number of CSO events varies

from year to year due to variations in total precipitation and storm event magnitude, the City has seen a steady decline in the number and magnitude of CSO events from 2016 to 2023.

Response:

The EPA appreciates submittal of this information about the City of Spokane's actions to reduce or eliminate CSO events and has added this information to Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document.

3.4 Comment:

Identification and Control of PCB Sources: The City has a comprehensive program to identify and control sources of PCBs. The source identification program includes two key elements:

1) Identification of products and industries that are likely to be significant sources of PCBs. From 2014 to 2016, the City conducted product testing programs to measure the PCB concentrations in specific products used by the City. These data are used to shape source control measures discussed below.

2) Analysis for PCBs on wastewater samples collected from key locations throughout the City's wastewater collection system. These data are used to determine which parts of the system receive the greatest inflows of PCBs. Fingerprinting analyses are used to determine what products and/or industries may be contributing to these inflows.

In order to reduce PCB concentrations in the City's wastewater influent, the City has implemented a broad range of source reduction measures including: removal of PCB-containing equipment from City departments; public education concerning PCB sources and control measures; low impact development incentives; procurement practices that support use of "PCB-free" products; green infrastructure projects that, where feasible, eliminate direct discharge of storm water into the Spokane River; and participation in regional initiatives to control migration of PCBs in the environment.

Response:

The EPA appreciates submittal of this information about the City of Spokane's source identification and control activities and has added this information to Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document.

3.5 Comment:

Diverting Direct Stormwater Discharges into Infiltration Basins: The City completed a series of projects in 2015 and 2020, which disconnected the Union Basin stormwater system from discharging directly to the river. This basin was identified in the early 2000s as containing elevated PCB concentrations compared to the rest of the municipal separate storm sewer

system (MS4). These projects converted the basin into an infiltration system, utilizing green infrastructure technologies. The City is also in the midst of bringing online infiltration infrastructure for the majority of the Cochran Basin MS4. The basin is the largest in the City and encompasses an area of approximately 5,160 acres. Once online, the new Cochran treatment facility will vastly decrease the amount of stormwater flows (and associated PCBs) going into the Spokane River.

As a result of public education, source control, treatment, and control actions for wastewater and stormwater, the City has significantly reduced the amount of PCBs entering the Spokane River. The technologies and activities described above constitute best available treatment and management practices to remove PCBs and other pollutants from wastewater and stormwater and to minimize CSO discharges. The City has minimized its discharges of PCBs to the Spokane River to the extent practicable.

Response:

The EPA appreciates submittal of this information about the City of Spokane's stormwater control activities and has added this information to Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document.

3.6 Comment:

The City supports a comprehensive regional approach to management of PCBs in the Spokane and Little Spokane Rivers. Despite the control measures implemented by the City, the City recognizes that the total PCB loading to the Spokane River from all point sources and non-point sources throughout the watershed continues to result in exceedances of water quality standards (WQS) in the Spokane and Little Spokane Rivers. The City agrees that a comprehensive regional approach is needed to continue reductions on PCB loading and improvement in overall water quality. The City was an active participant in the Spokane River Regional Toxics Taskforce (SRRTTF). The SRRTTF led valuable efforts to identify and understand sources of PCBs to the Rivers and developed recommendations for management and reduction of PCB loadings. The City believes that regional efforts such as the SRRTTF are important for continued progress in reduction of PCB loading to the Spokane and Little Spokane Rivers.

Response:

Comment noted. Section 5.10 of the TMDL document (Reasonable Assurance) describes the ongoing effort by the SRTAC started in 2023. The EPA also supports a regional approach, evidenced by a $6.9 million grant to Ecology from EPA's Columbia River Basin Restoration Program for regional planning and implementation work in the Spokane River Basin. See also response to comment 16.4.

3.7 Comment:

Although the City endorses a regional management approach, we have a number of important concerns with the USEPA's proposed TMDL and wasteload allocations. Most importantly, the load and wasteload allocation concentration of 1.3 pg/L, which is applied to all point and non-point sources is so low that it is neither measurable nor attainable. As a result, this effluent concentration and the associated loads and wasteloads do not provide a useful framework for guiding continued progress in reducing PCB loading to the Spokane and Little Spokane Rivers. More details regarding these concerns are provided in the attached technical comments.

Response:

The EPA agrees that the wasteload allocations are not measurable using currently available laboratory methods. The EPA disagrees that the allocations are not attainable and do not provide a useful framework for guiding progress in reducing PCB loadings. Regarding the ability to measure PCB allocations with existing methods, see response to comment 3.1.2. Regarding the attainability of the PCB allocations, see response to comment 3.1.1. Regarding whether the TMDL document is a useful framework to guide progress, achieving reduction in PCBs to attain TMDL allocations will take a collective effort, and entities in the Spokane Basin have made considerable progress in reducing PCB levels, particularly with upgrades to treatment plants. Section 5.10 of the TMDL document (Reasonable Assurance) describes ongoing and future efforts to develop a plan to reduce PCBs. Regarding support of the regional management approach, see response to comment 3.6. See also responses to comments 3.8 through 3.12 regarding detailed concerns on the TMDL project.

3.8 Comment:

Assigning wasteloads for "Total PCBs" exceeds USEPA's Authority under the CWA. The CWA authorizes USEPA to regulate "toxic pollutants in toxic amounts." 33 U.S.C. §§ 1251(a)(3) and 1311(b)(2)(C) and (D). The proposed TMDL departs from this statutory authority by broadly imposing wasteloads for "Total PCBs." As a result, USEPA is effectively regulating all PCB congeners in the City's wastewater discharge equally, regardless of toxicity, persistence or bioaccumulation.

While the CWA refers to the "combination of pollutants" in defining "toxic pollutants" (33 U.S.C. § 1362(13)), as noted above, the plain language of the CWA also directs USEPA to regulate "toxic pollutants in toxic amounts." The agency cannot simply ignore this plain language when it interprets the scope of its authority to develop a TMDL. A great deal has been learned about PCB congeners since 1977 when USEPA adopted the concept of regulating congeners en masse as "PCB mixtures." 42 Fed. Reg. 6555 (Feb. 2, 1977). In developing wasteloads for PCBs in the Spokane River, USEPA must take into consideration all of the data and analysis on the toxicity,

bioaccumulation and persistence of the PCB congeners, and what is actually detected in the City's highly treated wastewater.

As noted under Comment #2 in the attached Memo, extensive data show that the City's wastewater treatment facility preferentially removes the more highly chlorinated PCBs yielding a Total PCB mixture that is less persistent, less bioaccumulative and less toxic. Rather than regulating PCBs "in toxic amounts," the TMDL wrongly assumes that PCBs in the City's treated wastewater has the same impact as untreated discharges to the Spokane River. Not only is this regulatory approach arbitrary, but it is also inconsistent with the plain language of the CWA and therefore lacks clear legislative authority. USEPA is authorized to regulate "toxic pollutants in toxic amounts" and cannot ignore the relative toxicity of the various PCB congeners when imposing wasteloads in a TMDL.

Response:

Regarding regulating “toxic pollutants in toxics amounts,” see response to comment 3.1.3. wasteload allocation.

The commenter is correct that tertiary treatment preferentially removes more highly chlorinated PCBs. However, Section 303(d)(1)(C) of the Clean Water Act requires that a TMDL calculate the maximum amount of a pollutant that can be in a waterbody while still meeting water quality standards. The allocations in this TMDL project are made under this statutory provision and under 40 C.F.R. § 130.7(c)(1). Section 2 of the TMDL document (PCB Water Quality Standards) describes the applicable water quality standards that the EPA considered when developing its allocations, all of which are in terms of total PCBs that do not distinguish between congeners. As such, the TMDL project appropriately expresses allocations in terms of total PCBs. Establishing different wasteload allocations for specific PCB congeners or homologs would require a change to the applicable water quality criteria, wherein specific PCB congeners or homologs have different water quality criteria. See also responses to comments 4.7 and 14.7.

3.9 Comment:

The draft TMDL utilizes outdated information on mass loadings from point sources. The assessment mass balance model presented in the draft TMDL utilizes outdated information on mass loading based on monitoring data collected more than 10 years ago. In addition to supporting the development of load and wasteload allocations, the mass balance model is used in the draft TMDL to "assess current sources of PCBs to the Spokane River." According to the draft TMDL:

"The assessment spreadsheet predicts flow and PCB concentration in August 2014 for purposes of assessing current conditions and PCB sources." (Section 4.1.1)

This model uses flow conditions and PCB input concentration data from August 2014. These data are 10 years old and do not reflect the impact of the NLT installed by the City of Spokane and measures implemented by the City and by other dischargers that have greatly reduced point source mass loading. As a result, the assessment mass balance model greatly overstates the current point source mass loading to the Spokane River. The USEPA's PCB TMDL Handbook indicates that the TMDL should utilize "data on point source loadings most representative of current conditions where relevant information is available".

The final TMDL should utilize recent monitoring results that more accurately reflect current point source mass loading to the Spokane River. Effluent monitoring results for the RPWRF since the City's microfiltration system was brought online in 2021 have been provided to Ecology and is available through their web site (https://apps.ecology.wa.gov/paris/DischargeMonitoringData.aspx).

Response:

The EPA disagrees that the assessment mass balance model overstates the current point source mass loading to the Spokane River. While the EPA acknowledges that data were used from 2014, as noted in the modeling report, the most recent, synoptic monitoring of water quality conditions in the river and source loadings occurred during August 2014. The mass balance modeling was conducted to evaluate relative source impacts and predicted river conditions. The August 2014 data was not used to set TMDL wasteload allocations, which are based on the water quality criterion concentration and effluent flows.

Section 4 (TMDL Technical Approach) and Appendix C (Spokane River PCB Mass Balance Assessment Tools) of the TMDL document provide information on the mass balance tool. Regarding the mass balance approach and assumptions, see responses to 2.3.2 and 7.3.

The EPA acknowledges and supports improvements in treatment achieved by the City and other facility since August 2014, and we have added language noting these improvements to the TMDL document.

3.10 Comment:

Responsibility for TMDL implementation in areas outside the jurisdiction of the State of Washington is unclear. The TMDL indicates that Ecology will be responsible for implementing the TMDL in areas under the jurisdiction of State of Washington. The draft TMDL assumes that the river will contain no more than 1.3 pg/L total PCBs as the River enters the State of Washington. The draft TMDL also assumes that tributaries under the jurisdiction of USEPA and

the Spokane Tribe (i.e., Chamokane Creek) will contain no more than 1.3 pg/L total PCBs at the point of entry to the Spokane River. Based on the simple mass balance model used for the TMDL, if PCB concentrations at the Idaho/Washington border remain at the 21 pg/L (the assumed concentration based on 2014 data) then the concentration at the Spokane Reservation boundary will remain almost 10x above the tribal water quality standard even if all other load allocations are attained. If PCB concentrations in Chamokane Creek are at the level of 117 pg/L used by the USEPA in the 2014 mass balance model, then the concentration at the Spokane Reservation boundary will be almost 2x the tribal water quality standard even if all other load allocations are attained (and assuming that the concentration at the Idaho/Washington border is 1.3 pg/L). Thus, the Tribe's water quality standard will not be attained without source control measures in Idaho and within the Spokane Reservation.

USEPA needs to articulate the roles of the USEPA and Idaho DEQ for controlling point and non-point sources of PCBs into the Spokane River within Idaho in order to move toward attainment of the target concentration of 1.3 pg/L at the Idaho/Washington border. The Idaho WQS for PCBs is 190 pg/L and would not be protective of a downstream boundary condition of 1.3 pg/L. In addition, USEPA needs to articulate the roles of the USEPA and Spokane Tribe for controlling point and non-point sources of PCBs into the Spokane River within the Spokane Reservation.

Response:

The EPA disagrees that this TMDL project should articulate the steps that the EPA, Idaho, or the Spokane Tribe must take to meet boundary conditions. This TMDL project was developed to address impaired segments within the state of Washington and the EPA has determined that if boundary conditions concentrations and PCB allocations are met, the applicable water quality standards (including narrative water quality standards for the protection of downstream waters) will be attained. Regarding the responsibilities of Idaho to control PCB sources in Idaho waters in this TMDL project, see response to comment 2.2.

3.11 Comment:

The fish hatcheries on Chamokane Creek operate under a USEPA-issued general NPDES permit (Permit No. WAG130000, effective March 1, 2024). This permit includes language indicating that the USEPA may require dischargers to obtain individual permits if a TMDL containing requirements applicable to the point source(s) is approved after the effective date of the general permit. The final TMDL should clarify that the hatcheries on Chamokane Creek are covered by this TMDL and should indicate whether USEPA anticipates requiring individual permits for these hatcheries or using some other enforceable mechanism to attain wasteload allocations for these point sources.

Response:

The EPA disagrees that the hatcheries on Chamokane Creek should receive a wasteload allocation since they do not discharge to Washington waters and are outside the scope of the TMDL project. However, the TMDL project sets a boundary condition concentration to the river at the Washington-Spokane Tribe border, including Chamokane Creek, that addresses sources in those waters.

The EPA is the permitting authority for facilities on tribal land, including the two fish hatcheries on the Spokane Reservation and the Wellpinit WWTP. When these permits are reissued, EPA must determine if these facilities have the reasonable potential to cause or contribute to excursions above water quality standards for PCBs. If the facilities have the reasonable potential to cause or contribute to excursions above water quality standards for PCBs, the permit must include effluent limits for PCBs, and those PCB limits must be derived from and comply with applicable water quality standards (40 C.F.R. § 122.44(d)(1)). The TMDL boundary condition concentrations at the Washington-Spokane Tribe border waters are the same as the Spokane Tribe's PCB numeric water quality criterion in their reservation. EPA-issued permits in the Spokane Tribe's reservation must be consistent with Spokane Tribe's water quality standards, and therefore are expected to be consistent with the Washington-Spokane Tribe boundary condition concentrations assigned to border waters.

3.12 Comment:

The comments provided above and the technical comments provided in the attachment to this letter highlight how USEPA's proposed TMDL is not workable for the City unless a variance is granted at the same time the TMDL wasteload and associated effluent limit are incorporated into the City's NPDES permit. The City submitted a variance application in 2019 (Application for Variance from Human Health Water Quality Standard for PCBs. https://fortress.wa.gov/ecy/ezshare/wq/standards/CityApp.pdD; however, Ecology has yet to act on this application. The City urges USEPA to work with Ecology now to ensure the variance process moves forward in parallel with the TMDL process.

Importantly, due to the unattainable load and wasteload allocations, USEPA's TMDL does not create a workable framework for reducing PCBs in fish to safe levels as required to restore this beneficial use of the Spokane River. Among other barriers, USEPA's unwillingness to adequately regulate the amount of PCBs in consumer products under the Toxics Substances Control Act ensures that fish will continue to be contaminated no matter what the businesses and residents of Spokane do to remove PCBs in wastewater and stormwater.

We urge the USEPA to reconsider its approach to the TMDL. The final TMDL should clearly acknowledge the many technical and logistical challenges to managing and removing PCBs in

the environment. Load and wasteload allocations should be established in a way that facilitates measurable improvement in Spokane River water quality and restoration of beneficial uses. In the interim, the City will continue to employ the most effective treatment technologies available to remove PCBs from its wastewater and stormwater. In addition, the City will continue to educate the public about how they might help keep PCBs out of the City's wastewater and stormwater.

Response:

The EPA disagrees that the TMDL document is the appropriate place to determine NPDES permitting options in order to be consistent with the wasteload allocation in this TMDL project. Regarding variances, see response to comment 16.10.

Regarding achievability of allocations and challenges in meeting them as well as requirements for establishing load and wasteload allocations, see response to comment 3.1.1. Regarding whether the TMDL project creates a usable framework, see response to comment 3.7. Regarding EPA's recent TSCA action and more information on TSCA, see responses to comments 5.2, 7.2.3, and 14.10.

4 City of Spokane - Attachment A: Technical Memo

4.1 Comment:

On May 15, 2024, the USEPA issued proposed Total Maximum Daily Loads (TMDLs) for Polychlorinated Biphenyls (PCBs) for the Spokane and Little Spokane Rivers (USEPA, 2024a). These TMDLs were, in turn, used to develop wasteload allocations for point source discharges and load allocations for non-point source discharges to these rivers. GSI Environmental Inc. (GSI) has worked with the City of Spokane to develop technical comments on this draft TMDL. These technical comments are provided in this memo.

Response:

Comment noted.

4.2 Comment:

The proposed wasteload allocation concentration of 1.3 pg/L for point sources cannot currently be attained though any technology or management practice and will not be attainable for the foreseeable future. The TMDL should acknowledge the technological limitations for PCB removal from wastewater effluent and should utilize a wasteload allocation method that results in attainable wasteload allocations.

Response:

The EPA acknowledges the challenges of meeting PCB allocations. Regarding attainment of wasteload allocations with existing technology, technological limitations, and that TMDL wasteload allocations should be attainable, see response to comment 3.1.1.

4.3 Comment:

Despite being man-made, PCBs are ubiquitous in both the man-made and natural environments. PCBs migrate from both historical sources and recently manufactured industrial and consumer products into the environment and into the wastewater and stormwater that flow to the City's wastewater treatment plant (i.e., the Riverside Park Water Reclamation Facility (RPWRF)). PCBs are a world-wide contaminant that can be found in all environmental media (e.g., air, soil, groundwater, surface water) and biota. Historical and current releases have resulted in the cycling of PCBs through wind and water currents, sediment transport, and cycling in food webs. Due to the scale and reach of these transport processes, PCBs are ubiquitous, such that they are frequently detected in remote and undeveloped environments with little to no local human-caused influence (Church, 2023).

Today, PCBs from legacy manufactured products continue to enter the environment. The historical use of legacy PCBs has resulted in PCBs in soil, groundwater, and sediments at hundreds to thousands of contaminated sites that are undergoing remediation under federal or state regulatory oversight. Within the Spokane area, these sites are an on-going source of legacy PCBs to the City's wastewater sewer system and also a direct source of PCBs to the Spokane River. Marti and Maggi (2015) identified 31 sites in the Washington State Department of Ecology (Ecology) database of clean-up sites that could be contributing PCB contamination to the Spokane River via groundwater, 23 of which were confirmed to have PCBs in site soils.

Although the intentional production of PCBs was banned in the US in 1979, additional, inadvertent PCBs are created through a variety of manufacturing processes. At least seventy (70) manufacturing processes likely produce these inadvertent PCBs (Panero, 2005). Although the USEPA and other federal agencies have established limits on the amounts of inadvertent PCBs allowed in new manufactured products, these limits are in the parts per million (ppm) range, more than one billion times higher than the 1.3 pg/L (1.3 parts per quadrillion, ppq) wasteload allocation concentration in the draft TMDL. As a result, a number of widely distributed goods manufactured today contain significant levels of PCBs that continue to be released into the natural environment and are on-going sources of PCBs to the City's wastewater and directly to the Spokane and Little Spokane Rivers. Ecology (2016a) measured PCB concentrations in 216 different consumer products. They found that 156 of the products tested (72%) contained PCBs at a concentration of 1 part per billion (ppb) or higher (i.e., one

million or more times higher than the proposed wasteload allocation concentration of 1.3 ppq). Many of the products found to contain more than 1 ppb of PCBs were products intended to be used outdoors (e.g., sidewalk chalk, pesticides and other lawncare products, and road paints) leaving no doubt that the PCBs in these products continue to be released into the environment.

Washington State recently petitioned the USEPA to reevaluate the Toxic Substances Control Act (TSCA) limit on inadvertently produced PCBs at 50 ppm. Despite the documented presence of PCBs in a wide variety of consumer products in the ppb range or higher, USEPA concluded that there was not enough evidence that PCBs at these concentrations posed a risk to human health or the environment (USEPA, 2024b). In contrast, in this draft TMDL, the same agency has proposed that load and wasteload allocation concentrations of 1.3 ppq (1.3 pg/L) are needed to attain health-protective concentrations in the Spokane River. The final TMDL should address this inconsistency and state why the agency has arrived at this seemingly paradoxical conclusion. The final TMDL should explain how load and wasteload allocations can be attained without addressing these on-going releases of PCBs from consumer products into the environment.

Response:

Regarding legacy sources of PCBs, Section 3.1.1 of the TMDL document (Legacy Impacts) describes the presence of legacy PCBs which continue to discharge to the Spokane River Basin. EPA recognizes the concerns related to human health and the environment posed by PCBs in general and is working towards better understanding those concerns.

The EPA disagrees that it is necessary for this TMDL document to address decisions made under a separate Federal statute, such as TSCA. The Clean Water Act states that TMDLs must establish allocations, among other requirements, that meet relevant water quality standards. TSCA limits are not identified as a constraint in determining appropriate allocations. EPA's response to the TSCA petition itself notes "As provided in TSCA section 6(e)(5), section 6(e) does not limit EPA's authority to take action on PCBs under any other provision of TSCA or any other federal law. 15U.S.C. 2605(e)(5)."

For more discussion on TSCA, see responses to comments 5.2, 7.2.3, and 14.10. Regarding attainability of load and wasteload allocations, see response to comment 3.1.1.

4.4 Comment:

Although concentrations of PCBs in the City's wastewater influent have declined over time, they remain thousands of times higher than the proposed wasteload allocation concentration of 1.3 pg/L for the RPWRF. Although the City has implemented a number of measures to reduce PCB concentrations in the wastewater influent, the effectiveness of these measures is limited by the

ubiquity of sources of legacy and inadvertent PCBs. As a result of high PCB concentrations in the wastewater influent, over 99.9% removal of PCBs from the influent would be required to attain the wasteload concentration allocation in the treated effluent. Although the City's recently completed Next Level Treatment (NLT) system achieves on average over 99% removal of PCBs, no technology has been shown to achieve over 99.9% removal of PCBs for wastewater.

Response:

The EPA acknowledges the challenge of reducing PCBs in the influent streams to municipal treatment plants and supports continued efforts to identify and reduce sources. POTWs may be able to reduce influent concentrations or loads of PCBs from industrial sources through pretreatment requirements, including local limits for PCBs (40 C.F.R. §§ 403.5(c) and (d)), which may be in the form of best management practices in lieu of or in addition to numeric limits (40 C.F.R. § 403.5(c)(4)). Other approaches may include water conservation, education and outreach to residential ratepayers, and encouraging graywater reuse for irrigation (WAC 246-274). Regarding feasibility, see also response to comment 3.1.1.

4.5 Comment:

The ubiquity of PCBs in the environment and the impossibility of attaining the proposed wasteload allocation concentration of 1.3 pg/L is further illustrated by the laboratory analytical results for laboratory blank samples analyzed on behalf of the City. Laboratory blank samples are highly purified water samples intended to be free of PCBs and other contaminants. However, even in laboratory blank samples, the total PCB concentration usually exceeds 1.3 pg/L. Out of 152 laboratory blank samples analyzed on behalf of the City from 2011 to 2022, 139 (91%) contained total PCB concentrations above 1.3 pg/L. For this set of blank samples, the average total PCB concentration was 244 pg/L. This 200x exceedance of the proposed wasteload allocation concentration in laboratory blank samples further demonstrates that this concentration cannot be attained in the treated RPWRF effluent or other point source discharges to the Spokane River.

Response:

The EPA recognizes the issue of blank contamination in sampling of waters with relatively low total PCB concentrations, and we highlight the issue in Section 3.3 of the TMDL document (Current Conditions and Recent Exceedances). The EPA also acknowledges that if point source discharges approach the wasteload allocation concentrations in the future, blank contamination could be an uncertainty factor regarding actual discharge concentrations. Regarding feasibility of achieving TMDL allocations, see response to comment 3.1.1.

4.6 Comment:

The final TMDL should acknowledge that the wasteload allocation concentrations cannot be attained with any currently available technology (and, as discussed below, this concentration cannot be measured). The final TMDL should include a variance justification discussion that includes information on sources of PCBs in the environment, limitations of available removal technologies, and the limitations of available laboratory analytical methods to accurately measure total PCBs at concentrations of 100s pg/L or lower. Such variance justification discussions have been included in other TMDLs established by the USEPA. For example, the TMDL for Mercury in the Willamette Basin, Oregon (USEPA, 2021) clearly acknowledges that there are no feasible treatment technologies that could reduce mercury levels in wastewater effluent to the TMDL target concentration of 0.14 ng/L. The TMDL also includes a discussion of various treatment technologies and their documented mercury removal efficiencies. Because of the recognized technological limitation in removal of mercury from wastewater, the wasteload allocation for wastewater treatment systems covered by that TMDL were structured as percentage reductions from current discharges. That TMDL document indicates that source control measures rather than treatment technologies will be the primary tool for attainment of these wasteload allocations. If the USEPA utilizes a similar approach for wasteload allocation in the final TMDL for PCBs in the Spokane and Little Spokane Rivers, the USEPA could establish wasteload allocations that are both attainable and facilitate measurable progress in reducing PCB discharges to the rivers.

Response:

The EPA disagrees that it is necessary for the TMDL document to make findings on these topics. Regarding the attainability of wasteload allocations, see response to comment 3.1.1. Regarding variances, see response to comment 16.10.

4.7 Comment:

The USEPA's proposed wasteload allocations do not appropriately reflect the preferential removal of the more toxic, persistent, and bioaccumulative PCB congeners by the City's wastewater treatment system. The total PCB impairment listings on Washington's 303(d) for the Spokane and Little Spokane Rivers are based entirely upon fish tissue data. The Washington and Spokane Tribe WQC are driven predominately by human consumption of fish. Thus, the ultimate goal of the TMDL for the Spokane and Little Spokane Rivers should be to reduce PCB concentrations in fish. Based on recent analyses, the penta- and hexa- PCB homologs (i.e., the PCB congeners with 5 and 6 chlorines) predominate in fish, comprising, on average, 56% to 74% of the Total PCBs in fish depending on river reach (SRRTTF, 2022; see example in Figure 1 below). Earlier studies of the Spokane and Little Spokane Rivers have found similar predominance of penta- and hexa- PCB homologs (Ecology, 2014; Ecology, 2016b). Untreated

wastewater influent to the RPWRF exhibits a similar homolog distribution with penta- and hexa- homologs present at the highest concentrations (City of Spokane, 2023). However, as discussed below, RPWRF preferentially removes more chlorinated PCBs from the City's wastewater yielding a Total PCB mixture that is less persistent, less bioaccumulative, and less toxic than untreated sources of PCBs to the Rivers.

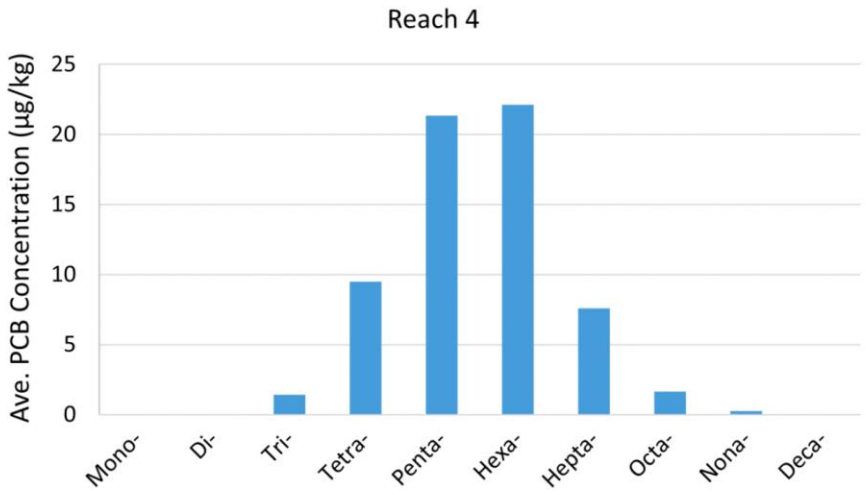

Figure 5. Average Blank-Corrected Homolog Concentrations for All Fish from Reach 4: Crestline to Division.

Figure 1 (sic). Representative Homolog Distribution in Fish from Spokane and Little Spokane River (from SRRTTF, 2022)

When using microfiltration, the removal efficiency for more chlorinated PCBs is higher than for less chlorinated PCBs. A SRRTF study published in 2021 (Rodenburg, 2021) found that the membrane filtration systems operated by Spokane County and Coeur d'Alene achieved much higher removal efficiencies for PCB congeners with four or more chlorines (i.e., tetra- to deca-homologs) compared to PCB congeners with three or fewer chlorines (i.e., mono- to tri-homologs). While this study was conducted prior to operation of the RPWRF NLT membrane filtration system, a similar difference in removal efficiencies has been observed by the City since the NLT commenced operation (City of Spokane, 2023). Thus, in addition to removing over 99% of all PCBs, the RPWRF membrane filtration system reduces the risk profile of the remaining PCBs compared to the influent by shifting the homolog distribution towards the less chlorinated PCBs which are less persistent, less bioaccumulate, and less toxic. Because most historical Aroclor mixtures are comprised predominantly of the more chlorinated PCBs, the homolog distribution and associated risk profile for most untreated sources of PCBs to the Spokane and Little Spokane Rivers is likely similar to the untreated RPWRF influent. For example, the

untreated groundwater PCB source identified by the SRRTTF as entering the "Mission Reach" of the Spokane River has a homolog distribution similar to Arochlor 1260 (LimnoTech, 2023).

The USEPA's proposed wasteload allocations do not account for the lower risk profile of the RPWRF effluent compared to untreated sources of PCBs entering the Spokane and Little Spokane Rivers and the reduced potential for this mixture of PCBs to bioaccumulate in fish.

Response:

The EPA disagrees that "the ultimate goal of the TMDL for the Spokane and Little Spokane Rivers should be to reduce PCB concentrations in fish." The Clean Water Act requires TMDLs to be set at a level to attain water quality standards, not to merely make progress toward cleaner water. See 33 U.S.C. § 1313(d)(1)(C). ("Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.").

The EPA disagrees that the TMDL project is required to distinguish between types of PCBs. The goal of the TMDL project is to meet the human health water quality criterion for PCBs. Human health water quality criteria protect any designated uses related to ingestion of water, ingestion of aquatic organisms, or other waterborne exposure from surface waters (EPA 2017), which includes fish consumption. As explained in response to comment 3.1.1, statute and regulations require that TMDLs meet applicable water quality standards.

In this case, the total PCBs water quality standards in this TMDL project are based on the Spokane Tribe's human health criteria, which include all PCB congeners, and are set at levels that protect fish consumption, which account for accumulation of PCB levels in fish and the degree that people consume fish, as well as consumption of water which account for PCB levels from drinking water and through other pathways. When fish are exposed to total PCBs at the water quality standard, that means that PCBs in fish tissue should also be at levels safe for human consumption. See also response to comment 2.13 and 14.6. However, the water column criteria of 1.3 pg/L must be met to achieve the applicable water quality standard and protect human consumption of both fish tissue and drinking water.

Regarding feasibility of meeting wasteload allocations, see response to comment 3.1.1.

4.8 Comment:

The City of Spokane utilizes best available technologies for control and removal of PCBs from the City's point sources. If the final wasteload allocation concentrations for the City point sources are below the current discharge levels, the City will require a variance or other compliance pathway in order to continue operations.

As discussed in the cover letter, the City has installed the NLT system at the RPWRF including a state-of-the-art membrane filtration system that provides best-available tertiary treatment for the City's wastewater effluent prior to discharge to the Spokane River with a typical operating capacity of 50 MGD. With operation of this tertiary treatment system, the City is achieving over 99% removal efficiency for Total PCBs. As discussed below, the PCB concentrations in the RPWRF effluent are so low that they cannot be accurately measured.

In addition to installation of microfiltration at the RPWRF, the City has invested over $100 million in recent years to reduce combined sewer overflow (CSO) events. As shown in Figure 2, the number and magnitude of CSO events has declined dramatically as a result of these measures. Considering both the tertiary treatment at the RPWRF and the measures to minimize CSO events, the City has implemented all practicable measures to minimize discharges of wastewater- associated PCBs to the Spokane River. Additional reductions are not practicable at this time. If the final wasteload allocation concentrations for the City point sources are below the current discharge levels, the City will require a variance or other compliance pathway in order to continue operations.

In April 2019, the City submitted an application to Ecology for an individual discharger variance from the Human Health Water Quality Standard (HHWQS) for total PCBs (City of Spokane, 2019). As explained in the City's application, the City is not able to achieve either of the current water quality standards that have been promulgated for the Spokane River (i.e., the Tribal standard of 1.3 pg/L or the State standard of 7 pg/L). The City's application for a water quality standard variance for PCBs is still pending with Ecology. Ecology "paused" processing this application, in part, because USEPA was in the process of preparing this TMDL. Although the application was prepared more than five years ago, before the NLT was brought on line, the limitations of this system for attainment of the water quality standards were accurately characterized in the application based on the similarity of the City's system with the microfiltration system at the Spokane County wastewater treatment plant. The City believes that the 2019 variance application is still accurate and valid and does not need to be revised in order to be processed by Ecology. If the proposed wasteload allocations are retained, the final TMDL should recognize that the City and other dischargers will require variances and should encourage Ecology to process outstanding variance applications. Additionally, the final TMDL should investigate and discuss other permitting tools such as waterbody variances, use attainability analyses, or other options for maintaining compliance.

FIGURE 4-4: 2004 – 2023 CSO EVENTS & PRECIPITATION

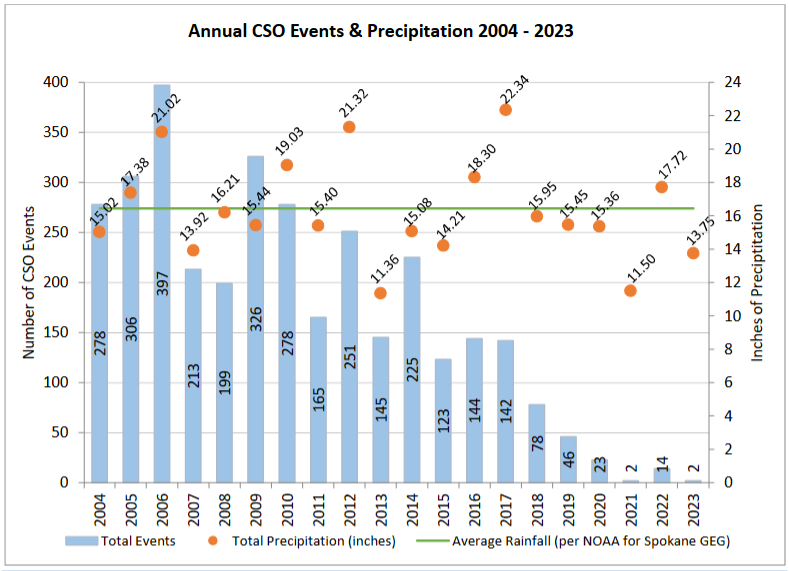

FIGURE 4-5: 2004 – 2023 CSO VOLUME & PRECIPITATION

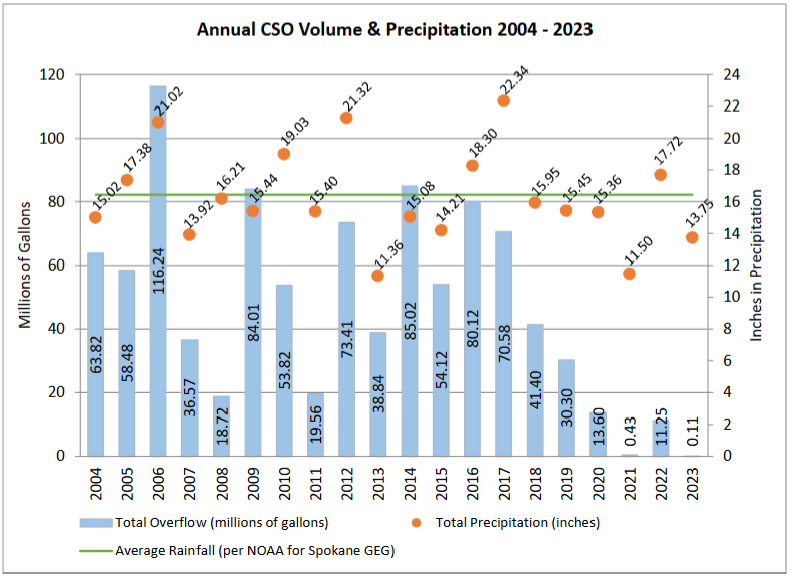

Figure 1: Summary of City of Spokane CSO Events by Year (From City of Spokane, 2024)

Response:

The EPA recognizes the City's efforts to improve wastewater treatment and CSO/stormwater management to date and has added this information in Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document. Regarding variances, see response to comment 16.10. Regarding options for permit limits, see responses to comments

7.4.1 and 16.9. Regarding technological limitations of PCB removal, see response to comment 3.1.1.

4.9 Comment:

The proposed wasteload allocation concentration for the City of Spokane point sources (1.3 pg/L Total PCBs) cannot be measured using any available analytical method. Currently, there are five primary USEPA Analytical Methods for measurement of PCBs in environmental samples (Table 1). None of these analytical methods are capable of accurately measuring Total PCBs in water when the true total PCB concentration is in the low 100s of pg/L (parts per quadrillion) or less. Method 608.3 and Method 1668C are the two analytical methods most commonly used to measure PCBs in the environment; therefore, these methods are discussed in more detail below.

Table 1: Primary Laboratory Analytical Methods for PCBS

Method	Name (Equipment[a])	Current Version	Approved under 40 CFR Part 136?	PCBs Reported[b]	Typical DL/QL (pg/L)[c]
608	Organochlorine Pesticides and PCBs (GC/HSD)	608.3	Yes	Aroclors (7)	65,000/195,000 (Individual Aroclors)
1668	Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue (HRGC/HRMS)	1668C	No	Congeners (209)	5 / 7 (Individual Congeners)
680	Determination of Pesticides and PCBs in Water and Soil/Sediment (LRGC/LRMS-SIM)	680	No	Homologs (10)	Not specified in method

1628	PCB Congeners (LRGC/MS-SIM)	In draft	No	Congeners (209)	1000 /2000 (Individual Congeners)
8082	PCBs by GC (GC/ECD)	8082A	No	Aroclors (7) and congeners (19)	8000/16,000 (Individual Aroclors)

Notes: a) Some methods include options for use of alternate detectors. b) Table lists primary PCB target analyte list. Total PCBs and/or homologs may also be reported. c) Detection/Quantitation Limits from Ecology Permit Writer's Guide for 608, 1668, and 8082. DL/QL from method for 1628. DL/QL not specified in method for 680. d) GC = gas chromatograph, MS = mass spectrometer, HSD = halogen-specific detector, ECD = electron capture detector, HR = high resolution, LR = low resolution, SIM = Selected Ion Monitoring.

There are two basic approaches used to measure the Total PCB concentrations in an environmental sample: i) measure the concentration of each of the 209 individual PCB congeners and determine the total by adding up these 209 individual concentrations or ii) measure the concentration of the combined mixture of PCBs using a similar commercial Aroclor mixture as a calibration reference.

Method 608.3: Only Method 608.3 is approved by USEPA under the Clean Water Act (40 Code of Federal Regulations (CFR) Part 136). Method 608.3 can detect Total PCBs when they are present in a sample at a concentration of at least 65,000 pg/L. This detection limit is 50,000 times higher than the proposed wasteload allocation concentration for point sources of 1.3 pg/L. Because of the extreme technical challenges of measuring concentrations of all individual PCB congeners, Method 608.3 utilizes the mixture approach for measuring Total PCB concentrations in environmental samples. Method 608.3 uses a gas chromatograph (GC) to partially separate the complex mixture of PCBs in the environmental sample. The pattern generated by this partial separation is matched to one of the seven historical commercial Aroclor mixtures and then the Total PCB concentration in the sample is determined using that specific Aroclor mixture as a reference.

Method 1668C: Method 1668C uses more complex sample processing procedures and very sophisticated analytical instruments to separate and directly measure the concentrations of the individual PCB congeners in the environmental sample. This highly complex analytical method allows for identification and measurement of approximately 137 of the 209 individual PCB

congeners. The remaining approximately 70 congeners are not fully separated by the method and, as a result, the concentrations are reported as groupings of 2 or more co-eluting (i.e., not fully separated) congeners. The Total PCB concentration is determined by adding up the concentrations of all the detected individual PCB congeners (and small groups of congeners). According to the method documentation, Method 1668C can detect individual PCB congeners when they are present in a sample at a concentration of at least 5 to 7 pg/L. Because environmental samples contain mixtures of 10s to 100s of individual PCB congeners, Method 1668C will yield non-detected results for samples containing a mixture of individual congeners all present at concentrations below the individual congener detection limit even though the true Total PCBs concentration may be over 100 pg/L. Thus, Method 1668C could yield non-detect results for a sample with Total PCBs more than 100 times higher than the proposed wasteload allocation concentration of 1.3 pg/L for point sources.

More importantly, persistent and on-going quality assurance/quality control (QA/QC) problems associated with Method 1668C undermine the accuracy of the Total PCB concentration results for samples with reported Total PCBs in the range of 100s of pg/L or lower even when detected results are reported. Specifically, at these low concentrations, similar concentrations of Total PCBs are often detected in QA/QC "blank" samples that are intended to be free of PCBs. In this situation, the true concentration of Total PCBs can only be estimated (with significant uncertainty) using "background correction" procedures. Because PCBs are ubiquitous in the environment, PCBs are detected in most samples analyzed by Method 1668C including "blank" samples consisting of highly purified water intended to be free of PCBs. For environmental samples, the Total PCB concentration reported by the laboratory reflects the PCBs in the original sample, the PCBs inadvertently added to the sample during collection, the PCBs inadvertently added to the sample during laboratory analysis, and chromatogram peaks incorrectly identified as PCB congeners due to matrix interference problems.

For water samples where the laboratory reports very low concentrations of Total PCBs (i.e., 100s of pg/L or less), it is impossible to accurately determine what portions of the Total PCBs were actually present in the sample and what portions were inadvertently introduced into the sample while the sample was being collected or being processed by the laboratory. Although "background correction" (also known as "blank censoring") procedures can be used to estimate the Total PCB concentration in the original sample, these procedures provide only an estimate of the concentration with a large degree of uncertainty. In fact, the estimated Total PCB concentration can vary depending on the specific correction procedure used.

The "blank censoring" method for estimating Total PCB concentrations in low concentration samples is based on the assumption that laboratory blank and trip blank samples can be used to

accurately account for both i) the PCB contamination introduced in an environmental sample during sample collection and analysis and ii) the false detections of PCB congeners associated with matrix interferences. However, the analytical results for samples, such as the RPWRF treated effluent, that contain very low concentrations of PCBs (i.e., 100s of pg/L or less), exhibit a high degree of randomness indicating that the results are unreliable even after blank censoring. This can be illustrated by comparing influent and effluent sample results. The homolog distribution of the RPWRF influent is stable over time with tetra-, penta-, and hexa-homologs comprising more than 70% of the Total PCB concentration (Figure 4). In contrast, the homolog distribution of the RPWRF effluent is highly variable over time. For example, for the RPWRF effluent samples, in January 2023, the laboratory reported that the di- homologs comprised 50% of the Total PCB concentration in the sample while in October 2023, the laboratory reported that the penta- homologs comprised almost 90% of the Total PCB concentration in the sample (Figure 4). Based on the consistent PCB composition of the wastewater influent and the consistent treatment applied by the NLT system, the treated effluent should also exhibit a consistent PCB composition. Even if variations in treatment efficiency result in variations in Total PCB concentration, there is no mechanistic basis to explain why the homolog distribution in the treated effluent is observed to vary greatly from one sample to the next. As noted in Comment 1, above, the RPWRF NLT process including microfiltration removes over 99% of all PCBs and removes more chlorinated PCBs with a higher efficiency compared to the less chlorinated PCBs. If the laboratory method were able to accurately measure the PCBs in the treated RPWRF effluent, the analytical results should show a consistent shift in the effluent homolog distribution towards the less chlorinated congeners compared to the influent homolog distribution. The highly variable homolog distribution reported by the laboratory for the effluent samples indicates that the laboratory is not accurately measuring the PCBs in the effluent samples. The homolog distribution in the laboratory method blanks also exhibit a high degree of variability further illustrating that laboratory reported Total PCB concentrations in the 100s of pg/L or less are not reliable.

The randomness and unreliability of laboratory-reported Total PCB concentrations of 100s of pg/L or less is further illustrated by looking at the individual PCB congeners (and individual sets of co- eluting congeners) reported as detected in the effluent samples. Across the four standard quarterly effluent samples collected at the RPWRF in 2023, a total of 28 different individual PCB congeners were reported as detected by the laboratory prior to any blank correction. Of these 28 congeners, only one (4%) was detected in all four samples. 18 of these 28 congeners (64%) were detected in only one of the four samples. After 3x blank correction a total of 18 different individual PCB congeners were reported as detected by the laboratory. None of these were detected in all four effluent samples and 14 of the 18 (78%) were detected in only one of the

samples. This analysis shows that the detection of individual PCB congeners in RPWRF effluent samples are essentially random. There is no mechanistic reason why the individual PCB congeners actually present in the RPWRF effluent would vary from quarter to quarter. The essentially random "detections" of individual PCB congeners in the RPWRF treated effluent most likely reflects a combination of laboratory contamination and chromatogram peaks incorrectly identified as PCBs. As a result, the laboratory analytical results for the RPWRF effluent samples do not accurately reflect either the actual individual PCB congeners in the effluent or the actual Total PCB concentration in these samples. In fact, the true levels of PCBs in the RPWRF are too low to measure using Method 1668C or any other standard analytical method.

In characterizing current PCB concentrations in the water of the Spokane and Little Spokane Rivers, the draft TMDL states that:

"Of the entire subset of blank-corrected samples, 74.5% were above Spokane Tribe WQC, and 64.0% were above Washington WQC." (USEPA, 2024a pg 32)

However, as shown here, laboratory analytical results for water samples containing PCB concentrations of 100s of pg/L exhibit a high degree of randomness that is not adequately addressed by blank correction. This section of the TMDL should include an analysis of the reliability of this dataset of surface water samples. This analysis should cover:

- The proportion of blank samples in the sample batches analyzed which exceed the Spokane Tribe and Washington WQC.
- Whether the water samples within each river reach evaluated exhibit consistency across samples the set if individual congeners detected.
- Whether the water samples within each river reach evaluated exhibit consistency the homolog distribution.

Regardless of blank censoring and other standardized QA evaluations, if the water samples from an individual river reach do not exhibit consistency in the individual congeners and/or the homolog distribution, then the reported total PCB concentrations likely reflect primarily laboratory artifacts rather than the true levels of PCBs in the surface water.

An additional issue with Method 1668C is that data quality flags are often prevalent and handled differently depending upon the lab and the end user of the data. Certain reported values will often be "NJ" or "EMPC" flagged, indicating that a given congener was tentatively identified. This happens when there are interference issues or method criteria are not fully met for quantification of a result. For these congeners, an estimated maximum possible

concentration (EMPC) will often be reported along with these "NJ" flagged results, which means the true value could be anywhere between zero and the EMPC value. Depending upon the data user, these values may be treated as either detections with a concentration equal to the EMPC or as non-detect results. For samples with low levels of PCBs such as the Spokane River surface water samples, inclusion or exclusion of the "NJ" flagged congeners can have a large impact on the reported total PCB concentration (e.g., see Kiridena et al., 2024). It is unclear how flagged data were used in compiling total PCB information presented in the draft TMDL. The final TMDL should clarify how specifically "NJ" flagged, and other qualified method 1668C data were treated.

In summary, neither USEPA Method 608.3 nor USEPA Method 1668C (nor any other available laboratory method) can accurately measure trace Total PCB concentrations in the range of 100s of pg/L, much less 1.3 pg/L. A wasteload allocation concentration that is too small to be measured is not useful for managing PCB loads in the Spokane and Little Spokane Rivers.

Response:

The EPA agrees that the wasteload allocation concentration cannot be measured using available analytical methods and acknowledges that there is uncertainty in the estimates of current PCB concentrations and loadings, and, in turn, the estimated percent reductions necessary to meet the TMDL's in-stream target, load allocations, and wasteload allocations. However, these uncertainties were considered in the development of this TMDL project. Blank censoring followed methods commonly applied by both Ecology and LimnoTech during their work with the SRRTTF, with the primary difference being the application of a 5X threshold instead of a 3X threshold. Data flagged with "U" qualifiers (e.g., U, UJ, NUJ, etc.) were replaced with 0. Results flagged "NJ" were included, though it should be noted that the EIM description of the NJ flag - *"There is evidence that the analyte is present in the sample. Reported result for the tentatively identified analyte is an estimate."* - does not suggest these values are an estimated maximum. Regarding wasteload allocations below lab method detection limits, see response to comment 3.1.2.

The EPA disagrees that the wasteload allocation concentrations are not "useful for managing PCB loads," because they provide an end goal for what is needed to meet PCB water quality standards into the future that will protect people's health. However, the EPA recognizes the challenges in achieving and monitoring low PCB concentrations. The wasteload allocations establish point source discharge concentrations necessary to achieve water quality standards in combination with load allocations assigned to nonpoint sources. See also response to comment 8.5.

4.10 Comment:

The wasteload allocation for point sources does not reflect the practical impossibility of controlling many non-point sources of PCBs to the Spokane River. The USEPA Draft TMDL acknowledges that non-point sources of PCBs constitute the majority of mass loading to the Spokane and Little Spokane Rivers. Figure 12 in the draft TMDL indicated that 58% of mass loading was attributable to non-point sources in 2014. Given the improved treatment technologies implemented at the RPWRF and other point sources since 2014, the non- point sources certainly comprise a greater percentage of the mass loading today. Non-point sources of PCBs will continue to dominate for the indefinite future because legacy PCBs, although no longer manufactured, are widely distributed in the environment and will continue to migrate to the Spokane and Little Spokane River through multiple pathways. In addition, inadvertent PCBs continue to be produced through a variety of manufacturing processes and are present in a wide range of consumer products and other materials. These inadvertent PCBs will continue to be released into the environment and will continue to migrate to the Spokane and Little Spokane Rivers.

In assigning load allocation, the draft TMDL drastically favors non-point sources over point sources giving 98% of the total load allocation to non-point sources and only 2% to point sources. While the draft TMDL establishes load allocations for non-point sources based on load allocation concentrations of 1.3 pg/L for all water entering the Spokane and Little Spokane Rivers, the USEPA acknowledges that it is not aware of any technologies or best practices that can achieve these levels for non-point sources: “the EPA does not currently have information that control technologies and best management practices can achieve PCB concentrations below the criterion in regional groundwater and tributaries” (USEPA, 2024a pg 49)

Despite this, the draft TMDL states that: “Ecology will implement nonpoint source controls to assure reductions in nonpoint source pollution. Nonpoint source dischargers typically implement their LAs through diverse programs (which may be regulatory, non-regulatory, or incentive-based, depending on the state or Tribal program) and voluntary actions.” (USEPA, 2024a, pg 60)

Due to the ubiquitous presence of PCBs in the environment, the load allocation concentration of 1.3 pg/L will not be attainable through these measures or any other actions. As discussed above, a load allocation concentration of 1.3 pg/L is not even measurable. The use of unattainable load allocations for non-point sources creates a misleading impression that extreme reductions in point sources will contribute to attainment of the water quality standard. In reality, even complete elimination of all point sources of PCBs into the Spokane and Little

Spokane Rivers would not bring the Spokane River system close to attainment of the State water quality standard of 7 pg/L or the tribal water quality standard of 1.3 pg/L.

A more practical approach to point source wasteload allocations would be to assign these allocations as achievable reductions from current discharges. As discussed above, such an approach has been utilized for other TMDLs where there are no feasible options for meaningful near-term reductions on non-point source loadings. Wasteload allocations based on reductions from current discharges would provide a clear framework for measurable progress even for facilities such as the RPWRF with very low PCB concentrations in the treated effluent. Because the RPWRF already utilizes best available technology for removal of PCBs, a source control Best Management Plan (BMP) would be the primary tool for attainment of assigned reductions from current discharges. Although PCB concentrations the RPWRF effluent are already too low to measure accurately, the effectiveness of such a BMP could be monitored through measurement of PCB concentrations in the RPWRF influent, which can be measured using available laboratory methods. For the RPWRF, it is reasonable to assume that average PCB concentrations in the treated effluent are proportional to average PCB concentrations in the influent; thus, reductions in influent PCB concentrations would document progress towards attainment of the reduction- based wasteload allocation. In 2015, the USEPA recommended a BMP approach for reducing discharges of PCBs from point sources into the Spokane River (USEPA, 2015). A key rational[e] provided by the USEPA for this approach was the inadequacy of laboratory methods for measuring compliance with water quality-based effluent limits.

In contrast, a wasteload allocation concentration of 1.3 pg/L will remain both unattainable and unmeasurable for the foreseeable future. As a result, the current wasteload allocations based on this concentration do not create a framework for measurable progress.

Response:

The EPA recognizes the challenge posed by the wasteload allocations in the TMDL project, but these challenges affect all source categories. The EPA disagrees that the TMDL project establishes allocations that favor nonpoint sources. The TMDL project allocates a PCB concentration of 1.3 pg/L to all sources to the Spokane River within Washington, including tributary inflows, regional groundwater, contaminated groundwater, and point sources. Allocations are also expressed as a load of mg/day, which is larger for nonpoint sources because there are higher flows associated with the nonpoint source allocations (e.g., groundwater and tributary allocations). However, all sources must meet a concentration of 1.3 pg/L. The EPA agrees that point sources alone attaining water quality standards will not meet water quality standards, and nonpoint sources must also meet their load allocations.

The EPA is unable to dictate specific actions as part of these TMDLs under an implementation plan. However, the EPA has added information in Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) with additional information on past, current and future actions and activities to reduce point and nonpoint loads. Regarding these activities, see also response to comment 16.4.

EPA disagrees that the TMDL project is required to express allocations as reductions from current conditions, see the response to comment 14.4. The Clean Water Act requires EPA to establish TMDLs at a level necessary to implement the applicable WQSs, not make improvements toward meeting WQSs.

The proposed alternative of assigning "achievable reductions" in current discharge levels for point sources would not achieve the fundamental goal of a TMDL to attain and maintain the applicable water quality standards, and presumes that reductions by nonpoint sources will provide additional capacity for these alternative wasteload allocations. As noted in the TMDL document, the EPA evaluated alternatives that assigned PCB concentrations both higher and lower than 1.3 pg/L to different inflows to the Spokane River. This analysis indicated that the concentration assigned to the river at the Idaho/Washington border cannot be substantially higher than 1.3 pg/L, and the TMDL project assigned 1.3 pg/L to waters at the jurisdictional borders as the boundary condition concentration.

The EPA does not currently have information that control technologies and best management practices can achieve PCB concentrations below the criterion in regional groundwater and tributaries. See response to comment 3.1.1. In order to ensure attainment of the WQS in a consistent and clear way, the TMDL project allocates a PCB concentration of 1.3 pg/L to all sources and to the river and tributaries at the Washington-Idaho and Washington-Spokane Tribe boundaries in Washington to achieve the Spokane Tribe water quality criterion.

Regarding attainability of TMDL load and wasteload allocation, see response to comment 3.1.1.

4.11 Comment:

The approach of tying wasteload allocations directly to wasteload allocation concentrations may hinder measures to decrease PCB loads to the Spokane and Little Spokane Rivers. In the draft TMDL, all point sources are assigned a wasteload allocation concentration of 1.3 pg/L. Wasteload allocations are then determined by multiplying waste flows by the wasteload allocation concentration of 1.3 pg/L. Using this simplistic approach, management approaches that permanently reduce the volume of discharge from a point source without attaining a discharge concentration of 1.3 pg/L result in no apparent progress towards attainment of the overall TMDL. For example, the City would have no incentive to reduce CSO or stormwater flow

volumes entering the river based on the concentration based WLAs in the draft TMDL. As discussed above, as an alternative to the concentration-based WLAs in the draft TMDL, USEPA should consider using percent reduction from current loading coupled with source control BMPs.

Response:

The EPA disagrees with the commenter's proposed approach. The approach in this comment for setting wasteload allocations is substantially more complicated than the selected approach in the TMDL project and would not provide additional flexibility for point sources. Rather than an equal concentration assigned to all point sources, the commenter's proposed approach requires individualized percent reductions for each source. Since allocations must be expressed as a load and/or other appropriate measure that will attain applicable WQS, and since there are no known inflows with total PCB concentrations less than 1.3 pg/L, that water quality target would still determine the wasteload allocations under this alternative approach. Regarding setting wasteload allocations as percent reductions from current loading, see also response to comment 4.10.

4.12 Comment:

If the current approach is retained, the final TMDL should be explicit in defining actual WLAs for purposes of compliance. As the draft TMDL is currently written, it is unclear whether the concentration or the total load should be applied when implementing the TMDL. Table 15 and Table 16 of the draft TMDL list both concentration and loading WLAs without much in the way of further explanation (USEPA 2024a, pg 53-54). If loading-based WLAs are left in the final TMDL, discharger flows should be based on total permitted future flows, and not current flows.

Response:

The EPA disagrees that the TMDL project lacks clarity in the wasteload allocations. The TMDL document expresses loads as mg/day and in-stream concentrations of total PCBs. Loadings are required under the TMDL regulations at 40 CFR 130.2(i). Regarding the need for concentration-based wasteload allocations and implementation of those wasteload allocations, see response to comment 14.4.

As noted in response to comment 3.2, NPDES permits for point source dischargers will dictate how wasteload allocations are translated to permit limits and how compliance with the limits will be determined. See responses to comments 7.4.1 and 16.9 on options and considerations for NPDES permit conditions. As noted in Section 5.3.1 (Municipal and Industrial Wastewater Discharges) and Section 5.7 (Future Growth and New Sources) of the TMDL document, NPDES effluent limits developed consistent with these wasteload allocations can be adjusted if effluent flows increase in the future.

Regarding use of permitted future flows (design flows), the EPA agrees and has changed wasteload allocations for municipal treatment plants. Also, see response to comment 16.5.

4.13 Comment:

Fish hatcheries are not adequately addressed in the draft TMDL. While fish hatcheries are documented sources of PCBs, the draft TMDL does not explicitly assign wasteload allocations to the fish hatcheries that discharge to the Spokane River tributaries. While the USEPA may have intended to cover the fish hatcheries through the language in Section 5.3.3 of the draft TMDL on general NPDES permits, this is not clear. The draft TMDL indicates that wasteload allocations for facilities covered by general NPDES permits are not specified because the discharge volumes are not known. However, the fish hatchery general permits require these facilities to monitor and report facility flows; therefore, the wasteload allocations for these facilities can be determined and the TMDL should specify wasteload allocations for the hatcheries in addition to the wasteload allocation concentrations. Hatcheries discharge PCBs not only in wastewater (and sediment in the wastewater) but also in the fish released to the river. The wasteload allocations assigned to the hatcheries should account for the PCBs discharged to the River through the release of fish containing PCBs.

In addition to the Spokane Hatchery (NPDES permit number WAG137007), which discharges directly to the Little Spokane River, there are two hatcheries that discharge to Chamokane Creek, a tributary to the Spokane River upstream of the confluence with the Columbia River. These are the Spokane Tribal Hatchery and Ford State Fish Hatchery, both regulated by EPA under the NPDES General Permit WAG130000. Neither the Spokane Tribal Hatchery nor Ford State Fish Hatchery is mentioned in the draft TMDL. In addition, no load allocation is assigned to Chamokane Creek. Please review and utilize the data collected at the three hatcheries that discharge PCBs to tributaries to the Spokane River and include these studies in the list of references in the TMDL. Ecology has conducted studies on the Spokane Hatchery (Ecology, 2018). USEPA has required PCB monitoring at the two federally permitted hatcheries. The final TMDL should clearly indicate that the two hatcheries that discharge to Chamokane Creek are covered by the TMDL and should explicitly assign wasteload allocations to all three of these hatcheries.

Response:

With regard to the Spokane Fish Hatchery on the Little Spokane River, the EPA agrees with the comment and has assigned a wasteload allocation. See response to comment 15.10.3. Regarding hatcheries on the Spokane Tribe reservation, see response to comment 9.7. Regarding the comment on a load allocation for Chamokane Creek, this TMDL project is limited to Washington waters; Section 4.2.4 in the TMDL document (Boundary Condition

Concentrations in Border Waters) establishes a boundary condition concentration of 1.3 pg/L to waters at the Washington-Spokane Tribe reservation border.

Regarding assigning a wasteload allocation to hatchery fish, the PCBs in fish released to the river from a hatchery are not considered a source of PCBs to the water column (i.e., PCBs bound in the fish tissue when a fish is released remain contained within the fish). In the final TMDL document, the EPA has added a reference to the 2018 study of fish hatchery PCBs by Ecology. This study found that the primary source of PCB loads were from feed, and working to reduce those levels as part of implementation for this TMDL project will also reduce levels in hatchery fish tissue.

4.14 Comment:

The Mass Balance model used to develop the wasteload allocations is overly simplistic, overly conservative, and was evaluated using out-of-date monitoring data. The draft TMDL relies on a simple mass balance with an assumption that total PCBs released into the river will flow downstream with no loss of instream PCBs due to mechanisms such as settling, volatilization, biological uptake, and chemical breakdown. However, settling, volatilization, biological uptake, and chemical breakdown are known mechanisms of PCB loss. USEPA notes in the draft TMDL: "PCBs bioaccumulate in food webs…" (USEPA, 2024a pg 9)

But the draft TMDL also states: "This approach assumes that there is no PCB mass loss from the release point into the river, and all PCB mass is transported downstream with the river flow…" (USEPA, 2024a pg 9)

These two statements in the TMDL are contradictory. In fact, both direct and indirect monitoring indicate that mass loss is important in the Spokane River. Direct measurement of PCB concentrations in River water show modest decreases in PCB concentrations in the Spokane River downstream of the City's urban core area. These data provide suggestive evidence that mass loss mechanisms are important. Fish tissue data (e.g., SRRTTF, 2022), biofilm data (Rodenburg, 2022; LimnoTech, 2023) and solid-phase matrix diffusion (SPMD) sampler data (Rodenburg, 2022) more clearly document decreases in PCB levels in the Spokane River downstream of the City's urban core demonstrating the importance of loss mechanisms for decreasing PCB levels in the Spokane River. Because PCBs are concentrated in fish tissue, biofilms, and SPMD samplers relative to the river water, these three data types are less impacted by laboratory contamination and can more accurately document variations in PCB concentrations within the river. The biofilm samples, in particular, document a greater than 90% decrease in PCB levels downstream of the Spokane urban core. These data demonstrate that the mass balance model assumptions are overly conservative and that higher upstream mass loading could be protective at the Spokane Reservation boundary.

In USEPA's Willamette River TMDL for Mercury (USEPA, 2021), the agency linked mercury sources to water column concentrations and fish tissue methylmercury concentrations using three linked models – a food web model, a mercury translator model, and a mass balance model. The mass balance model was first used to estimate mercury loads for each source category at the point where they originate ("At Source Loads"). Transport of the source load to the stream network was modeled subsequently. Loads delivered to the stream ("Delivered Loads") are less than "At Source" loads due to transport losses (e.g. storage, volatilization, etc.). The use of a more realistic model of PCB fate and transport in the Spokane River would support the development of a more reasonable TMDL.

Response:

The EPA disagrees with the assertion that there is a contradiction in the descriptions of PCB processes and model assumptions. In excluding a process from mass balance calculations, the EPA is not asserting that a given process does not occur in the environment. Rather, the intentional exclusion of a loss mechanism is part of an environmentally protective approach to fate and transport estimation, where exclusion of a loss process provides a margin of safety for the TMDL.

The EPA disagrees that the data cited by the commenter provide suggestive evidence that mass loss mechanisms are important, and that they demonstrate that the mass balance model assumptions are overly conservative and that higher upstream mass loading could be protective at the Spokane Reservation boundary. The mass balance model predicts lower PCB concentrations downstream of the peak concentration in the city (consistent with measured PCB concentrations in August 2014), but the reductions are caused not by loss mechanisms (e.g., volatilization, biological uptake, chemical breakdown) but rather by inflow of regional groundwater that has a lower PCB concentration than the river.

See also response to comment 7.3, regarding mass balance modeling assumptions. Regarding why the EPA used the mass balance approach in the TMDL project, see response to comment 2.3.2.

4.15 Comment:

The draft TMDL does not explain how achieving load allocations will restore beneficial uses in the Spokane and Little Spokane River. Under the Clean Water Act, the goals for a TMDL are not limited to attainment of water quality standards in the water column but also include elimination of all of the water body impairments. The Spokane River is designated as water quality impaired because fish contain levels of PCBs that are unsafe for human consumption. While the draft TMDL acknowledges the current impairment associated with fish consumption, the draft document focuses exclusively on attainment of water quality standards in the water

column. The simplistic mass balance model used to support load allocations and allocation concentrations ignores the accumulation and storage of PCBs within the river system (i.e., in fish tissue, other biota, and sediments). The draft TMDL does not address how recirculation of PCBs already present in the river system may affect restoration of beneficial uses of the rivers. While work by SRRTTF has identified a number of complexities in the relationship between discharges of PCBs into the Spokane River system and PCB concentrations in fish tissue, these complexities are ignored in the TMDL.

The final TMDL should focus more directly on how USEPA's proposed TMDL will restore beneficial uses by focusing more on the importance of PCB concentrations in fish tissue. There is no discussion in the TMDL of the acceptable concentration of PCBs in fish tissue that must be attained to restore this beneficial use of the river. The final TMDL should specify what fish tissue PCB concentrations would return the river to a Category 1, non-impaired, listing. While existing PCB concentrations in the water column are difficult to accurately measure due to the very low concentrations, the bioconcentration of PCBs in fish tissue allows for much more accurate measurement. Thus, monitoring of PCB concentrations in fish tissue provides both a more accurate and a more direct assessment of progress towards restoration of the beneficial use of the Rivers. For this purpose, it is necessary to define the end goal of the TMDL in terms if PCB concentrations in fish tissue.

Response:

The EPA disagrees that the TMDL project "does not explain how achieving load allocations will restore beneficial uses in the Spokane and Little Spokane River." The tribal water quality standard set its human health criteria at a level necessary to restore designated uses and the TMDL project set its allocations to achieve the human health criteria. Therefore, the TMDL project is necessarily and directly meant to restore designated uses at the Washington-Spokane Tribe border. As the tribal criteria are more protective of the designated uses than the Washington criteria in the project area, the TMDL project will restore those uses as well.

As explained in response to comment 4.7, the TMDL project is developed to achieve the applicable human health criterion (1.3 pg/L total PCBs) in the water quality standards of the Spokane Tribe, which is established at a level that is protective of the fish consumption beneficial use. As explained in Section 2 (PCB Water Quality Standards) and Appendix A (Applicable PCB Water Quality Standards) of the TMDL document, the applicable water quality criteria for PCBs for the Washington and the Spokane Tribe are expressed as water column concentrations of total PCBs, and total PCBs are the sum of all congener, isomer, homolog or Aroclor analytes. It is not necessary to link the water quality model to a bioaccumulation model, because the applicable water quality criteria are expressed as water column concentrations.

Therefore, it is not necessary to define the end goal of the TMDL project in terms of fish tissue concentrations. The EPA supports the monitoring of fish tissue to track progress toward meeting TMDL goals.

Regarding the robustness of the modeling approach, see response to comment 4.14.

5 Hayden Area Regional Sewer Board

5.1 Comment:

The Hayden Area Regional Sewer Board (sometimes hereafter referred to as "HARSB") is an Idaho Joint Powers Board comprised of three separate public entities: City of Hayden, Hayden Lake Sewer District and the Kootenai County Airport. HARSB owns and operates a publicly owned treatment works (POTW) which provides wastewater treatment services for each of its member entities. The POTW currently discharges to the Spokane River through Outfall 001 pursuant to existing Idaho IPDES Permit ID0026590. The existing Permit became effective on June 1, 2024.

The Hayden Area Regional Sewer Board is committed to the fundamental goals of the Clean Water Act and improving water quality as a means of protecting public health and supporting a high quality of life for our communities and our region. The HARSB takes seriously our role as a steward of water quality within the Spokane River watershed as demonstrated by completion of regular compliance sampling and reporting, development of various management plans, infrastructure investments to meet current discharge limits, and voluntary participation with the Spokane River Stewardship Partnership and Spokane River Regional Toxics Task Force (SRRTTF).

The Hayden Area Regional Sewer Board intends to continue this stewardship by operating the Hayden Area Regional Sewer Board Water Reclamation Facility utilizing all necessary staff, equipment, power, best management practices (BMPs) and chemicals to meet applicable water quality discharge limits while employing a sustainable, cost-efficient, and effective treatment methodology.

The HARSB spent time and resources reviewing the Spokane and Little Spokane Rivers Polychlorinated Biphenyls Total Maximum Daily Loads Public Comment Draft (Draft TMDL). As a result, HARSB would like to provide the following comments related to the draft document.

Response:

Comment noted. The EPA has added information about HARSB's involvement in the SRRTF and commitment to meet applicable water quality discharge limits in a sustainable, cost-efficient, and effective way in Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document.

5.2 Comment:

The EPA needs to implement PCB source control under TSCA by reducing PCB level from 50.0 mg/l to less than 0.005 mg/l. The EPA actions in pollutant source control, particularly in Pretreatment Programs, have been very successful in reducing pollutants from the wastewater.

It is extremely disappointing that the EPA has rejected Ecology's 2024 PCB Toxic Substances Control Act (TSCA) Petition, which specifically asked the EPA to take action to reduce the inadvertent generation of PCBs in consumer products. EPA allows concentrations of PCBs in inks and dyes up to 50 parts per million (ppm), a value over 38 billion times higher than the aspirational WQS of 1.3 pg/L See the table below. EPA has repeatedly stated that there is no evidence that PCBs at the allowed levels in inks and dyes pose a threat to human health. It is nonsensical under the Clean Water Act or environmental justice for EPA to chase unmeasurable levels of PCBs in the Spokane River when it allows concentrations of PCBs of 50 ppm in toothpaste, soap, shampoo, dish soap, laundry detergent, clothing, paint, caulking, and a myriad of other everyday products. EPA should not be allowing PCB to be added to the environment through manufactured goods at high concentration and then expect public water treatment facilities to remove them. Even if the draft TMDL is implemented, there can be no reasonable assurance of achieving water quality until EPA acts to remove PCBs from the stream of commerce.

The Board requests that the EPA reconsider its position with regard to Ecology's TSCA Petition and that the EPA take action to lower the acceptable PCB concentrations in consumer products to levels commensurate with the water quality standard imposed by this TMDL. A new TSCA PCB level of less than 5 parts per billion for all PCB's materials would reduce the introduction of PCB's into environmental (sic).

Relationship Between the Federal Allowance for PCBs in Products and various Water Quality Standards

Reference	PCB Concentration (parts per quadrillion)
Federal TSCA PCB Allowance	50,000,000,000.0
HARSB Average Effluent	70.0
EPA Water Standard	9.0
Spokane Tribe Water Standard	1.3

In response to these comments, please respond to the following questions:

Does the EPA contend that it is possible to achieve the PCB water quality criteria without TSCA reform? If so, please explain in detail how that is possible or reasonable. Why is the EPA refusing to reform the TSCA PCB Federal material allowance as a pollutant source control action?

Response:

The EPA acknowledges that the PCB allocations are very small due to their persistence and the toxicity it poses. Regarding the feasibility of attaining allocations, see response to comment 3.1.1 and Section 5.10 of the TMDL document (Reasonable Assurances). As stated in that response, TMDLs must be written to meet water quality criteria (40 CFR 130.7(c)(1)), and water quality criteria must be set to protect the designated uses of a water body (40 CFR 131.11(a)(2)). As also stated in response to comment 4.3, TSCA regulations are established under a separate Federal statute and do not determine allocations required under the CWA. EPA's reasoning for denying Ecology's TSCA rulemaking petition can be found at 89 FR 24824. R For more information on TSCA, see responses to comments 4.3, 7.2.3, and 14.10.

5.3 Comment:

EPA cannot rely on an unapproved test methods to apply numeric water quality criteria. The EPA-approved test method in 40 C.F.R. Part 136 for measuring PCBs is Method 608.3. 40 C.F.R. § 136.3 Table 1C, Part 136, Appx. A, Meth. 608.3. In 2023, the EPA issued a proposed rule for its newest methods update, again designating the most recent version of Method 608 as its only 40 CFR Part 136 approved method for measuring PCBs.1. Under the EPA approved water quality standards for the state of Washington, Ch. 173-201A WAC, only EPA approved test methods may be used to apply water quality standards. WAC 173-201A-260(3). With respect to test methods, the standards state:

The analytical testing methods for these numeric criteria must be in accordance with the "Guidelines Establishing Test Procedures for the Analysis of Pollutants" (40 C.F.R. Part 136) or superseding methods published. WAC 173-201A-260(3)(h).

The EPA approved water quality standards for Washington further require that in applying numeric criteria for water quality, Ecology, in this case EPA, "will give consideration to the precision and accuracy of the sampling and analytical methods used." WAC 173-201A- 260(3)(g) It is undisputed that Method 1668C is an inherently unreliable water quality test method. EPA has repeatedly declined to approve Method 1668C as a 40 C.F.R. Part 136 method for this very reason. One of the primary concerns with Method 1668C was the "ubiquitous problem of background contamination." After considering this data and the comments, the EPA declined to approve Method 1668C.

As pointed out by the Washington Supreme Court, Ecology has made representations regarding the unreliability and inaccuracy of Method 1668C: "[a]s Ecology points out, Method 1668C is unreliable because that test does not allow Ecology to determine whether any of the PCBs detected come from the discharger, the test container itself, or the ambient air."

The EPA has relied on Method 1668C data from surface water sampling that was conducted at the direction of the Spokane River Regional Toxics Task Force (SRRTTF) for the purposes of developing a semi-quantitative assessment for PCB sources to the Spokane River. The data was not collected for regulatory use in NPDES permits or a TMDL. SRRTTF Quality Assurance Project Plans have made clear that its data collection efforts were "not intended to satisfy the requirements of data collection needs for regulatory undertakings such as evaluating compliance with applicable water quality standards for PCB or developing information for Load or Waste load Allocations."[2]

Method 1668C is prone to interference and is particularly unreliable at low PCB concentrations. This is supported by the Ecology PWM, which states:

- "When PCB concentrations are very low, background contamination in lab or field blanks may interfere with the calculation of total PCB." Id., at [PWM, ay 255].

- "[T]here are known problems in regard to repeatability and accuracy of the [1668C] method in additional to the expense of the analysis." Id., at [PWM, at 256].

It is well documented that PCBs are ubiquitous in the environment and as a result 1668C has issues at low level detection because PCBs contaminated laboratories, blank samples, and samples from other sources.[3] The 1668C test method is simply not accurate at low levels because PCBs are "everywhere in the environment" and laboratories are unable to separate the "general presence of PCBs everywhere in the environment from what's in the specific sample that's being tested by the laboratory."[4] There is scientific consensus that it is extraordinarily difficult to accurately measure the concentration of PCBs at low levels.[5] This data may be suitable for a semi-quantitative analysis of mass PCB loading but it is not sufficient or appropriate for regulatory purposes.

In response to these comments, please respond to the following questions:

Response:

Regarding the regulatory authority for data and testing methods, see responses to comments 5.3.1 through 5.3.8 and 8.5.

5.3.1 Comment:

Please identify the specific statutory and regulatory authority to use an unapproved test method for a TMDL.

Response:

See response to comment 8.5.1.

5.3.2 Comment:

Does the EPA contend that it is authorized to use an unapproved test method for the TMDL under the terms of 40 C.F.R. Part 136? If so, please state the specific section and language on which the EPA relies for this authorization.

Response:

See response to comment 8.5.1.

5.3.3 Comment:

Does EPA admit or deny that it is bound by the EPA approved terms of WAC 173-201A-260(3) that the analytical methods for water quality criteria in Washington must be approved by the EPA? If you admit, please explain your interpretation of the language that allows the EPA to use an unapproved test method for a TMDL.

Response:

See response to comment 8.5.1.

5.3.4 Comment:

Why did the EPA disregard the fact that SRRTTF 1668C data was collected for a semi-quantitative purpose and was not intended to be used for any regulatory purposes? Please explain why the EPA ignored the terms of QAPPs approved by the SRRTTF and Ecology in this regard.

Response:

See response to comment 8.5.4.

5.3.5 Comment:

Why did the EPA rely on data collected by the SRRTTF in the critical low flow periods in August? Does EPA consider this data representative of PCB concentrations in the Spokane River?

Response:

See response to comment 8.5.5.

5.3.6 Comments:

As noted in the model report (Appendix C), EPA selected August 2014 for the model evaluation and source assessment because this period had the best coverage of synoptic monitoring locations. This data is representative of PCB concentrations for that period.

Response:

Comment noted.

5.3.7 Comment:

What quality assurance project plan did the EPA develop for the qualification of flagged data? Did EPA exclude any flagged data from its analysis?

Response:

See response to comment 8.5.6.

5.3.8 Comment:

Why is the EPA relying on PCB test 1668C data that is orders of magnitude below a threshold level used in other watersheds nationwide and in the State of Washington?

Response:

See response to comment 8.5.8.

5.4 Comment:

The EPA has not established, nor can it establish that the Spokane River below Long Lake Dam is failing to meet water quality standards. The EPA does not appear to have quantitative data that PCBs are present in the water column of the Spokane River below Long Lake Dam. Ecology has published a report on PCB sampling in the Spokane River near the boundary of the Spokane Tribe of Indians waters.[6] In that report, Ecology determined that it could not confirm the presence of PCBs in the river due to the presence of PCBs in sample, travel, and lab blanks.

It is readily apparent, despite the use of a high-volume collection technique, that the blank concentrations of PCBs were in some cases as high, or higher than the sample concentration. This is why Ecology made clear in their report that the data would be "considered to be semi-quantitative and will not be used for formal assessment of water quality criteria attainment."

In response to these comments, please answer the following question:

What data and what source data, collected below Long Lake Dam, did the EPA rely on to determine that the Spokane River is not meeting the Tribal PCB criterion in Tribal waters?

Response:

The EPA disagrees with the commenter that the EPA has failed to establish that Long Lake is impaired for PCBs. See response to comment 8.6.1.

5.5 Comment:

The EPA does not have reasonable assurances that the TMDL will result in the attainment of applicable water quality standards. The EPA states in the PCB TMDL that they must have reasonable assurances that the PCB TMDL will result in the attainment of the subject water quality standards. The EPA should concede that wastewater treatment plants in Idaho and Washington will not yield additional reductions in PCB loading from discharges subject to individual NPDES permits. The Spokane River wastewater treatment plants have installed the most advanced state- of-the-art tertiary membrane treatment systems that effectively remove in excess of 99% of the PCBs. Ecology has determined that the membrane wastewater treatment technologies meet the definition of all known, available and reasonable methods of prevention, control and treatment (AKART) for the reduction of PCBs.

Response:

The EPA disagrees that the TMDL project lacks reasonable assurances that will result in the allocated loads being attained. See response to comment 16.4. NPDES effluent limits in permits for point sources identified in this TMDL document are required to be consistent with the TMDL's wasteload allocations. Regarding attainability of allocations, see response to comment 3.1.1. Regarding Idaho sources, see response to comment 2.2. The EPA acknowledges the installation of advanced treatment at the wastewater treatment plants and the benefits of those technologies for removal of PCBs in Section 5.10 (Reasonable Assurances) and Appendix E (Implementation Actions) of the TMDL document.

5.5.1 Comment

Does the EPA contend that exposure to PCBs at levels above 1.3 ppq pose a threat to human health? If so, please explain why the EPA does not believe that there is information that justifies reconsideration of PCB concentrations allowed under TSCA of up to 50 ppm, over 38 billion times higher than the Spokane Tribal WQS used as the basis for the PCB TMDL.

Response:

Regarding whether exposure to PCB at levels above 1.3 pg/L poses a threat to human health, the Spokane Tribe's 1.3 pg/L water quality criterion for PCBs is based on a risk assessment, which includes assumptions about several factors that influence human exposure and therefore cancer risk, including a fish consumption rate and an acceptable cancer risk level. The water column PCB concentration that poses a threat to human health depends on these and other factors.

Consistent with the EPA's *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000)*, States and Tribes may choose different assumptions, leading to differing water quality criteria for PCBs, which are nonetheless approvable by the EPA, as evidenced by the variability in EPA-approved water quality criteria for PCBs nationwide as well as within the Spokane River watershed.

When developing its water quality criteria for human health, the Spokane Tribe of Indians determined that a water column concentration of PCBs above 1.3 pg/L pose a threat to human health. The EPA approved this water quality criterion because the EPA determined that this criterion protects the Tribe's designated water uses based on sound scientific rationale (40 CFR 131.5(a)(2)). The EPA's approval of this criterion is not necessarily a finding that a less stringent PCB criterion would not also have protected designated uses.

Regarding the EPA's rationale for not reconsidering inadvertent PCB allowances under TSCA, see responses to comments 4.3 and 7.2.3.

5.5.2 Comment

When does the EPA contend that the Spokane River will be in compliance with the 1.3 pg/L water quality standard? Does the EPA admit that its reasonable assurance determination is not based on any timeline or deadline to achieve the water quality standard?

Response:

Regarding TMDL attainability, see response to comments 3.1.1. Regarding attainment and implementation of the TMDL, see responses to comments 4.10 and 16.4.

5.6 Comment:

All stormwater loads must be included in the TMDL model. There was no effort on the part of the EPA to quantify loading from stormwater nonpoint sources beyond the City of Spokane's permitted stormwater discharges. Load allocations should be assigned to all nonpoint sources in the watershed so that the appropriate lead agencies have compliance targets. Stormwater load allocations can be calculated by estimating stormwater flows from ground surface area, land use, and soil types in the watershed. Load allocations should be assigned to other existing industrial, construction, and general stormwater permits in the TMDL study area.

In response to these comments, please answer the following questions:

Will the EPA add the permitted stormwater dischargers to the Spokane River TMDL waste load allocations? Will the EPA include requirements for non-point stormwater sources to be included in the Spokane River PCB TMDL?

Response:

All stormwater in the basin has been included in the TMDL project using available PCB data for stormwater and is addressed in the TMDL wasteload and load allocations. The TMDL assigns wasteload allocations to general NPDES permit discharges and unpermitted stormwater discharges at the same allocation concentration (1.3 pg/L total PCBs) as other sources.

The TMDL model includes the City of Spokane permitted stormwater, and indirectly incorporates nonpoint stormwater loads in the tributary inflows to the Spokane River. The EPA does not have discharge data for stormwater sources other than the City of Spokane. Site-specific inputs for nonpoint stormwater are not mapped and therefore cannot be incorporated into the model. Distinguishing individual nonpoint sources of PCBs, particularly in tributary watersheds, is not possible given the paucity of data. This is not an issue for the TMDL, because setting the allocations for all stormwater to a uniform value at the water quality criterion value of 1.3 pg/L eliminates the need for more detailed stormwater analysis.

Permit writers will consider the load allocations put forth in this TMDL project when considering both new permits and updates to existing permits in future permit cycles and will include more specific targets where appropriate. The level of detail of the wasteload and load allocations strikes an appropriate balance between specificity and generality based on available PCB data and the current 303(d) impairment status for tributary assessment units. As such, the EPA has not calculated more specific allocations for general permit activities or nonpoint stormwater sources in tributary basins. See response to comment 12.12 for additional information. See Section 5.10 (Reasonable Assurances) and Appendix E (Implementation Actions) of the TMDL document for information on actions that have been taken to address stormwater.

6 Idaho Department of Environmental Quality

6.1 Comment:

Thank you for the opportunity to comment on EPA's proposed Spokane and Little Spokane Rivers PCBs TMDLs. These comments have been compiled from concerns raised by our Coeur d'Alene Regional Office and our State Office Water Quality Program, with legal review by the Idaho Office of the Attorney General. It is important to first note that the natural background of PCB will be above the TMDL limits for the foreseeable future and federal law allows for continued PCB pollution. Since municipalities do not manufacture or use PCBs, the TMDL ironically has the effect of punishing the victims of the pollutant of concern with unrealistic targets.

Idaho Department of Environmental Quality's (IDEQ) major concerns of the Spokane River and Little Spokane Rivers PCBs TMDLs are categorized into the following three concerns.

First, IDEQ believes the allocations set in the Draft TMDL are not achievable. The currently EPA approved method for PCB detection will not detect at the ultra-trace levels being prescribed in this TMDL. The suggested method uses a blank correction method to approximate low level concentration. These low- level approximations lack statistical rigor and are not appropriate to be used for CWA regulatory decisions. The draft TMDL states it will require, "increased permitted wastewater discharge treatment, possibly using novel methods specially designed to address chemically persistent toxics." Importantly, there is no available technology that currently exists to remove PCBs from wastewater to the levels required in this TMDL.

Response:

The EPA disagrees that this TMDL project "punishes victims of concern with unrealistic targets." PCBs are toxic, persistent pollutants where low levels can harm people's health. As a result, the applicable PCB water quality standards used to develop the TMDL project are correspondingly low, in order to protect human health. The TMDL project establishes the PCB loads that can be discharged and still attain and maintain applicable water quality standards. It also identifies the current conditions to provide information on potential sources of the problem. Regarding the concept of natural background levels of PCBs, see response to comment 2.17. Regarding the feasibility of attaining the TMDL allocations and technology limitations, see responses to comments 3.1.1.

6.2 Comment:

Second, a simple spreadsheet calculation for inventorying and allocating PCBs in the Spokane River is not appropriate as the river is dynamic with intricate groundwater interactions and several impoundments. When the results have serious regulatory and financial implications for multiple states, municipalities, and industry, relying on a simplistic model is especially problematic. The proposed TMDL's PCB allocations and boundary conditions are based on concentrations that are unmeasurable with today's technologies. The blank correction process used in the proposed TMDLs causes uncontrolled errors in accuracy and precision. The PCB concentrations and resulting values are not of sufficient quality to make regulatory decisions or to be used for permits or compliance assurance.

Response:

Regarding the selection of the mass balance approach and its robustness in this TMDL project, see responses to comments 2.3.2 and 4.14. Regarding PCB methods and detection limits with respect to wasteload allocations, see response to comment 3.1.2.

Regarding the blank correction process, the EPA disagrees that it creates errors. On the contrary, it increases the confidence in the measured concentrations. The EPA used the blank correction process to determine current PCB levels and provide information on the percent reduction that would be needed to achieve allocations. The EPA did not rely on the blank correction process to determine TMDL allocations. The response to comment 2.3.2 and Sections 4 of the TMDL document (TMDL Technical Approach) describes how and why the EPA selected the mass balance modeling approach.

6.3 Comment:

Lastly, the low target concentration of 1.3 pg/L is problematic for implementation and ultimately not achievable. The targets specified in this TMDL do not reflect the realities of implementation for the removal of persistent toxic chemicals in a riverine setting. Contrary to statements in the proposed TMDLs, load reductions cannot be reasonably attained because there are no commercially available technologies to remove PCBs from wastewater to the levels required.

Please refer to the enclosed comments for further detail on these concerns regarding the draft TMDL. Again, IDEQ appreciates the opportunity to comment on the proposed PCB TMDLs and requests you consider the issues we have brought up before finalizing the proposed PCB TMDLs.

Response:

Regarding the feasibility of attaining allocations and technology limitations, see response to comment 3.1.1.

7 Idaho Department of Environmental Quality – Technical Attachment

7.1 Comment:

This document has been prepared by Idaho Department of Environmental Quality (IDEQ) in response to the Draft TMDL “Spokane and Little Spokane Rivers Polychlorinated Biphenyls Total Maximum Daily Loads” prepared by the Environmental Protection Agency (EPA). The intention behind this document is to provide EPA with a more detailed description of concerns voiced in the preceding cover letter. This Technical Attachment is an addendum to IDEQ’s cover letter.

During the development of the PCB TMDLs, IDEQ frequently brought up concerns regarding the use of a downstream water quality standard which is 63.8 miles downstream from the Idaho/Washington border. Further, IDEQ expressed concerns regarding the use of a simplistic and unscientific conservative constituent mass balance modeling approach to develop allocation targets for PCBs based on a model that does not factor ground water/hyporheic

exchange, attenuation, volatilization, sorption, or any other factor that studies have shown remove PCBs from water ecosystems like the Spokane River.

IDEQ's major concerns with the Spokane River and Little Spokane Rivers PCBs TMDLs are categorized into the following: 1) The TMDLs are not achievable, 2) The TMDL model is flawed with PCB pollutant modeling and lacking in scientific rigor, and 3) Implementation is not workable or enforceable. The precedent-setting application of distant water quality standards to upstream states that were not a party to TMDL litigation and implementation of standards through use of vague terms not found in the Clean Water Act (CWA) creates uncertainty about whether the Draft TMDL can be successfully implemented.

Response:

Regarding the boundary condition at the Washington-Idaho border, see response to comment 2.2. Regarding the selection and robustness of the technical approach, see responses to comments 2.3.2, 4.14, and 7.3. Regarding the feasibility of attaining allocations, see response to comment 3.1.1. Regarding implementation, see the response to comment 16.4.

7.2 Comment:

The TMDLs are not achievable. IDEQ believes the allocations set in the Draft TMDL are not achievable for three main reasons: unreliability of method detection, lack of technology for treatment, and pollution sources are diverse and inadequately controlled.

Response:

The EPA disagrees that the TMDL project is not achievable. The EPA acknowledges the challenges in implementing the TMDL allocations. Regarding the unreliability of method detection, see responses to comments 3.1.2 and 14.3. Regarding the lack of technology for treatment, see responses to comment 3.1.1.

7.2.1 Comment:

IDEQ asserts that the method recommended in the TMDL cannot be reliably implemented because the approximation of ultra-trace concentrations is inconsistent due to the use of blank correction. These ultra-trace approximations lack statistical rigor and are not appropriate for CWA regulatory decisions. The Spokane River Regional Task Force (SRRTTF) attempted to measure PCBs in the Spokane River using EPA Method 1668 (the method used in attaining data for the TMDL). SRRTTF found that the concentrations of total PCBs in the water samples from the Spokane River averaged 171 pg/L before blank correction but averaged 88 pg/L in the blanks (Rodenburg et al., 2020). In this study, field blanks averaged 130 pg/L (range of 30 to 1064 pg/L) while method blanks (ultrapure water not exposed to the field) averaged 56 pg/L (range 23 to 768 pg/L). The fact that blank results were almost a magnitude of order higher

than the allocations assigned in this TMDL demonstrates the pervasiveness of PCBS and the difficulty of measuring, with confidence of the source of PCBs, at these ultra-trace levels. According to the SRRTTF, many samples collected in the river show zero concentration, yet we know that the fish PCB levels still exceed the fish tissue equivalent concentration (FTEC) set by the State of Washington during this period.

Response:

Section 3.3 of the TMDL document (Current Conditions and Recent Exceedances) describes current PCB levels in the Spokane and Little Spokane Rivers. Regarding concerns on monitoring detection limits and TMDL project requirements, see response to comment 14.3.

7.2.2 Comment:

The draft TMDL states it will require, "increased permitted wastewater discharge treatment, possibly using novel methods specially designed to address chemically persistent toxics." Importantly, there is no available technology that currently exists to remove PCBs from wastewater to the levels required in this TMDL. All wastewater treatment plants in Idaho that discharge into the Spokane River have successfully upgraded their processes to use membrane filtration as a tertiary treatment process. This is an extremely aggressive form of treatment that reduces PCB levels as low as possible (Rodenburg et al., 2022). In other words, there is no treatment process available that can reduce PCBs further. Should these allocations be incorporated into individual permits, then even facilities using advanced treatment technology such as membrane filtration would be unable to comply with the terms of their permits. This results in potential harm to wastewater treatment plants when they are held to an unachievable load allocation under the TMDL.

Response:

The EPA disagrees. The TMDL document does not state that it requires "increased permitted wastewater discharge treatment, possibly using novel methods specially designed to address chemically persistent toxics[,]" but rather identifies wastewater treatment as a focus area for inclusion in Ecology's implementation plan.

Water quality criteria for any pollutant that causes a water to exceed water quality standards must be set at a level that attains and maintains a waterbody's designated uses (40 CFR 131.11(a)(2)). The feasibility of achieving low concentrations of pollutants that are necessary to protect designated uses is not a consideration in deriving numeric water quality criteria. See response to comment 3.1.2. TMDLs must be established at levels necessary to attain and maintain applicable water quality standards with seasonal variations and a margin of safety (Section 303(d)(1)(C); 40 CFR 130.7(c)(1)). As such, feasibility concerns are not a basis to establish a less stringent loading capacity in a TMDL.

However, the EPA acknowledges the challenges in reducing point source discharges of PCBs to the wasteload allocation concentrations in Section 5.10 of the TMDL document (Reasonable Assurance). Regarding the lack of technology to meet allocations, see response to comment 3.1.1. See response to comment 7.4.1 and 16.9 on options and considerations for NPDES permit conditions.

7.2.3 Comment:

The proposed TMDL is unachievable because federal law allows for continued PCB pollution many times above the proposed limit. The Toxic Substances Control Act (TSCA) allows for PCBs in domestic or imported goods up to 50 ppm or 50 mg/L (40 CFR part 761.1(3)). With this allowable PCB source limit in ubiquitous consumer goods, there is no possible mechanism to remove PCBs in the environment down to a level that meets TMDL targets. This allowance of PCB pollution from imported goods and manufacturing places the burden of removing PCBs on municipalities instead of preventing PCB pollution from the source along with the potential for punishment when they fail this impossible task.

Response:

Limits for PCBs under TSCA regulations are established under a separate federal statute and do not determine allocations required to meet WQS under the Clean Water Act. Although the EPA agrees that both inadvertent and legacy (Aroclor) PCBs contribute to the PCB impairments in the Spokane and Little Spokane Rivers, positive matrix factorization (PMF) analysis shows that about 90% of the PCBs in the Spokane River water column are from Aroclors (Rodenburg 2022; https://srrttf.org/wp-content/uploads/2022/02/5-Holistic-draft-5.pdf). If TSCA regulations were amended, the regulations would apply to inadvertent PCBs, which represents a small percentage of the overall PCBs in the TMDL project area. The EPA's reasoning for denying Ecology's TSCA rulemaking petition can be found at 89 FR 24824. For further information on TSCA, see responses to comments 4.3, 5.2, and 14.10.

7.2.4 Comment:

Background sources alone, including atmospheric deposition, are large enough to exceed the TMDL. Rodenburg (2022) calculated in a report for the SRRTTF that atmospheric deposition alone leads to concentrations of total PCBs in the Spokane River, near the City of Spokane and the Spokane Valley of between 5 and 27 pg/L. This exceeds the Spokane Tribe of Indians 1.3 pg/L standard and may potentially exceed the State of Washington 7 pg/L standard. Atmospheric deposition of particles typically delivers relatively high molecular weight PCBs to water bodies (Rodenburg et al., 2019), and these are the congeners that are most likely to bioaccumulate in fish (Arnot and Gobas, 2003; Arnot and Gobas, 2006; Gobas and Arnot, 2010). In short, the natural background of PCB will always be above the TMDL limits and federal law

allows for continued PCB pollution. Since municipalities do not manufacture or use PCBs, the TMDL ironically has the effect of punishing the victims of the pollutant of concern.

Response:

The EPA agrees that reductions in multiple types of PCB sources, including atmospheric deposition, will be necessary to achieve the load and wasteload allocations in the TMDL project. These reductions are necessary to meet applicable water quality standards. Regarding the concept of natural background levels of PCBs, see response to comment 2.17. Regarding the usefulness of the TMDL document to reduce PCBs, see response to comment 6.1.

7.3 Comment:

Many of the assumptions and methods used to develop this TMDL are inherently flawed. IDEQ acknowledges that EPA had a constricted timeline to finalize this TMDL, but proper scientific analysis should not be negated to reach the finish line with a rushed product that is not accurate, achievable, or implementable. A simple spreadsheet calculation for inventorying and allocating PCBs in the Spokane River is not appropriate as the river is dynamic with intricate groundwater interactions and several impoundments. When the results have serious regulatory and financial implications for multiple states, municipalities, and industry, relying on a simplistic model is especially problematic.

The flaws in the TMDL model being used in the draft TMDL include the following:

Response:

The EPA disagrees with the commenters claims that the modeling supporting the TMDL project is flawed, based on the following responses to comments 7.3.1 through 7.3.8 to each assertion under the summary comment.

7.3.1 Comment:

The TMDL model treats PCBs as a conservative tracer. It does not consider loss processes including volatilization and groundwater losses. All other water quality models for PCBs that rely on the WASP architecture, including the models of the Delaware River (Delaware River Basin Commission (DRBC), 2006), the upper Hudson River (EPA, 1999; Connolly et al., 2000), the New York-New Jersey Harbor (HydroQual, 2007) and the Fox River (Steuer et al., 1995), all consider volatilization as an important loss process. In other words, why would all other models consider PCB loss in the environment, but the Draft TMDL would ignore it? Importantly, the water quality model for the New York-New Jersey Harbor (HydroQual, 2007) found that volatilization might have been underestimated for low molecular weight PCBs, for example those containing one or two chlorines. Rodenburg et al. (2022) examined the loads of PCBs from the wastewater treatment plants on the Spokane River and found that the adoption of

membrane filtration preferentially removes the high molecular weight PCBs, leaving a lower molecular weight PCB signal in the river, i.e. the PCBs most likely to undergo volatilization. This is why it is important to consider both volatilization and atmospheric deposition. Atmospheric deposition of particles is likely to introduce high molecular weight PCBs to the river, whereas volatilization removes the low molecular weight congeners. In summary the failure to parameterize volatilization in the TMDL model for the Spokane River may underestimate current loss processes, leading to a lower TMDL, and this underestimation is likely to get worse in the future as the mix of PCBs entering the Spokane River becomes lower in molecular weight. Rodenburg (2022) calculated mass transfer coefficients for volatilization of PCBs in the Spokane River utilizing the same approach used in the water quality model of the NY/NJ Harbor and found that they were roughly equal to the rate of water transport downstream. This means that adding volatilization to the TMDL model would cause the calculated TMDL to increase by about a factor of two. Volatilization has the most impact on sources further upstream since they have more time to volatilize as the river flows downstream. Therefore, the failure to consider volatilization has the most impact on the load at the state line and unfairly impacts the State of Idaho.

Response:

The comment asserts that this process is handled differently in other PCB projects around the country, and volatilization is a significant process removing up to half of the PCBs from the Spokane River. On the contrary, the EPA's mass balance model results refute this claim, because the mass balance calculations for August 2014 result in reasonable agreement with instream PCB concentrations without subtracting any PCBs due to volatilization and other loss processes. The mass balance analysis indicates that volatilization is not removing a substantial amount of the mass of PCBs from the river as asserted in the comment, and the findings of the analysis support the reasonableness of the EPA's approach to exclude volatilization as part of the margin of safety.

7.3.2 Comment:

Groundwater losses are also important but are currently ignored in the TMDL model. The EPA framework for the TMDL indicates that the Spokane River is a losing reach on the Idaho side of the border (and downstream), with about 400-500 cfs lost in that segment which is approximately 25% of the modeled harmonic mean flow. The model assumes that the PCBs lost via infiltration of groundwater re-enter the river when the groundwater re-enters the river. That assumption is not supported by any scientific evaluation. The aquifer solids have low organic carbon content, but this does not mean that no sorption takes place. At the very least, the growth of biofilms on the surfaces of submerged rocks and sediments would provide organic material for sorption (Era-Miller and Wong, 2022), and these are likely to penetrate the

riverbank until oxygen is depleted. PCBs would sorb to this biofilm and other aquifer materials, being removed from the system and not reentering at some later point. This treatment of groundwater in the model is in direct conflict with the draft TMDL's own recommendation that stormwater infiltration basins can reduce PCB loads. Why would interaction with the soils remove PCBs from stormwater but not from river water? A more reasonable approach would be to assume that PCBs that exit the river via infiltration into groundwater sorb to aquifer solids and are lost from the system. If 25% of the water is lost from the system, then 25% of the PCBs in the water column are also lost from the system via this process. Properly accounting for this process would therefore cause a corresponding increase in the calculated TMDL.

In section 3.1.3 of the draft TMDL, EPA specifies that contaminated groundwater is a source of PCB contamination in the gaining reaches of the river. This admission means that the losing reaches of the river between Coeur d Alene Lake and the Spokane Valley needed to be evaluated to determine if PCBs are lost to the groundwater along with other factors that may attenuate PCBs. The assumption that PCBs are only gained from ground water and not lost in a mass balance approach is inherently flawed and biased.

Response:

These comments on groundwater incorrectly assert that the EPA's mass balance model does not properly account for the loss of groundwater to the aquifer in losing reaches of the river. The model does remove the mass of PCBs that exits the river into the groundwater in losing reaches, as noted in Sections 4 and 5 of the TMDL as well as Appendix C. The allocated loading table in Section 5.5 of the TMDL clearly shows the calculated loss of PCBs from the river to groundwater. This loss is represented in the equation provided in Appendix C, copied below, to calculate the PCB concentration in the river – see the last term in the numerator, which is the groundwater mass of PCBs, with the plus-or-minus sign indicating that groundwater can either add or subtract PCB mass to/from the river.

$$C_d = \frac{\left(Q_u C_u + Q_t C_t + Q_e C_e + Q_s C_s + Q_c C_c \pm Q_{gw} C_{gw}\right)}{Q_d}$$

In losing reaches, the PCB mass that is removed from the river does not return to the river in the mass balance calculations. In gaining reaches, the groundwater inflow rate is coupled with the regional groundwater PCB concentration to calculate the inflowing PCB mass. Note that the TMDL project sets a uniform total PCB concentration (1.3 pg/L) all inflows to the river, and the river concentration is also 1.3 pg/L under these allocations, so the inflowing groundwater and outflowing river (to the aquifer) have the same concentration of PCBs under the TMDL allocation scenario.

7.3.3 Comment

In addition to omitting various loss processes, the model ignores various loads. It does not include an internal load from resuspension of sediment especially above the Post Falls dam or any of the other dams in the river.

Response:

The upstream boundary of the model is downstream of Post Falls Dam, so it is not possible to include a calculation in the model for the sediments behind the dam. More generally, the TMDL project is focused on the PCB concentrations in the water column, and there is uncertainty in the relative importance of PCB fluxes into the water column from bedded sediments compared to other sources. In its comprehensive summary of available information on PCB source loadings, the SRRTTF noted the lack of site-specific data and estimated the uncertainty in loading from sediments at a factor of twenty (0.05 – 20 mg/day). Additionally, SRRTTF reasonably hypothesized that most of this loading would occur in Long Lake, but SRRTTF sampling was conducted entirely upstream of Long Lake Dam, so there is no data to estimate the impact of sediment fluxes in the lake. The EPA's mass balance model (Appendix C in the TMDL document) does include Upriver and Ninemile Dams, and the model predicts reasonably accurate PCB concentrations in the river for August 2014 without inclusion of PCBs from sediment flux into the water column. This suggests that sediment fluxes may be substantially lower in magnitude than the sources included in the model (upstream boundary conditions, point sources, tributaries, regional groundwater, and contaminated groundwater).

To account for PCB loadings from riverbed sediments in the TMDL allocations, the EPA has revised the TMDL document to incorporate this source in the load allocation assigned to groundwater and diffuse sources. See Section 5.4.2 (Regional Groundwater and Diffuse Sources); the EPA has also moved references to sediments in Section 5.4.4 into Section 5.4.2. This load allocation applies to PCBs entering the water column by diffusive flux from the bed sediments and resuspension of contaminated sediments from the bed. Since the mechanism of PCB loadings from this source are not associated with a discharge, evaluation of bed sediment contributions should focus on estimating mass loads to the river (mg/day).

In addition, the TMDL project assigns PCB allocations that apply to total (unfiltered) water samples for sources to the river. To the extent that source loadings are comprised of substantial PCB levels in suspended and settleable solids, implementation of the TMDL project will result in reductions in contaminated solids in source discharges. For example, stormwater utilities can reduce PCB levels in stormwater by removing settled solids in stormwater catch basins so they do not become re-entrained in stormwater events. Long term reductions in sediment-bound PCBs in discharges to the river should improve the quality of river bed sediments, with gradual

burial and replacement of legacy contaminated sediments as cleaner sediments are deposited over time. This will reduce the diffusion and resuspension of PCBs into the water column from the sediments over the long term.

7.3.4 Comment

It also does not include atmospheric deposition loads of PCBs within the TMDL boundary, which, as noted earlier in this comment, may be high enough to make the TMDL unachievable.

Response:

Regarding air deposition of PCBs, atmospheric deposition in the upper watershed, particularly deposition across the large surface area of Coeur d'Alene Lake, is captured in the assignment of boundary condition concentrations to the river at the Washington-Idaho border. The comment that the TMDL project ignores deposition within the TMDL study area is incorrect. Atmospheric deposition in tributary watersheds in Washington and Spokane Tribe areas is captured in tributary allocations and boundary condition concentrations to those waters, respectively. For the much smaller amount of air deposition on the water surface of the Spokane River, if new information indicates that additional allocations for this source are necessary, the EPA can revise the TMDL project to assign an allocation.

7.3.5 Comment

The draft TMDL assigns a lower boundary condition to the Spokane River at the Idaho/Washington state line, which is not supported by the science. Figure 14 of the draft TMDL shows that PCBs entering the river at the state line are diluted by more than a factor of two before they reach the tribal lands where the WQS decreases to 1.3 pg/L, even under the assumptions of the draft TMDL model that there are no losses to groundwater or volatilization. If these losses were included, it is likely that the boundary condition at the state line could be set to the Washington standard of 7 pg/L without exceeding the tribal standard downstream.

Response:

The EPA disagrees that the assignment of 1.3 pg/L total PCBs at the Washington-Idaho border is not supported by science. The EPA's mass balance analysis evaluated levels at the border that, in concert with other allocations in Washington and a Washington-Spokane Tribe boundary condition border waters, would achieve the TMDL allocations. The selection of 1.3 ug/L is consistent with the findings of this technical analysis. The comment incorrectly states that the model does not account for losses to groundwater; the model does include the mass loss of PCBs to groundwater in losing reaches of the Spokane River. The comment also speculates that inclusion of PCB losses to volatilization would allow higher concentrations at the border, but no information is provided that indicates that this process is significant, and the EPA's assumption of no volatilization is part of the margin of safety. See other responses to comment under 7.3.

7.3.6 Comment

The TMDL is designed to achieve a concentration in the fish tissue that is safe for human consumption. Idaho IDEQ is concerned that as the implementation of membrane filtration removes high molecular weight PCBs from effluents (Rodenburg et al., 2022), the concentrations of total PCBs in the water column might continue to exceed the WQS due to the low molecular weight PCBs that continue to be emitted, but the levels in fish may decline to acceptable levels because low molecular weight PCBs do not bioaccumulate very effectively (Arnot and Gobas, 2003; Arnot and Gobas, 2006; Gobas and Arnot, 2010). Currently the model includes no linkage between the water column PCB concentrations and the fish concentrations. The only way to accurately model the fish concentrations is to construct a water quality model that treats each PCB homolog separately, and then link the water quality model with a bioaccumulation model. This approach is commonly used elsewhere (Connolly et al., 2000; HydroQual, 2007). The model as it stands is currently too simplistic to accurately account for differences in bioaccumulation potential of different PCB homologs.

Response:

As explained in Section 2 (PCB Water Quality Standards) and Appendix A (Applicable PCB Water Quality Standards) of the TMDL document, the applicable water quality criteria for PCBs for Washington and the Spokane Tribe are expressed as water column concentrations of total PCBs, and total PCBs are the sum of all congener, isomer, homolog or Aroclor analytes.

As such, it is not necessary to use a water quality model that treats each PCB homolog separately. Even if such a model was used, the sum of PCB homologs would nonetheless need to be less than or equal to the applicable total PCB water quality criterion.

Likewise, it is not necessary to link the water quality model to a bioaccumulation model, because the applicable water quality criteria are expressed as water column concentrations. Although bioaccumulation of PCBs in fish tissue is an important factor in human exposure and in the derivation of water quality criteria for PCBs, this is addressed by using a bioconcentration factor in the derivation of the water column criteria. See also response to comment 4.15.

7.3.7 Comment

Atmospheric deposition of PCBs within the State of Washington is not accounted for in section 3.1.5 of the draft TMDL. EPA correctly states that “bulk atmospheric deposition is ubiquitous and occurs at any location, even far-flung areas away from any urban or industrialized land uses”. However, EPA goes on to claim that the bulk of the atmospheric deposition in the Spokane River is primarily from the large surface area of Coeur d’Alene Lake (49.8 Square miles/51.2% of the surface water area of the basin) and not from direct deposition in the Spokane River system within the borders of Washington because the River has a “low free

water (e.g. lakes, ponds, rivers) with a surface area of only 1.6%". EPA had no surface water area numbers other than Coeur d'Alene lake or maps to support the 1.6% number, and DEQ believes the 1.6% surface water area calculation of the Spokane River in Washington is an underestimation based on the assumption of a free flowing (low residence time) river system from Post Falls to the Spokane Tribal boundary. EPA omitted the large surface area of the slow moving (high residence time) impounded portions of the river for ease of calculation in the conservative constituent mass balance model. There are 6 impoundments along the 122 miles of river between Coeur d'Alene Lake and the Tribal boundary with 59.6 miles of slow-moving reservoir (Figure 1.) with a total surface area of 20.8 square miles; 18.2 square miles of that impounded surface water is in Washington (Figure 2.). On page 30, EPA claims the atmospheric deposition in Washington is primarily from storm water, surface run off and shallow groundwater connectivity while ignoring downstream impounded surface water areas. This omission places a burden on Idaho to reduce atmospheric deposition of PCBs as part of the boundary condition while at the same time ignores atmospheric deposition on downstream impounded waters with a surface area more than one third the size of Coeur d'Alene Lake's surface area.

Response:

The EPA disagrees that atmospheric deposition in Washington is not addressed in the TMDL document. As noted above in response to comment 7.3.4, atmospheric deposition across the landscape in tributary watersheds in Washington and Spokane Tribe areas is captured in tributary allocations and boundary condition concentrations to those waters, respectively. Regarding sources to those tributaries and boundary waters, it is a reasonable assumption that the PCBs in the tributaries are primarily from storm water, surface run off and shallow groundwater connectivity, but these assumptions can be investigated during implementation.

The claim that "EPA omitted the large surface area of the slow moving (high residence time) impounded portions of the river for ease of calculation in the conservative constituent mass balance model" is misleading. As discussed in Section 1.2 of the draft TMDL document (Total Maximum Daily Loads Geographic Scope), free water surface area calculations were based on the USGS National Hydrography Dataset (NHD) and included all surface water polygon features. Air deposition is not included in the model, so this discussion of water surface area in the TMDL project has no connection to the model.

The EPA acknowledges that there is substantial uncertainty in atmospheric deposition loadings, and the surface area estimates in this section may overemphasize the importance of atmospheric deposition at Coeur d'Alene Lake compared to other locations and pathways (e.g., runoff from precipitation). The EPA has removed surface area estimates in the TMDL document

to simplify this discussion, which is intended to provide general information about source categories.

7.3.8 Comment:

In section 3.1.6, EPA addresses PCB sorption to river sediments. EPA states that PCBs readily sorb to fine sediments but they again state the Spokane River is dominated by "free flowing" water with large cobble and gravels typically associated with natural flowing river waters and they assume the water and sediments are in "equilibrium for PCBs". EPA immediately contradicts this statement by detailing Washington Ecology efforts to remove PCB contaminated fine sediments impounded by the numerous dams along course of the river. This contradiction highlights the inherent errors in the conservative constituent mass balance approach to inventorying PCBs without considering attenuation, volatilization or sorption from interactions with sediments.

Response:

The EPA has revised the TMDL to incorporate a load allocation for riverbed sediments. See response to comment 7.3.3.

Similar to the comment above on volatilization, the EPA's mass balance model results refute the claim that sediment contamination is a primary source, because the mass balance calculations for August 2014 result in reasonable agreement with instream PCB concentrations without adding PCBs from the bedded sediments (See Appendix C of the TMDL document). This indicates that bedded sediments are not a primary loading process. The EPA sees no contradiction in statements in the TMDL document that (1) large portions of the Spokane River are free-flowing, (2) past work has reduced PCB sediment contamination in quiescent areas behind dams, and (3) sediment contamination is not a major source and should improve over time.

7.4 Comment:

The low target concentration of 1.3 pg/L is problematic for implementation and ultimately not achievable. The targets specified in this TMDL do not reflect the realities of implementation for the removal of persistent toxic chemicals in a riverine setting. This is supported by the following:

Response:

See responses to comments 7.4.1 through 7.5.3 below.

7.4.1 Comment:

In other states where PCB TMDLs have been promulgated, regulators have been allowed to use non-numeric criteria in writing discharge permits to comply with WLAs (Basin, 2007; Tetra Tech,

2009; Tech, 2018). The State of Idaho requests that this be allowed for permits of facilities on the Spokane River. This is necessary because, as noted above, the wastewater treatment plants discharging to the Spokane River have already upgraded to tertiary treatment in the form of membrane filtration, and there is no commercially available technology to enhance their removal of PCBs beyond this. By clarifying that states can use non-numeric criteria in writing permits, the EPA would allow these wastewater treatment plants to continue operating in compliance with their permits. As stated elsewhere in this comment, it will be impossible for these facilities to meet the draft TMDL limits due to federal law allowing continuing pollution and natural background conditions. It is illogical to subject facilities using the best pollution control technology to potential civil or criminal penalties. Narrative criteria would include initiatives such as PCB source identification and implementation of Best Management Practices (BMPs). Notably, other river systems where PCB TMDLs are in force have not required their wastewater treatment plants to upgrade to membrane filtration, or indeed any form of tertiary treatment. If narrative criteria are good enough for those other river systems, then certainly they are good enough for facilities using tertiary treatment.

Response:

The EPA declines to make the suggested determination as to how this TMDL project will be implemented through NPDES permits, as it would be outside the scope of the TMDL project and more appropriately determined by the NPDES permitting authority at a later time.

Regarding the use of non-numeric criteria, the EPA agrees that permit conditions other than numeric effluent limits, such as best management practices (BMPs) can be appropriate and effective in some cases (40 CFR 122.2, 122.44(k)). The EPA has recommended the use of BMPs in permits to control or abate discharges of PCBs into the Spokane River in the past (https://srrttf.org/wp-content/uploads/2015/07/Spokane-TMDLNotice_of_Filing_EPA-Response_to_Remand_filed_7.14.15.pdf).

Even if future NPDES permits include numeric effluent limits consistent with the wasteload allocations in this TMDL project in order to comply with 40 CFR 122.44(d)(1)(vii)(B), given that the detection and quantitation limits of approved analytical methods are orders of magnitude higher than the wasteload allocations and the applicable water quality criteria, it may nonetheless be appropriate to include BMPs to control or abate PCB discharges in such permits. The EPA's Technical Support Document for Water Quality-based Toxics Control also recommends, for permits that include effluent limits below analytical detection levels, special conditions to help ensure excursions above water quality standards are not occurring; see Section 5.7.3 of the Technical Support Document (EPA 1991). Regarding the concept of natural background levels of PCBs, see response to comment 2.17.

7.4.2 Comment:

Section 4.2.1 details the applicable water quality standards for the Spokane Tribe (1.3 pg/L) and the State of Washington (7 pg/L). In Appendix A: Applicable PCB Water Quality Standards, EPA references 40 CFR 131.10(b) as justification for choosing the Tribal criteria of 1.3 pg/L, and IDEQ acknowledges that the Clean Water Act requires states to meet downstream state water quality standards but just how far upstream are downstream water quality criteria thresholds applicable according to federal rules, regulations and precedent? 40 CFR 131.10(b) is cited by EPA in the TMDL, but 40 CFR 131.10(b) indicates that a state must consider downstream standards. It does not say that a state must consider and abide by all downstream standards regardless of distance. As written by EPA, interstate boundaries are meaningless and essentially all headwaters of the Spokane River system in Idaho are subject to the Spokane Tribal standard. If so, this would result in an impairment of the South Fork of the Coeur d'Alene River within the boundary of the Bunker Hill Superfund site and PCBs should be considered at 1.3 pg/L during the next Record of Decision (ROD) Amendment. It seems incredible that such a limit from so far downstream can be imposed without state consent. Under this rationale, Louisiana could set a zero pollution limit on the Mississippi River enforceable in St. Louis at the confluence with the Missouri River. Is it EPA's position that such a limit would be enforceable all the way up the headwaters of the Missouri River in Montana, even without Montana's consent?

Response:

The response to comment 2.2 discusses the responsibilities for Idaho in considering the boundary condition concentrations assigned to the river at the Washington-Idaho border. Regarding specific questions on the EPA's policies on downstream water quality standards, this is outside the scope of the TMDL project. However, see response to comment 2.2 regarding frequently asked questions on considering downstream water quality standards.

7.5 Comment:

Section 5.4.4 states that EPA is not considering allocations for other sources including atmospheric deposition or legacy contaminated sediments. If these sources are not reduced there is no possible way the 1.3 pg/L target can be met. This is yet another way that the TMDL model is simplistic and flawed. See DEQ Comment section "Flaws in the TMDL Model" for other facts which the draft TMDL model fails to take into account. age 59 (sic) (Room for Growth) states that any new point source will not increase PCB loading as long as it meets the 1.3 pg/L concentration. This is flawed as sources are cumulative and addition of PCBs increases the mass of PCBs despite the concentration of said discharge, loads are calculated by concentration times volume (lake) or discharge (river) not just concentration. With a target concentration of 1.3 pg/L for all sources in the Spokane and Little Spokane Rivers there is no room for growth. This

implies that there will be no future discharge permits until viable treatment methods are developed that can remove 100 percent of all PCB congeners.

Response:

The EPA disagrees that atmospheric deposition and legacy contaminated sediments are not addressed in the TMDL document. Section 5.4.4 of the TMDL document (Atmospheric Deposition) notes that atmospheric deposition is covered by other elements of the TMDL project that require reductions, as follows: "Based on the pathways described in Section 3, atmospheric deposition in the upper watershed, particularly deposition across the large surface area of Coeur d'Alene Lake, is captured in the assignment of boundary condition concentrations to the river at the Washington-Idaho border. Similarly, atmospheric deposition in tributary watersheds in Washington and Spokane Tribe areas is captured in tributary allocations and boundary condition concentrations to those waters, respectively." See also response to comment 7.3.4.

Regarding sediments, the EPA has revised the TMDL to incorporate a load allocation for riverbed sediments. See response to comment 7.3.3.

The assertion that there is no room for growth for additional discharges at a concentration of 1.3 pg/L total PCBs is mathematically incorrect. The introduction of a discharge containing a PCB concentration of 1.3 pg/L, into a waterbody with a PCB concentration of 1.3 pg/L, results in an identical downstream concentration of 1.3 pg/L.

7.5.1 Comment:

In section 5.8 (Reasonable Assurance) of the draft TMDL, EPA states that Idaho is expected to meet the boundary condition of 1.3 pg/L at the Idaho/Washington border and Washington is expected to meet their PCB reduction targets. This is unrealistic and far from "reasonable" for several reasons:

EPA does not elaborate on a specific implementation plan to address reduction in PCBs. Instead, EPA places the burden on the Washington State Department of Ecology to develop the implementation plan that will meet the aggressive TMDL targets. EPA does suggest some strategies to meet the TMDL targets, but the practical suggestions are already in place. For example, EPA suggests increased permitted wastewater treatment will help reach the targets. Idaho and Washington permitted discharges along the Spokane River are already at or in construction to be at the tertiary treatment level so discharges on the Spokane River are already at the highest level of treatment possible other than reverse osmosis and that option is not economically, environmentally, or mechanically viable.

EPA calls for possible “novel methods specially designed to address chemically persistent toxics” to remove PCBs from both point and nonpoint sources. Again, this is not “reasonable” and essentially categorizes this TMDL as aspirational with the hopes that someday a new “novel” treatment technology will be effective at eliminating 100 percent of all PCB congeners for both point and nonpoint sources.

Response:

As explained in Section 5.10 of the TMDL document (Reasonable Assurance), Ecology will be developing an implementation plan for this TMDL. Regarding expectations for Idaho, see response to comment 2.2. Regarding general implementation of the TMDL, see response to comment 16.4.

7.5.2 Comment:

Specifying a target concentration at any compliance point in the river below the detection limits of any established and approved analytical methods for PCBs is also not “reasonable”. Under current analytical methods any sample analyzed may return as less than the Minimum Detection Limit (MDL) or Reporting Limit (RL) even though those samples were likely above the 1.3 pg/L target but show as a non-detection for PCBs. Essentially this means there is no way to know if the target concentrations are being met at the state line or at any other location in the Spokane River.

Response:

As earlier explained, TMDLs must be established at a level that will attain water quality standards. See response to comment 3.1.2.

7.5.3 Comment:

As outlined in IDEQ’s comments, the proposed Spokane River PCB TMDLs numeric criterion is unachievable, Idaho’s contributions are classified as “background”, and Idaho dischargers are already advanced tertiary treatment facilities. IDEQ suggests that EPA state in the implementation section that Idaho’s compliance with the PCB TMDLs will be satisfied when IDEQ develops and implements a Spokane River PCB implementation plan which is based on opportunistic reduction of PCBs and meeting narrative criteria. Strategies like the development on Best Management Plans, Watershed Implementation Plans, and Pollutant Minimization Plans are crucial for effectively managing and mitigating the risks associated with PCB contamination in the environment and can complement numeric standards by offering additional context and guidance. In addition, the inclusion of narrative criteria can help identify and address PCB contamination in situations where specific numerical limits may not be appropriate or applicable.

The incorporation of non-numeric criteria in the implementation plan would:

1. Enhance Flexibility: Narrative criteria allow for adaptive management approaches that can be tailored to the unique circumstances of PCB contamination sites.

2. Ensure Comprehensive Risk Management: By focusing on the overall health of ecosystems and human health, narrative criteria support a holistic approach to PCB remediation.

3. Protect Public Health: Providing transparent and understandable goals that can be communicated effectively to stakeholders, enhancing public awareness and participation.

4. Support Regulatory Clarity: Narrative criteria can clarify expectations for compliance and help ensure consistent enforcement of PCB regulations.

IDEQ requesting an implementation plan based on narrative criteria for reducing PCB pollution is a standard approach across the nation. For example, the State of New Jersey Department of Environmental Protection uses a Watershed Improvement Plan Project Selection Tool for PCBs. The City of Philadelphia's NPDES Permit (PA0054712) includes a Pollutant Minimization Plan for PCBs. California Regional Water Quality Control Board uses a BMP conceptual model for San Francisco Bay.

Response:

The EPA describes expectations for Idaho regarding the Washington-Idaho boundary condition concentration to the river at the border in Section 5.10 of the TMDL document (Reasonable Assurance) and the response to comment 2.2. Regarding implementation of the TMDL project, as described in Section 5.10 of the TMDL document (Reasonable Assurance), Ecology has convened the Spokane River Toxics Advisory Committee (SRTAC) to focus on implementation of the TMDL project and efforts to reduce PCBs.

7.6 Comment:

The State of Idaho is uncertain over EPA's jurisdiction and ability to set a "boundary condition" for Idaho or how Idaho is supposed to implement a "boundary condition."

The statutory language of section 303(d) explicitly gives EPA a fairly limited role in the TMDL process. EPA has authority to approve or disapprove a state's 303(d) list and/or TMDL submittal. In this case EPA had authority to develop the TMDL for the State of Washington as the Washington Department of Ecology listed the Spokane and Little Spokane Rivers as impaired for PCB pollution in its approved 303(d) list. The draft TMDL limits itself to establishing pollution budgets, "from the Washington-Idaho border downstream to the confluence with the Columbia River, and in the Little Spokane River from the Washington-Idaho border to its

confluence with the Spokane River." In short, EPA's authority and the plain language of draft TMDL is limited to the State of Washington.

In contrast, Idaho has not submitted any 303(d) list which includes PCB impaired waters, because Lake Coeur d'Alene and the Spokane River meet Idaho's approved water quality standards for PCBs. Draft TMDL, 1.3.4., Figure 5. Both the EPA and Idaho are precluded from developing a PCB TMDL for Idaho's waters as EPA has no 303(d) list to approve or disapprove nor submission of a state-developed TMDL. Likewise, the State of Idaho does not have an impaired water on its 303(d) list to act upon, nor data or analysis in a subbasin assessment to demonstrate that a pollutant is contributing to a violation of water quality standard. 39-3611, Idaho Code.

Despite the lack of TMDL jurisdiction, EPA has promulgated and assigned to Idaho a "boundary condition" for PCBs of 1.3 pg/L within the Draft TMDL. The term "boundary condition" is not found anywhere in the Clean Water Act. EPA has refused to define what boundary condition means leaving the State of Idaho to guess at what it is or how to implement it. The PCB boundary condition of 1.3 pg/L is so small that it is undetectable and cannot even be measured. In other words, it is effectively zero. Since it is the equivalent of zero, the draft TMDL claims that any concentration over this undetectably small amount will cause PCB violations throughout the whole 7,946 cubic feet per second (on average), sixty-three (63) mile stretch of the Spokane River. Draft TMDL, 4.2.3, Figure 14. As stated elsewhere in these comments, there are no commercial means to remove PCBs down to nearly zero.

Given the unit of measurement used, Idaho's best guess is that "boundary condition" is a synonym for "load allocation." A load allocation is "the portion of a receiving water's loading capacity that is attributed either to one (1) of its existing or future nonpoint sources of pollution or to natural background sources." IDAPA 58.01.02.010.55 (emphasis added.) If a boundary condition is a load allocation, then this will be the first time that EPA will be unilaterally assigning a state to clean up a whole river to close to zero pollutant from all non-point sources including atmospheric deposition. To ensure a boundary condition of nearly zero, Idaho would need to evaluate nearly 3,701 square miles of land drainage, the entirety of Lake Coeur d'Alene, and a shallow aquifer of groundwater for non-point sources of PCB pollution. Draft TMDL 1.3. The amount of harm to Idaho and its citizens to carry out such an assessment, both financially and resource-wise, as well as harm to the State's ability to effectively manage its own land, water, and pollution within its own borders would be, to put it mildly, staggering.

Whether EPA has the authority to mandate such a cleanup remains to be seen. As stated above, both EPA and Idaho are precluded by law from developing a TMDL or a load allocation for the Idaho stretch of the Spokane River. Unilaterally placing a load allocation on a state without a

303(d) listing or state-developed TMDL listing would be precedent-setting and without legal authority. Such an act would, among other things, violate the cooperative federalism design found within the Clean Water Act, be without apparent authority, impinge a state authority to manage water and pollution within its borders, and subject a state and its citizens to harm caused by increased costs and risk of civil or criminal penalties. While it is true that Idaho needs to assure compliance with downstream uses, there has never been a situation where an almost zero water quality standard was enforced so far upstream. Whether the Clean Water Act contemplates such extreme actions is doubtful, especially given the technical deficiencies described in these comments which make the facts uncertain.

Given these ambiguities, IDEQ believes that the boundary condition should be removed from the TMDL. IDEQ will work with EPA and downstream users and cooperate in ensuring downstream beneficial uses through all reasonable means at its disposal, including the use of narrative standards as described elsewhere in these comments.

Response:

The EPA does not agree that the boundary condition concentrations in the river at the Washington-Idaho border should be removed from the TMDL project, nor that the EPA does not have the authority to identify allocations for upstream pollutant loads contributing to an identified impairment. Although the TMDL document is written for impaired waterbody segments in Washington, available data indicate that PCBs are present in the Spokane River at the Washington-Idaho border; see the TMDL document at Table 9 and Figure 12. These PCBs that flow into Washington from Idaho contribute to the PCB impairments in the Spokane River in Washington. The EPA must account for the contribution of PCBs from Idaho when developing a TMDL project for the Spokane River, because the TMDL project is designed to address impairments in Washington waters that originate in Idaho.

The commenter does not suggest an alternative for how the EPA would account for PCB contributions entering Washington waters from Idaho waters. If the TMDL project assumed the existing contributions from Idaho waters, water quality standards for Washington and Spokane Tribe waters of the Spokane River would not be achieved.

Regarding Idaho responsibilities for the TMDL project, see response to comment 2.2.

7.7 Comment:

7.7.1 Comment:

Pg 36 – EPA says a wide variety of tools were used. Only a basic spreadsheet tool was used.

Response:

The first sentence in Section 4 of the TMDL (TMDL Technical Approach) states that, "A wide variety of technical tools and analytical approaches are used to develop TMDLs, ranging from simple step-back calculations to complex water quality models." This is a statement about the variety of technical tools that are used to develop TMDLs in general; it was not a statement about the tools that were used in this specific TMDL project. The commenter is correct that a mass balance model, implemented using an Excel spreadsheet, was used to develop the load allocations and wasteload allocations in this TMDL document.

7.7.2 Comment:

The commenter states that the TMDL document includes compounded Margins of Safety.

Response:

The EPA does not agree that margins of safety have been compounded. The TMDL project uses only implicit margins of safety, consisting of the assumption that PCBs released into the river will flow downstream with no loss of instream PCBs due to mechanisms such as settling, volatilization, biological uptake, and chemical breakdown, and that all surface water and groundwater inflows to the rivers contain PCB concentrations at or above the water quality criteria, so there is effectively no dilution of total PCB loadings entering the rivers. The mass balance model shows good agreement with PCB data observed during the SRRTTF's August 2014 synoptic sampling event; see the TMDL document at Figure 11. Given the ubiquity of PCBs in the environment, it is reasonable to assume that all surface and groundwater inflows have a PCB concentration greater than or equal to 1.3 pg/L. These conservative assumptions constitute a reasonable margin of safety.

7.7.3 Comment:

Idaho's "Fully supporting" status for PCBs is glossed over in the appendix.

Response:

See response to comment 7.7.4.

7.7.4 Comment:

Section 4.2.4 highlights PCB exceedances of the Spokane Tribal and Washington criteria at the Idaho/Washington border. EPA does omit that Idaho criteria and that the Spokane River in Idaho does not exceed Idaho criteria for PCB.

Response:

The EPA agrees that available data indicate that the Spokane River in Idaho meets Idaho's numeric water quality criteria for PCBs. This TMDL project addresses water quality impairments caused by PCBs in Washington waters. The beneficial use support status of Idaho waters is not

relevant to this TMDL project. However, PCBs that travel across the border from Idaho into Washington and thus contribute to the Washington PCB impairments are relevant to this TMDL project. See response to comment 7.6

7.7.5 Comment:

Charts are designed to make Idaho appear as the main source of PCB pollution instead of the Spokane Valley.

Response:

The EPA disagrees. Figures 8, 11, 12, and 15 of the TMDL document quantify PCB contributions from Idaho include. None of these charts indicate that Idaho is the main source of PCB pollution. Figure 8 shows Spokane River Total PCB concentrations observed in the SRRTTF's synoptic surveys, some of which include sampling locations in Idaho, and Figure 11 is a comparison of measured PCB concentrations in the August 2014 SRRTTF synoptic survey to those predicted by the mass balance model. Figures 8 and 11 show concentrations rather than loadings, however they both show that PCB concentrations in Idaho are lower than those downstream of Mirabeau Point and thus do not indicate that Idaho is the main source of PCB pollution.

Figure 12 is a pie chart showing current estimated relative PCB loadings for several source categories including the upstream boundary with Idaho. It shows that the upstream boundary contribution is about 4% of the estimated current total PCB load, which is the smallest fraction of any source category shown. Figure 15 is another pie chart showing the relative distribution of assigned and allocated total PCB loadings by category, including the Washington-Idaho border. It shows that the TMDL's boundary condition to the river for the Washington-Idaho border represents 48% of the total loading as allocated by the TMDL project.

7.8 Comment:

Chronology of Past Comments Made to EPA

This section outlines the Idaho Department of Environmental Quality's (IDEQ) concerns and chronology regarding the proposed TMDLs. Long-Standing Comments are intended to represent comments IDEQ has maintained and expressed to EPA since the beginning of the court order. The Webinar Comments represent thoughts and concerns IDEQ has compiled in response to content presented by EPA in public webinars.

Long-Standing Comments

1. The Idaho Department of Environmental Quality (IDEQ) requests bi-monthly meetings (as promised by the Environmental Protection Agency (EPA) with stakeholder representatives to

update and solicit feedback during the Total Maximum Daily Load (TMDL) development process.

a. On a December 15, 2021, Spokane River Regional Toxics Task Force (SRRTTF) meeting, the EPA stated they will develop a stakeholder's group in early 2022. They stated stakeholder group will be distinct and separate from the Toxics Task Force but there will likely be some crossover between them.

b. During a January 27, 2022, meeting with EPA and IDEQ, a stakeholder meeting was promised for July or August 2022 – the EPA's projected time for when the technical approach would be complete.

c. Regardless of whether the TMDL reaches into Idaho, we believe this should be transparent to stakeholder groups, as required by Idaho Statue §39-3615 which requires that WAG membership reflect a balanced representation of citizen/industry interests in the watershed during TMDL development.

d. Point source stakeholders from Idaho (ID) with interest in this TMDL and who should be invited to the stakeholder meetings include but are not limited to:

i. City of Coeur d'Alene Advanced Wastewater Treatment Plant (IPDES Permit No. ID0022853)
ii. Hayden Area Regional Sewer Board Publicly Owned Treatment Works (IPDES Permit No. ID0026590)
iii. City of Post Falls Publicly Owned Treatment Works (IPDES Permit No. ID0025852)
iv. City of Coeur d'Alene MS4 (IPDES Permit No. IDS028215),
v. City of Post Falls MS4 (IPDES permit IDS028231),
vi. Idaho Transportation Department District #1 MS4 (IPDES Permit No. IDS028223),
vii. Post Falls Highway District MS4 (IPDES Permit No. IDS028207).

e. Concerns listed above were expressed to EPA on January 27, 2022; December 1, 2022.

Response:

Comments noted. The EPA held four public webinars from 2023 through 2024 as well as meetings with IDEQ prior to the public notice of the draft TMDL. The EPA also held an informational meeting in May 2024 during the public notice period. All the entities listed above were invited to these meetings.

7.9 Comment:

IDEQ requests one load allocation at the state line and no waste load allocations for Idaho Dischargers.

a. Contaminants should be controlled at the product and process source rather than making this the full responsibility of facilities at the downstream end of the product life cycle (i.e. wastewater treatment plants).

b. Concerns listed above were expressed to EPA on January 27, 2022; December 1, 2022.

Response:

The TMDL includes a boundary condition to the river at Washington-Idaho border and no wasteload allocations for Idaho dischargers. For further response on the boundary condition and why the EPA concluded this was the appropriate way to handle PCB loading from Idaho, see response to comment 7.6. The EPA agrees with the waste management hierarchy in which chemical wastes should be reduced or eliminated at the source wherever possible.[1] However, as stated in response to comment 7.2.3, about 90% of the PCBs in the Spokane River water column are from Aroclors (Rodenburg 2022), which would have been manufactured before the TSCA ban on intentional PCB production in 1979. These legacy PCBs were manufactured decades ago and there is no opportunity to reduce or eliminate them at their original sources.

7.10 Comment:

IDEQ requests that boundary load conditions set in the TMDL assume Washington criteria for PCBs will be met at the Idaho (ID)/Washington (WA) state line. Unless lack of attenuation is proven by credible PCB modeling, Spokane Tribe criteria of 1.3 pg/L should not be considered when setting boundary load conditions at the ID/WA state line.

a. IDEQ is concerned about the target concentration selected in this TMDL because IDEQ cannot issue variances for point-source dischargers for waters not 303(d) listed for the impairment and for criteria from a non-Idaho governmental entity.

b. Concerns listed above were expressed to EPA on January 27, 2022; December 1, 2022; February 27, 2023; August 31, 2023; January 11, 2024.

Response:

The EPA evaluated alternatives for the Washington-Idaho border assignment, including setting the boundary condition concentration to the river at values between the Washington total PCBs criterion (7 pg/L) and Spokane Tribe's total PCBs criterion (1.3 pg/L). The mass balance analysis indicates that the concentration assigned at the border cannot be substantially higher than the

[1] https://www.epa.gov/enviro/tri-pollution-prevention-overview

1.3 pg/L Spokane Tribe's criterion concentration and meet the criterion in waters under the Tribe's jurisdiction. Based on these considerations, and consistent with the overall allocation approach in this TMDL project, the EPA assigned a boundary condition concentration of 1.3 pg/L to the river at the Washington-Idaho border. See also response to comment 7.3.5 regarding the Washington-Idaho boundary condition.

Regarding variances, see response to comment 16.10.

7.11 Comment:

IDEQ requests that EPA explores PCB attenuation in the Spokane River through a credible PCB fate and transport model or an appropriate alternative given the hydrophobic/lipophilic tendencies of PCBs and surface water-groundwater interactions of the Spokane River.

a. IDEQ understands that assuming no attenuation takes place and treating PCBs as a conservative constituent is a conservative assumption; however, this assumption is likely unrealistic.

b. PCB bioaccumulation in fish tissue provides evidence that PCBs do not stay in the water column.

c. Concerns listed above were expressed to EPA on January 27, 2022; December 1, 2022; August 31, 2023; January 11, 2024.

Response:

The SRRTTF synoptic sampling and August 2014 mass balance model indicate PCB loadings to the Spokane River are not significantly attenuating as the river flows downstream. Regarding modeling assumptions, see response to comment 7.3.

7.12 Comment:

IDEQ requests data collected for non-regulatory purposes NOT be used for regulatory purposes such as TMDLs. IDEQ recognizes the importance of quality in data, processes, products and services used to support agency environmental decisions. There is concern about data quality with existing PCB data collected in Idaho, and IDEQ requests this data be excluded from the TMDL analysis for the following reasons:

a. Data collected under the SRRTTF efforts were intended only for source identification. They were not intended for regulatory purposes such as TMDL development or permit compliance under the Clean Water Act. For example:

i. Samples collected by SRRTTF contractors loosely followed EPA's Method 1669 (clean hands dirty hands) while taking PCB water quality samples. EPA Method 1669 is

appropriate for trace levels at parts per trillion (PPT) but does not produce reliable results in the parts per quadrillion (PPQ) range. During the development of these analytic methods, the EPA found that one of the greatest difficulties in obtaining reliable, accurate data for metals at such low concentration was not necessarily due to any technical limitations of the methods. Rather due to contamination occurring from improper collection, handling and transporting of the samples.

ii. Additionally, the blank correct method used by wastewater treatment collected samples was not uniformly described or applied.

iii. Surface water data collected with Semi-Permeable Membrane Devices (SPMDs) contains numerous errors. Data collected under test EPA Method 1668 were used in analysis of SPMD samples which is not an approved test method for use under the Clean Water Act. See 40 CFR Part 136.

b. Significant contamination in Quality Assurance blanks in surface water monitoring occurred due to very low concentrations of PCBs in the water column. There is a peer-reviewed blank correction study issued to the SRRTTF which addresses dealing with the contamination in blanks. The study determined there is excess PCB in the water column in WA despite corrections for blank contamination. (LimnoTech 2018).

c. Monthly water quality sampling indicated river PCB concentrations are less than 40 pg/L during all months at the outlet of Lake Coeur d'Alene (LimnoTech 2019). 40 pg/L is lower than blanks for this study. This is well below the ID and previous WA criterion for PCBs of 170 pg/L.

d. Concerns listed above were expressed to EPA on January 27, 2022; December 1, 2022; February 27, 2023.

Response:

As noted in the response to comment 8.5.1, neither the TMDL's calculations of loading capacity nor the load and wasteload allocations (load allocations and wasteload allocations) in the TMDL project are based on ambient PCB data. Rather, the loading capacity is based on the product of the harmonic mean river flow and the target in-stream PCB concentration of 1.3 pg/L and the density of water. See Section 5.2 of the TMDL (Loading Capacity) and response to comment 8.5 for more information.

The EPA believes all available data collected and analyzed with proper QA/QC protocols can and should be analyzed and used to build the best possible understanding of PCB conditions in this watershed. The EPA has considered data quality, precision, and blank censoring in presenting current river conditions and variability. Sampling and analysis by SRRTTF has been extremely

valuable in quantifying PCB sources, relative impacts of different sources, and fate and transport of PCBs in the river.

Regulatory monitoring for NPDES facilities will be conducted using approved methods for NPDES permits with proper QA/QC procedures.

7.13 Comment:

IDEQ requests PCB sources be considered appropriately in the TMDL (including using investigations of the SRRTTF). A TMDL for total PCBs may put undue hardship on cleanup efforts. IDEQ suggests the following be considered as part of PCB cleanup:

Response:

See responses to comments 7.13.1 through 7.13.5.

7.13.1 Comment:

Legacy PCBs and PCBs still allowed under TSCA (Toxic Substances Control Act) should be nonpoint source only. According to SRRTTF over 90% of PCBs in Spokane River are legacy PCBs.

Response:

The EPA disagrees. As discussed in Section 1.1 of the TMDL document (Total Maximum Daily Loads and the Clean Water Act), legacy PCBs are present in the Spokane and Little Spokane River watersheds. Legacy PCBs may reach the water through point source discharge effluent, stormwater, or via overland flow. If legacy PCBs reach the water via a point source discharge, the TMDL project assigns the source a wasteload allocation. If the source is a nonpoint source, the TMDL project assigns the source a load allocation.

7.13.2 Comment:

IDEQ requests PCBs coming out of Idaho should be background, as stated by the SRRTTF. Investigations by the SRRTTF have identified that PCBs in water column are low coming out of Idaho (they have consistently said PCB concentrations at the ID/WA state line are “background concentrations”).

Response:

It is not clear how the commenter defines “background” or how that designation would affect the TMDL. The Spokane River at the Washington-Idaho border carries PCB loadings from Idaho, including the Coeur d’Alene Lake watershed and three municipalities on the Spokane River upstream of the border. Regarding the concept of natural background levels of PCBs, see response to comment 2.17.

7.13.3 Comment:

IDEQ requests the TMDL integrate the investigations of the SRRTTF specifically where they have identified specific locations of contamination and specific sources.

Response:

The mass balance model incorporates available SRRTTF data for source inputs to the river at specific locations identified in the SRRTTF reports. See Section 4 (TMDL Technical Approach) and Appendix C (Spokane River PCB Mass Balance Assessment Tools) of the TMDL document.

7.13.4 Comment:

IDEQ requests consideration of atmospheric deposition as a PCB source.

Response:

The TMDL does consider atmospheric deposition as a source. This source is captured in the assignment of boundary condition concentrations to the river at the Washington-Idaho border, in tributary allocations in Washington, in assigned boundary condition concentrations in Spokane Tribe waters. See also response to comment 7.3.7 regarding atmospheric deposition.

7.13.5 Comment:

IDEQ requests quantification of PCB contributions from stocked fish.

Response:

See response to comment 4.13.

7.14 Comment:

IDEQ suggests that a reporting unit (ML, RL, PQL) be evaluated where there is statistical significance to the quantity being reported. Existing data are being reported at detection limits where the presence or absence of an analyte has 95% certainty is statistically significant but there is no confidence that the concentration is correct.

IDEQ is concerned that there are currently no EPA approved methods that can be used for point-source discharger compliance with total PCBs at such low detection and reporting limits. EPA Method 608.3 is the only approved method to measure PCBs; however, this method is limited to aroclors and does not report low enough concentrations to be relevant to this TMDL (DL = 0.065 ug/L, QL = 0.095 ug/L). EPA Methods 1628 and 1668 are appropriate for specific PCB congeners and report low concentrations (particularly EPA Method 1668) but neither of these methods have been approved by EPA. IDEQ cannot write permits to unapproved analytical methods.

Response:

Regarding the suggestion that the EPA evaluate a reporting unit, as stated in the response to comment number 8.5.4, the EPA acknowledges that there is considerable uncertainty in the TMDL's estimates of current PCB concentrations and loadings, and, in turn, the estimated percent reductions necessary to meet the TMDL's in-stream target, load allocations, and wasteload allocations. This uncertainty is unavoidable given the limitations of analytical methods for analyzing PCBs at parts-per-trillion concentrations in whole water samples. Evaluating a reporting unit would not substantially reduce uncertainty.

As stated in Section 3.3 of the TMDL document (Current Conditions and Recent Exceedances), the EPA applied 5x blank censoring when estimating current conditions instead of the 3x blank censoring used by the SRRTTF to reduce the influence of low-level sample blank detections and increase confidence that observed river concentrations are reflective of actual environmental PCB pollution, not inadvertent sample contamination.

Regarding method sensitivity relative to allocations, see response to comment 3.1.2.

7.15 Comment:

IDEQ requests an explanation as to why EPA litigants are unhappy with the SRRTTF approach to PCB source identification and cleanup. It was stated by EPA in the Oct 26, 2022, SRRTTF meeting that EPA will distance themselves from the technical approach by SRRTTF due to the dissatisfaction of the litigants with this approach.

Response:

The EPA has not identified any specific concerns with SRTTF assessments to date and has fully considered and referenced SRRTTF products and information used in the development of this TMDL.

7.16 Comment:

Webinar Comments

January 2024 Webinar

7.16.1

Slide 3 stated that "EPA recognizes addressing Spokane PCB issues will take tremendous dedication and that there are no simple solutions". Despite the need for tremendous dedication, the TMDL product must be correct and scientifically sound. In this case, EPA may be laying out a simple framework for a situation with "no simple solutions".

Response:

See responses to comments 2.3.2, 4.14, and 7.3.

7.16.2

The map on Slide 4. We would like EPA to draw specific attention to the fact that PCB concentration is in full support for the Idaho portion of the Spokane River. The Little Spokane River is listed as impaired so it should be considered a source and must therefore receive an allocation.

Response:

The TMDL document lists the impaired segments of the Spokane River in Washington in Figure 5 of the TMDL document. The geographic scope of the TMDL project is Washington waters, not Idaho. The Little Spokane River is part of the geographic scope of the TMDL project, and the EPA assigns allocations to sources discharging to the Little Spokane River in the TMDL project.

7.16.3

Mass balance model content on Slide 6. IDEQ needs further clarification on the bullet point "good agreement with synoptic study boosts confidence that system hydrology and PCB dynamics are well described by the model". Is the harmonic mean the appropriate averaging approach for river flow in this case?

Response:

Appendix C of the TMDL document (Spokane River PCB Mass Balance Assessment Tools) provides additional information on the mass balance model and harmonic mean flow. See also response to comment 16.2 on the harmonic mean flow.

7.16.4

General model structure content on Slide 7. The diagram indicates that the Spokane River is a losing reach on the Idaho side of the border (and downstream). It appears 400-500 cfs are lost in that segment which is approximately 25% of the modeled harmonic mean flow.

The harmonic mean flow that represents Spokane River flow near Post Falls of ~2000 cfs is a highly unrepresentative value. Generally, flows are much higher. Out of 6,210 days (January 1, 2000 through December 31, 2016), the Spokane River was between 1,900 and 2,100 cfs for 213 days during the same time period. The Harmonic mean flow only applies to the flows for 3.3% of the time. As noted in the EPA webinar there is an inverse relationship between discharge and PCB concentrations so the estimated PCB concentrations may be high graded by the lower skewing harmonic mean average.

Are each of the hydrologic inputs documented on this diagram having their PCB contributions quantified (i.e., Latah Creek, Little Spokane River, other creeks)? If they contribute discharge, we can expect some sort of load and that they would receive an allocation.

Response:

Appendix C (Spokane River PCB Mass Balance Assessment Tools) and Section 4 (TMDL Technical Approach) of the TMDL document describe the hydrological inputs and model results and also describes the harmonic flows.

7.16.5

Content presented on Slide 8. What is EPA suggesting are reasonable assurances for nonpoint sources of pollution? How will nonpoint load allocations be achieved without TSCA assurances? If point sources are given end of pipe limits and then allowed to have a variance, will that impact the "simplicity" of EPA's reasonable assurance requirements?

Response:

Section 5.10 of the TMDL document (Reasonable Assurance) describes the reasonable assurances for the TMDL project. See also response to comment 3.1.1 regarding feasibility of achieving allocations. Regarding TSCA, see responses to comments 5.2 and 7.2.3.

7.16.6

Current PCB conditions content presented on Slide 10. "Generally, Spokane and Little Spokane River total PCB concentrations are inversely related to river discharge". If river flow and PCB concentrations are inversely related, is there a chance that the TMDL could high-grade PCB concentrations by using harmonic mean flow values (generally lower values) in existing load calculations?

"Despite recent signs of improvement, the rivers are still significantly 'overloaded' with PCBs". IDEQ isn't sure that the ID stretch of the Spokane River is "significantly overloaded" if we believe in our own rules. This assumption would also depend on concentrations in/around the state line compared to Long Lake.

No useful data visualizations were presented to accompany any statements on this slide.

Response:

Appendix C in the TMDL document (Spokane River PCB Mass Balance Assessment Tools) and response to comment 16.2, which describe the rationale for using the harmonic mean flow. Section 3.3 of the TMDL document (Current Conditions and Recent Exceedances) includes PCB data plots for the river that show levels substantially higher than the water quality standards, particularly in Washington portions of the river.

7.16.7

PCB sample concentration content on Slide 11.The bullet point that states ">45% of samples are above ID total PCB WQS (190 pg/L)" is very misleading. It is not appropriate to compare

samples outside of Idaho to Idaho WQS. EPA must clarify if 45% of the total samples or only the samples collected in Idaho exceed Idaho WQS.

Response:

This statement is not in the final TMDL document. The data provided in the final TMDL document supersedes any bulleted language in webinars during the early stage of TMDL development.

7.16.8

Content presented on Slides 12-16. These tables indicate that the total PCB WQS being used for this TMDL's loading capacity calculation is 7 pg/L for Washington State river miles and 1.3 pg/L for Spokane Tribe river miles. Using this logic, load capacity calculations for water upstream of the WA/ID border should use 190 pg/L (Idaho WQS). It is unclear which scenario from Slide 9 is being used to generate these load capacity values.

Response:

This comment relates to information in webinars shared during the early stage of TMDL development. Section 5.2 of the TMDL document (Loading Capacity) describes the loading capacity. Section 4.2.4 of the TMDL document (Boundary Condition Concentrations in Border Waters) includes the boundary condition to the river for the Washington-Idaho border. Section 4.2.3 of the TMDL document (Assimilative Capacity Analysis) describes how and why the EPA selected the modeling scenario to assign allocations.

7.16.9

Total allocated loading content on Slide 19.This table indicates that the upstream boundary will receive an allocation of 5.97 mg/day. IDEQ back calculated this load value and discovered that an allocation of 5.97mg/day would indicate meeting a target of 1.3 pg/L, not 7 pg/L. Using a target of 7 pg/L, the upstream boundary load would be 34 mg/day.

Response:

The listed loadings and associated concentrations are correct. The TMDL document includes these values and the EPA's assignment of a 1.3 pg/L boundary condition concentration to the river at the Washington-Idaho border.

7.16.10

Wasteload allocation content on Slide 20. Why do the wasteload allocations use annual average effluent flow rather than flow at design capacity conditions or harmonic mean flow?

Response:

The EPA has adjusted the wasteload allocations in the TMDL document using design flows. See also response to comment 16.5.

8 Inland Empire Paper Company

8.1 Comment:

IEP urges EPA to withdraw the Draft Spokane and Little Spokane Rivers PCBs Total Maximum Daily Loads (TMDL). EPA lacks the authority to issue a PCB TMDL where the state of Washington has not submitted to EPA either an expressed or constructive submission that it will not develop a TMDL for PCBs. EPA has relied on an unapproved test method and data collected to support semi-quantitative loading analyses that were not intended to be used for regulatory purposes. Finally, EPA makes a cynical and unlawful determination of reasonable assurance that the rivers can achieve the TMDL wasteload allocations and load allocations based on a non-existent effort by the state of Washington to develop an implementation plan.

Response:

The EPA disagrees with the recommendation to withdraw the TMDL document and each of the assertions made to support that recommendation. See below for more detailed comments and responses to 8.2 through 8.7 related to this general comment. Specifically, regarding the EPA's authority to issue the TMDL, see responses to comments 8.4 and 2.2. Regarding the test method and data, see response to comment 8.5. Regarding the feasibility of attaining the allocations and reasonable assurances, see responses to comments 3.1.1, 8.7, and 4.10. Regarding ongoing implementation planning by the state of Washington, see Section 5.10 of the TMDL document (Reasonable Assurance) and responses to comment 16.4 and 16.7.

8.2 Comment:

Because of the uncertainty of Method 1668C and application of non-standard and non-scientific blank censoring, it is impossible to say whether IEP has any PCBs in its effluent. IEP water quality treatment performance (as well as the performance by other Spokane River dischargers) using state-of-the-art technology is to the point where it is not possible to determine if PCBs are present in the resulting effluent and surface water.

Response:

Regarding methods, see response to comment 8.5.

8.3 Comment

The reasonable assurance determination does not meet the legal standard for approval of a TMDL under the Clean Water Act, as it is unlikely to achieve any further reductions in PCB loading until EPA undertakes to remove allowable PCB concentrations from the stream of

commerce under the Toxics Control Substance Act (TSCA). If PCBs are present in IEP effluent, it is solely due to the inks and dyes in recycled paper used in its paper making process. EPA allows concentrations of PCBs in these inks and dyes up to 50 parts per million (ppm), a value over 38 billion times higher than the Spokane Tribe of Indians PCB criterion of 1.3 pg/L. EPA has repeatedly stated that there is no evidence that PCBs at the allowed levels in inks and dyes pose a threat to human health. It is nonsensical under the Clean Water Act or environmental justice for EPA to pursue unmeasurable levels of PCBs in the Spokane River when it allows concentrations of PCBs up to 50 ppm in toothpaste, soap, shampoo, dish soap, laundry detergent, clothing, paint, caulking, and a myriad of other everyday products. Even if EPA has authority to issue a PCB TMDL for the Spokane River, there is no basis for reasonable assurance of achieving the applicable water quality standards until EPA acts to remove PCBs from the stream of commerce.

IEP joins and incorporates by reference the separately filed comments on the draft TMDL by the National Council for Air and Stream Improvement (NCASI).

Response:

The EPA does not agree that the TMDL project lacks legally required reasonable assurances, or that reasonable assurances for this TMDL must be based on changes to TSCA regulation. For further response, see responses to comments 8.7 and 4.10. Regarding TSCA, see responses to comments 5.2 and 7.2.3. Regarding NCASI comments, see responses to comments in Section 10 of this response to comments document.

The EPA disagrees that it is nonsensical under the Clean Water Act or for environmental justice to pursue unmeasurable levels of PCBs in the Spokane River when PCB concentrations up to 50 ppm are allowed in consumer products. Regardless of the character and complexity of the sources contributing to an impairment, the TMDL project must establish allocations that achieve the applicable water quality standards. Regarding the water quality criteria below detection, see response to comment 7.5.2. Regarding PCBs in consumer products, see response to comment 7.2.3.

Each of these comments is repeated below with additional detail. See below for responses to each comment.

8.4 Comment:

EPA lacks authority to issue the Spokane Rivers PCBs TMDL. Under the Clean Water Act ("CWA"), states have the primary responsibility for identifying impaired waters and developing TMDLs to address impairments. The use of "[e]ach State shall" in the subsection addressing TMDL programs demonstrates the exclusive authority in the first instance for states to develop

TMDLS. See 33 U.S.C. § 1313(d). A foundational principle of the CWA is "that States remain at the front line in combating pollution." City of Arcadia v. EPA, 411 F.3d 1103, 1106-07 (9th Cir. 2005) (holding constructive submission does not preclude a state from submitting a TMDL after EPA established one on the same subject). Under this cooperative federalism model, states must develop TMDLs for pollutants causing impairments in waterbodies identified in a state's §303(d) list. 33 U.S.C. § 1313(d)(1)(C). The EPA, in turn, has an obligation to review the state submitted TMDL and either approve or disapprove. Id. § 1313(d)(2). If the EPA disapproves of a proposed TMDL, it has a nondiscretionary duty to issue its own TMDL for the impaired water body. EPA may otherwise only act on its own initiative to impose a TMDL on a state when the state has expressly or constructively submitted to EPA a determination that the state will not be developing a TMDL.

The state of Washington has neither expressly nor constructively stated it will not develop a PCB TMDL for the Spokane River. Indeed, EPA determined in April 2013 that a constructive submission regarding a PCB TMDL had not been submitted by the Department of Ecology ("Ecology").2 That determination was upheld in Sierra Club v. McLerran, 2015 WL 11088522 Memorandum Order, at 17 (W.D. Wash. Mar 16, 2015) ("Therefore, Ecology's failure to submit the PCB TMDL did not clearly and unambiguously indicate its intent to abandon the PCB TMDL."). Since 2015, Ecology has adhered to the deadlines in the 2015 "EPA's Plan for Addressing PCBs in the Spokane River." Indeed, by conclusions in the TMDL document, the state is ahead of schedule for meeting the then applicable PCB water quality criterion for PCBs. EPA is also aware, consistent with the plan that Ecology has continued to find that measurable progress is being made to reduce PCB loadings to the Spokane River. This is documented in the 2022 Measurable Progress Report issued by Ecology in June 2023, wherein Ecology states: "[f]or this evaluation, Ecology concluded that, during the assessment period of January 1, 2015, through December 31, 2021, the SRRTTF made measurable progress toward meeting applicable water quality standards."

EPA does not have the authority to adopt a PCB TMDL absent an express or constructive submission from the state of Washington that the state does not intend to develop a PCB TMDL. That has not occurred, and EPA will be acting unlawfully to adopt a final PCB TMDL at this time.

In response to this comment, please answer the following questions:

Please identify each and every communication from Ecology where it has expressly informed EPA that the state of Washington does not intend to develop a PCB TMDL for the Spokane and Little Spokane Rivers. In this identification, please identify the person or persons at Ecology who made a communication, how the communication was made, e.g., by letter, email, or personal

communication. The failure of EPA to respond to this question with specific details will be taken to be admission that the state of Washington has never made such a communication to EPA and this admission will be relied on in any judicial review of a final TMDL.

Does EPA maintain that the state of Washington has made a constructive submission that it does not intend to develop a PCB TMDL for the Spokane and Little Spokane Rivers? If so, please identify each and every fact EPA relies on for this determination. The failure of EPA to respond to this question with specific details will be taken to be admission that the state of Washington has not made a constructive submission on development of a PCB TMDL and this admission will be relied on in any judicial review of a final TMDL.

Response:

The EPA disagrees with this comment in several respects. As we explain below, EPA disagrees with the commenter's view that the Agency lacks authority to issue this TMDL in the circumstances presented here. In addition, EPA does not agree with the commenter's assertion that the Agency's failure to respond to the commenter's question in a manner that the commenter finds to be sufficient constitutes an admission of any sort. Relatedly, EPA emphasizes that the purpose of the comment process is not an exercise in discovery where commenters demand specific information from the agency. Rather, the purpose is for the public to highlight concerns for the agency to consider before acting.

The EPA concludes it has the legal authority to issue these TMDLs in accordance with the CWA and the 2022 Consent Decree.

In October 2011, several plaintiffs sued the EPA alleging, among other things, that the EPA failed to perform a mandatory duty to establish PCB TMDLs for the Spokane River in violation of the Clean Water Act. *See* 2022 Consent Decree at 2. Plaintiffs' claims were premised on the theory that Washington's failure to issue any PCB TMDLs for the Spokane River constituted a "constructive submission" of "no TMDLs," triggering an obligation for the EPA to issue TMDLs in Washington's stead. *See id*. EPA may compromise claims, without admissions of fact or law, when confronted with legal risk. The legal risk in that case was not insignificant. The Ninth Circuit Court of Appeals has recognized that in certain circumstances, a state's failure to issue a TMDL may be "construed as a constructive submission of no TMDLs, which in turn triggers EPA's nondiscretionary duty to act." *San Francisco Baykeeper v. Whitman*, 297 F.3d 887, 880 (9th Cir. 2002); *see Columbia Riverkeeper v. Wheeler*, 944 F.3d 1204, 1211 (9th Cir. 2019) ("Where a state has failed to develop and issue a particular TMDL for a prolonged period of time, and has failed to develop a schedule and credible plan for producing that TMDL, it has no longer simply failed to prioritize this obligation. Instead, there has been a constructive submission of no TMDL, which triggers the EPA's mandatory duty to act."). Moreover, the

district court in the litigation that gave rise to the 2022 Consent Decree found in a 2015 decision that Ecology had come "dangerously close" to a constructive submission of no TMDL for the impaired waterbody segments. *See* Memo. Order Remanding Matter for Further Consideration, 21, *Sierra Club et al v. McLerran et al*, no. 2:11-cv-1759 (W.D. Wash.)

In the 2022 Consent Decree, the United States District Court for the Western District of Washington entered an order obligating the EPA to establish PCB TMDLs for the Spokane River. The court's entry of the 2022 Consent Decree accepted Plaintiffs' and EPA's compromise of the claims asserted in that case, recognizing EPA's authority to issue this TMDL in these circumstances, in accordance with the CWA and the Court's order.

In addition, no party to that lawsuit, which included Intervenor-Defendants Spokane County, Kaiser Aluminum Washington, LLC, and Ecology, nor any amicus, opposed the Court's entry of that Decree. While Ecology was not a party to the Consent Decree, it was an intervenor-defendant, and Ecology represented to the court that it did not oppose the motion for the court to enter the 2022 Consent Decree. Unopposed Mot. To Enter Proposed Consent Decree, 1, *Sierra Club et al v. McLerran et al*, no. 2:11-cv-1759 (W.D. Wash.); Order Granting Parties' 251 Mot. to Approve Consent Judgment, 2, *Sierra Club et al v. McLerran et al*, no. 2:11-cv-1759 (W.D. Wash.) ("[Ecology] do[es] not oppose entry of the decree, and the Court finds no concerns that the proposed decree would violate the law or public policy."). Nor did Ecology object to the proposed Consent Decree or question EPA's authority to issue the TMDLs when the EPA took public comment on the proposed 2022 Consent Decree before EPA filed the motion for the court to enter it. *See Consent Decree in Sierra Club et al. v. EPA, No. 11-cv-01759*, EPA-HQ-OGC-2021-0828, https://www.regulations.gov/document/EPA-HQ-OGC-2021-0828-0001 (last visited Oct. 18, 2024). In addition, Ecology's comments on the proposed PCB TMDLs did not contest the EPA's authority to issue the TMDLs.

8.5 Comment

EPA cannot rely on an unapproved test method to apply numeric water quality criteria. The EPA-approved test method in 40 C.F.R. Part 136 for measuring PCBs is Method 608.3. 40 C.F.R. § 136.3 Table 1C, Part 136, Appx. A, Meth. 608.3. In 2023 EPA issued a proposed rule for its newest methods update, again designating the most recent version of Method 608 as its only 40 CFR Part 136 approved method for measuring PCBs.

Under the EPA approved water quality standards for the state of Washington, ch. 173- 201A WAC, only EPA approved test methods may be used to apply water quality standards. WAC 173-201A-260(3). With respect to test methods, the standards state:

The analytical testing methods for these numeric criteria must be in accordance with the "Guidelines Establishing Test Procedures for the Analysis of Pollutants" (40 C.F.R. Part 136) or superseding methods published. WAC 173-201A- 260(3)(h).

The EPA approved water quality standards for Washington further require that in applying numeric criteria for water quality, Ecology, in this case EPA, "will give consideration to the precision and accuracy of the sampling and analytical methods used…" WAC 173-201A-260(3)(g). It is undisputed that Method 1668C is an inherently unreliable water quality test method. EPA has repeatedly declined to approve Method 1668C as a 40 C.F.R. Part 136 method for this very reason. In 2010, EPA proposed adding Method 1668C to the list of 40 C.F.R. Part 13 approved methods for testing PCBs.5 Comments on the proposed rule were submitted by thirty-five federal, state, and municipal entities, individuals, and industry organizations.6 Only five of the thirty-five comments supported approval of the test method. Id. According to EPA, "commenters opposing the method provided a detailed critique of the method, the interlaboratory study, the peer reviews and the other supporting documentation." Id. One of the primary concerns with Method 1668C was the "ubiquitous problem of background contamination." After considering this data and the comments, EPA declined to approve Method 1668C.

As pointed out by the Washington Supreme Court, Ecology has made representations regarding the unreliability and inaccuracy of Method 1668C: "[a]s Ecology points out, Method 1668C is unreliable because that test does not allow Ecology to determine whether any of the PCBs detected come from the discharger, the test container itself, or the ambient air." Seattle Iron & Metals, 191 Wn.2d at 642. The Ecology Water Quality Program Permit Writer's Manual (PWM) instructs permit writers that "there are known problems in regard to (sic) the repeatability and accuracy of [Method 1668C] in addition to the expense of the analysis."

EPA has relied on Method 1668C data from surface water sampling that was conducted at the direction of the Spokane River Regional Toxics Task Force (SRRTTF) for the purposes of developing a semi-quantitative assessment of PCB sources to the Spokane River. The data was not collected for regulatory use in NPDES permits or a TMDL. SRRTTF Quality Assurance Project Plans (QAPP) have made clear that its data collection efforts were "not intended to satisfy the requirements of data collection needs for regulatory undertakings such as evaluating compliance with applicable water quality standards for PCBs or developing information for Load or Wasteload Allocations."

The PWM makes clear that the use of Method 1668C should be conducted under the terms of an approved QAPP. EPA does not have an approved QAPP for its regulatory use of Method 1668C data from the SRRTTF. Sampling using Method 1668C is typically conducted with at least

a laboratory "blank" to determine whether the PCBs detected are present in the sample or the laboratory conducting the test. In some cases, sampling is also conducted with sampling and travel blanks. The PWM identifies and discusses the "known problems in regards [sic] to the repeatability and accuracy of the method." Id., at 8 [PWM, at 226]. This is why the PWM follows EPA documentation for the unapproved test method and recommends a blank censoring value of 10x. Id. at 7 [PWM, at 225] (emphasis added). The PWM also cautions that "blank censoring at 3x or 5x is used for identification of sources and can be a semi-quantitative analysis that may yield false positives which prevents it from being useful for the purpose of determining reasonable potential." Id. at 8 [PWM, at 226]. This is an important distinction. If a laboratory blank detects PCBs, the sample PCBs must be at a level more than 10x the concentration of the PCBs in the laboratory blank to confirm the environmental presence of PCBs in the sample. Here, the EPA data analysis is based on test method 1668C data that was developed using a blank censoring factor of only 5x.

Method 1668C is prone to interference and is particularly unreliable at low PCB concentrations. This is supported by the Ecology PWM, which states:

• "When PCB concentrations are very low, background contamination in lab or field blanks may interfere with the calculation of total PCB." Id., at [PWM, ay 255].

• "[T]here are known problems in regards to repeatability and accuracy of the [1668C] method in additional to the expense of the analysis." Id., at _ [PWM, at 256].

It is well documented that PCBs are ubiquitous in the environment and as a result 1668C has issues at low level detection, because PCBs contaminate laboratories, blank samples and samples from other sources. The test method is simply not accurate at low levels because PCBs are "everywhere in the environment" and laboratories are unable to separate the "general presence of PCBs everywhere in the environment from what's in the specific sample that's being tested by the laboratory." There is scientific consensus that it is extraordinarily difficult to accurately measure the concentrations of PCBs at low levels.

It is also well accepted in other watersheds that Method 1668C is not reliable in evaluating data that is less than 1 nanogram per liter (ng/L), or1000 picograms per liter (pg/L). In environmental testing a threshold of one 1 ng/L is used to eliminate lower, unreliable concentration data from an analysis. This is also true for Puget Sound where long-term toxics monitoring for PCBs excludes any 1668 data less than 1 ng/L as being irrelevant using a sensitive test method susceptible to background noise.

Method 1668C data is also questionable given the limitations of environmental laboratories and the availability and condition of laboratory equipment. All of the SRRTTF PCB data was

processed by an AXYS/SGS laboratory in British Columbia. A representative of that laboratory has represented in a recent public meeting that it is holding its high-resolution mass spectrometer together with "duct tape." Consistent with this representation, AXYS/SGS has announced that after December 31, 2024, it will no longer be processing Method 1668C.16

EPA should have developed its own QAPP for the use of data for the PCB TMDL. The Ecology PWM specifically requires that method 1668C testing of PCBs be conducted under the terms of an approved QAPP. Furthermore, the PWM states that the QAPP will "document a consistent manner with respect to procedures… specific to the level of certainty required in decision making." Id. It further provides that a QAPP must include the censoring technique and censoring factor that will be used. Id., at 256. In describing the PWM QAPP requirement, the State of Washington Court of Appeals noted:

A [QAPP] is required when using Method 1668C for any purpose. . .. These plans "ensure that the collected environmental data can be used for making decisions." Id. They detail the processes necessary for "data collection, management[,] and subsequent analysis," and they develop standard operating procedures "to evaluate and control data accuracy." Procedures such as measuring the PCBs present in distilled water (blanks) for comparison "increase result precision" and "ensure no contamination occurs at any point during the analytical procedure."

SRRTTF collected the data under a QAPP designed to support a semi-quantitative analysis of mass loading of PCBs in the Spokane River. The SRRTTF QAPP states, "[i]n this Study, PCB concentrations are being used solely to support semi-quantitative loading assessments. Results will not be compared to regulatory criteria or standards."[18] The data collected by the SRRTTF is also biased, because it was collected predominantly in low flow periods. Twenty one of the twenty six SRRTTFF sampling events were in the month of August, which has the lowest or nearly lowest flow rates of the year.[19] The monthly flows in August "constitute roughly 1 to 2 percent of the total amount of flow in the river over the course of a year." Id., at 392:19-21. The SRRTTF intentionally targeted dry weather conditions and collected samples in August during low flow conditions to have data that could be used in its loading analyses. This data may be suitable for a semi-quantitative analysis of mass PCB loading but it is not sufficient or appropriate for regulatory purposes.

In response to this comment, please respond to the following questions:

Response:

See responses to comments 8.5.1 and 8.5.8 below.

8.5.1 Comment

Please identify the specific statutory and regulatory authority to use an unapproved test method for the development of a TMDL.

Response:

Neither the TMDL's calculations of loading capacity nor the load and wasteload allocations (load allocations and wasteload allocations) in the TMDL project are based on data collected using EPA Method 1668C. Rather, the loading capacity is based on the product of the harmonic mean river flow and the target in-stream PCB concentration of 1.3 pg/L and the density of water. See Section 5.2 of the TMDL document (Loading Capacity) and response to comment 14.3.

8.5.2 Comment

Does EPA contend that it is authorized to use an unapproved test method for the development of a TMDL under the terms of 40 C.F.R. Part 136? If so, please state the specific section and language on which EPA relies for this authorization.

Response:

See response to comment 8.5.1.

8.5.3 Comment

Does EPA admit or deny that it is bound by the EPA approved terms of WAC 173-201A-260(3) that the analytical methods for water quality criteria in Washington must be approved by EPA? If you admit, please explain your interpretation of the language that allows EPA to use an unapproved test method for a TMDL.

Response:

See response to comment 8.5.1.

8.5.4 Comment

Why did EPA disregard the fact the SRRTTF 1668C data was collected for a semi-quantitative purpose and was not intended to be used for any regulatory purposes? Please explain why EPA ignored the terms of QAPPs approved the SRRTTF and Ecology in this regard.

Response:

The EPA used SRRTTF data for similar purposes as the SRRTTF, to provide the available information about current conditions and source assessments. The TMDL document provides estimates of recent (2010 and later) in-stream PCB concentrations and loads, and in turn estimates of the loading reductions necessary to achieve TMDL targets; see Section 3.3 (Current Conditions and Recent Exceedances) and Section 5.6 (PCB Reductions) in the TMDL document.

The EPA also compared PCB concentrations observed in the August 2014 synoptic sampling study to concentrations calculated by the mass balance model; see Section 4.1.1 of the TMDL document (Mass Balance and Source Contributions). The purpose of including these data in the TMDL document is to provide context for the load and wasteload allocations, which are all set equal to the Spokane Tribe's PCB water quality criterion of 1.3 pg/L and are not based in any way on previous sampling results. See response to comment 8.5.1.

The EPA acknowledges that there is considerable uncertainty in these estimates of current PCB concentrations and loadings, and, in turn, the estimated percent reductions necessary to meet the TMDL's in-stream targets and wasteload allocations. However, those estimates are not regulatory requirements and will not create regulatory requirements for any entity. Any NPDES permit effluent limit must be consistent with the assumptions and requirements of this TMDL project's wasteload allocation (40 CFR 122.44(d)(1)(vii)(B)); however, as explained above, those wasteload allocations were not calculated based on data collected using EPA Method 1668C.

For the regulation of point sources by NPDES permits, the permit conditions set forth the monitoring requirements and approved methods.

8.5.5 Comment

Why did EPA rely on data collected by the SRRTTF in the critical low flow periods in August? Does EPA consider this data representative of PCB concentrations in the Spokane River?

Response:

As noted in the TMDL, the EPA relied on the August 2014 dataset because this dataset is the most comprehensive synoptic sampling dataset for conducting a source assessment. The EPA considers this data to be representative of August 2014 conditions. The TMDL allocations are based on higher flow conditions calculated as the harmonic mean flow of the river.

8.5.6 Comment

What quality assurance project plan did EPA develop for the qualification of flagged data? Did EPA exclude any flagged data from its analysis?

Response:

The EPA used similar approaches on blank censoring as used by Ecology and the SRRTTF. As previously noted, the EPA did not use monitoring data to determine wasteload and load allocations. The EPA based allocations in this TMDL project on harmonic mean river flows and applicable water quality criterion. Therefore, including or excluding any additional monitoring data would only influence the current conditions and necessary reductions estimates, not the TMDL allocations, thereby having no effect on the actual TMDLs. See response to comment 4.9

for additional information on how flagged data were addressed in our current conditions analysis.

8.5.7 Comment

What did EPA do to verify the capacity of the AXYS/SGS laboratory to process method 1688C?

Response:

TMDLs do not make determinations about laboratory capacity. The EPA has not conducted any analysis of laboratory capacity in developing this TMDL project. See also response to comment 8.5.1.

8.5.8 Comment

Why is EPA relying on 1668C data that is orders of magnitude below a threshold of 1 ng/L used in other watershed nationwide and in the state of Washington?

Response:

As stated in the response to comment number 12.19, performance data for method 1668C including method detection limits (MDLs) and minimum levels of quantitation (MLs) are listed in Section 23 of Method 1668C. Published MLs for PCB congeners in water range from 20 – 200 pg/L, although actual MDLs and MLs are specific to a given analysis. Because published MLs for Method 1668C are no greater than 200 pg/L per congener, EPA disagrees that Method 1668C cannot accurately quantify PCBs in water at concentrations below 1 ng/L. Also, see Appendix D of the TMDL document (Water Quality Monitoring Analytical PCB Methods) and responses to comments 8.5.1 and 8.5.4.

8.6 Comment:

EPA cannot establish that the Spokane River below Long Lake Dam is failing to meet water quality standards. EPA does not appear to have quantitative data that PCBs are present in the water column of the Spokane River below Long Lake Dam. Ecology has published a report on PCB sampling in the Spokane River near the boundary of the Spokane Tribe of Indians waters. In that report Ecology determined that it could not confirm the presence of PCBs in the river due to the presence of PCBs in sample, travel, and lab blanks. This conclusion is illustrated in Figure 6 in the report:

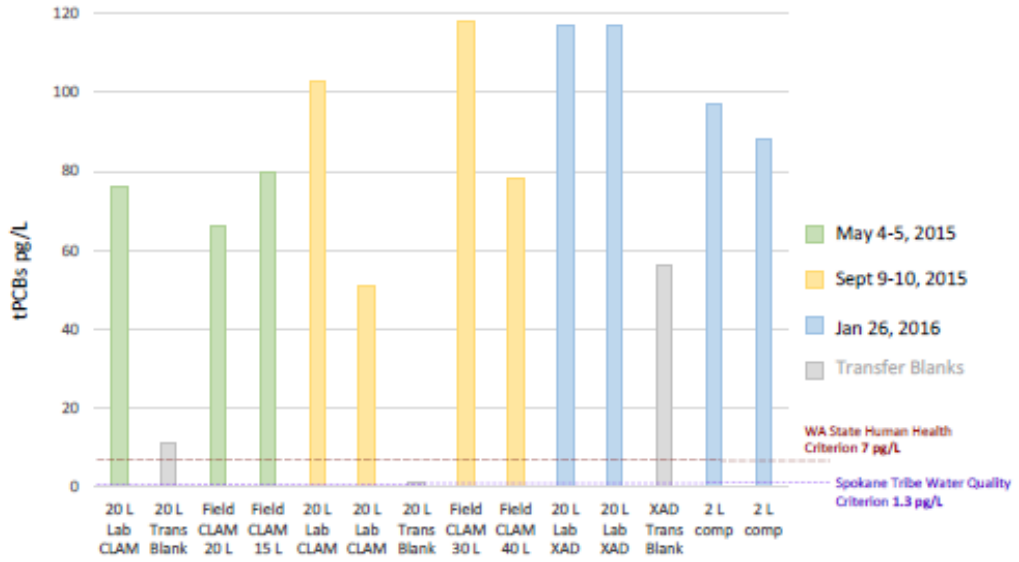

Figure 6. Total PCB Results (pg/L) for Surface Water Sampling.

It is readily apparent that, despite the use of a high-volume collection technique, the blank concentrations of PCBs were in some cases as high, or higher than sample concentrations. This is why Ecology made clear in the report that the data would be "considered to be semi-quantitative and will not be used for formal assessment of water quality criteria attainment."[24]

EPA has also failed to explain the biological process that would allow the PCBs remaining in IEP effluent to bioaccumulate in fish tissue. IEP's advanced water quality treatment system removes over 99% of the PCBs in its influent. The remaining PCBs are entirely lower weight congeners that pass through tertiary membrane filters.[25] EPA needs to explain how these PCBs can pass through advance filtration system but will not pass through the gills of fish. EPA also needs to acknowledge that the existing fish tissue on the Spokane River, including fish tissue sample below Long Lake Dam, are predominated by higher weight PCB congeners that are not present in IEP's effluent. EPA also needs to acknowledge that lower weight PCB congeners can degrade, volatilize, and breakdown in the environment. EPA cannot assume that lower weight congeners present in IEP's effluent are not lost in the environment before the Spokane Tribe of Indians waters.

In response to this comment, please answer the follow questions:

Response:

See responses to comments 8.6.1 through 8.6.4.

8.6.1 Comment

What data, and what was the source of that data, collected below Long Lake Dam did EPA use to determine that the Spokane River is not meeting the Tribal PCB criterion in Tribal waters?

Response:

As noted in the TMDL document, the Washington listed an assessment unit in the reach below Long Lake Dam as impaired in the Washington 303d List (Location: South side of Spokane Arm across from the Spokane Tribe reservation, from Porcupine Bay Campground to Blue Creek (RMs 11.0 -12.7)). See Johnson et al 1994 for more information. That assessment unit remains impaired and continues to be listed on the most current Washington Integrated Report.

The EPA is required under a consent decree to address all listed waters of the Spokane River in Washington, including the waters below Long Lake Dam.

Given the persistence of PCBs in the water column, the combination of monitoring information upstream of Long Lake and mass balance model calculations provides strong evidence that PCB concentrations substantially exceed the Spokane Tribe's water quality criterion downstream of Long Lake.

8.6.2 Comment

What data does EPA have that lower weight congeners in treated effluent are bioaccumulating in fish tissue?

Response:

The EPA has not investigated this question, because the water quality criteria to protect against bioaccumulation in fish are expressed as total PCBs in the water column, and the TMDL project is developed to achieve these criteria. See also response to comment 3.8.

8.6.3 Comment

What science does EPA have that lower weight congeners in highly-treated effluent are bioaccumulating in fish tissue?

Response:

See response to comment 8.6.2.

8.6.4 Comment

What science does EPA have that PCBs do not degrade, volatilize, and breakdown in the environment?

Response:

The EPA does not assert that PCBs do not degrade, volatilize, and breakdown in the environment. Rather, the TMDL project is based on the assumption that PCBs are persistent and these processes have a relatively minor effect on total PCBs observed in the river, and that assumption provides an implicit margin of safety for the TMDL project. The mass balance modeling analysis for August 2014 indicates that these processes are relatively minor loss mechanisms. See Section 4 (TMDL Technical Approach) and Appendix C (Spokane River PCB Mass Balance Assessment Tools) of the TMDL document and response to comment 7.3 regarding modeling assumptions.

8.7 Comment:

EPA does not have reasonable assurance that the TMDL will result in the attainment of applicable water quality standards. EPA states in the TMDL that it must have reasonable assurance that the TMDL will result in attainment of the subject water quality standards. The narrative of the basis for reasonable assurance is a collection of disconnected references to NPDES permits, the newly formed Ecology Spokane River Toxics Advisory Committee, and the SRRTTF.

EPA should concede that NPDES permits in Idaho and Washington will not yield additional reductions in PCB loading from discharges subject to individual NPDES permits. IEP has installed the most advanced wastewater treatment system for a pulp and paper mill in North America, including the first state-of-the-art tertiary membrane treatment system that effectively removes more than 99% of the PCBs. Ecology has determined that the IEP advanced wastewater treatment technologies meet the definition of all known, available and reasonable methods of prevention, control and treatment (AKART) for reduction of PCBs.[26] Additionally, IEP also removes and eliminates these PCBs from reentering the environment through thermal destruction.

The unprecedented level of treatment that IEP has achieved represents the limit of technology. IEP documented this fact in its 2019 application for a water quality variance. [27] The variance application thoroughly documents that the treatment systems installed and maintained result in the “highest attainable conditions” for PCBs in IEP’s effluent.

EPA cannot rely on a yet-to-be-developed implementation plan by Ecology through its Spokane River Toxics Advisory Committee to establish reasonable assurance that the PCB TMDL obligations will be met. The committee has met only sporadically over the past year and has yet to address matters related to a PCB TMDL implementation plan. EPA must recognize that there is no path forward for an implementation plan to achieve 1.3 pg/L using an unapproved test method with existing technology. This kick-the-can-down-the-road approach does not provide a

defined path forward to achieve the Tribal water quality standard through treatment or source control.

EPA appears to rely on the work of the SRRTTF for reasonable assurance. This reliance is absurd considering that the unilateral decision by EPA to issue a PCB TMDL resulted in the dissolution of the SRRTTF in June 2023. EPA is thus responsible for the loss of what was a national and effective model for a community-based approach to reduce toxic loading. With that loss, there is no longer on-going monitoring, loading analyses, or further implementation of the SRRTTF Comprehensive Plan.

IEP is particularly offended that the PCB TMDL reasonable assurance includes efforts to find alternative low-PCB products and reform of the EPA TSCA exemption for PCB concentrations in manufactured products. These initiatives were being pursued by the now defunct SRRTTF. These efforts included correspondence with EPA regarding TSCA reform,[28] joint efforts with tribes and environmental groups,[29] and legislation to compel Ecology to file a petition for rulemaking to amend TSCA.[30]

All these efforts have been unsuccessful. In the denial of the state petition for rulemaking, EPA states that there is no information that PCB allowances in TSCA pose a threat to human health. EPA needs to acknowledge that the remaining PCBs in the Spokane River are first and foremost the result of TSCA PCB allowances. Only EPA can resolve this ongoing source of PCBs to the watershed and there is no reasonable assurance that the TMDL will achieve PCB concentrations of 1.3 pg/L unless EPA takes action under TSCA.

At a recent hearing on the TMDL, Mr. Gunnar Johnson suggested that IEP needs to keep pressuring EPA on this issue. With all due respect, IEP has done more than it should be required to get EPA to act on this issue. If EPA needs additional pressure, that pressure should come from within EPA itself. Without action on TSCA reform, EPA cannot make a good faith representation that it has reasonable assurance that the TMDL will achieve water quality standards.

In response to this comment, please answer the following questions:

Response:

The EPA disagrees that it lacks reasonable assurances for these TMDLs. While the EPA references the work done by the SRRTTF in Section 5.10 of the TMDL document (Reasonable Assurance), the purpose of these references was to document the level of engagement and participation by numerous parties involved in these issues. The TMDL document also discusses the ongoing work by the SRTAC and others to continue to collaborate on actions to reduce PCB

levels in the Spokane and Little Spokane Rivers. See responses to comments 8.7.1 through 8.7.5 below.

8.7.1 Comment

Does EPA contend that exposure to PCBs at levels above 1.3 ppq pose a threat to human health? If so, please explain why EPA does not believe that there is information that justifies reconsideration of PCB concentrations allowed under TSCA of up to 50 ppm, over 38 billion times higher than the Spokane Tribal WQS used as the basis for the PCB TMDL. Does EPA contend that it is possible to achieve the PCB water quality criteria without TSCA reform? If so, please explain in detail how that is possible or reasonable.

Response:

As explained in response to comment 5.5.1, the PCB water quality criteria in this TMDL project are based on several factors including a risk assessment that considers factors that influence human exposure and cancer risk. The TMDLs implement the Spokane Tribe's water quality standards and to do that, the TMDL project must attain 1.3 pg/L at the Washington-Spokane Tribe boundary. Regarding TSCA, see responses to comments 5.2 and 7.2.3.

8.7.2 Comment

When does EPA contend that the river will be in compliance with the 1.3 pg/L water quality standard? If EPA does not have an answer to this question, does EPA admit that its reasonable assurance determination is not based on any timeline or deadline to achieve the water quality standard?

Response:

The EPA disagrees that the TMDL project should forecast when the river will be in compliance with the PCB water quality standards. There is no specific deadline required for meeting water quality standards under the 303(d) program. As noted in the TMDL project, the EPA anticipates TMDL implementation will require decades of work. See also response to comment 3.1.1 regarding feasibility of achieving allocations. See Section 5.10 of the TMDL document (Reasonable Assurance) and response to comment 16.4 regarding general implementation of the TMDL project.

8.7.3 Comment

Does EPA contend that IEP will have to take action to comply with its WLA if monitoring using an approved test method does not detect PCBs? If so, what will be the basis for determining when additional actions are necessary?

Response:

The TMDLs do not create immediate enforceable requirements for permittees. The NPDES permit limits and monitoring requirements for the IEP facility will determine its compliance responsibilities. See also responses to comments 7.2.2 and 8.5.

8.7.4 Comment

Without the SRRTTF and IEP leading the cause on TSCA reform, how and by whom does EPA expect that work to be performed?

Response:

The EPA disagrees that it is the Agency's role to opine on what parties will seek to change TSCA. For more, see response to comment 7.2.3. Regarding general implementation of the TMDL, see Section 5.10 of the TMDL document (Reasonable Assurance) and response to comment 16.4.

8.7.5 Comment

Considering EPA's reliance on TSCA reform and pursuit of low-PCB consumer products to determine reasonable assurance, will EPA guarantee that these initiatives will continue in the absence of the SRRTTF? Considering that EPA intentionally dissolved the SRRTTF to adopt this TMDL, will EPA commit itself to funding these initiatives? If not, how will EPA reasonably assure the public that improvements to PCB loads will occur at all?

Response:

The EPA disagrees that the TMDL project relies on TSCA reform and pursuit of low-PCB consumer products to determine reasonable assurance. The EPA has added information to Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document, including past and current regional efforts to characterize PCB sources and prioritize PCB reductions. Regarding implementation activities for reasonable assurance, see response to comment 16.4. The EPA does not need to guarantee that these initiatives will continue to demonstrate reasonable assurances.

Regarding the SRRTTF, the EPA participated in the SRRTTF and was not part of the decision to dissolve the SRRTTF. As explained earlier, Ecology has convened the SRTAC since the SRRTTF was dissolved. The EPA cannot make a predetermined decision on funding specific projects, unless there is a congressional earmark for a particular project. However, Ecology competed for, and the EPA issued a grant of $6.9 million in 2023 from its Columbia River Basin Toxics Program to support regional planning efforts to reduce toxics and implement projects.

9 Liberty Lake Sewer and Water District

9.1 Comment:

The Wasteload Allocation (WLA) cannot be met with available technology requiring a variance or other compliance pathway. In April 2019, the District applied for an individual discharger water quality variance from the Washington State total PCBs water quality standard of 7.0 pg/L in the Spokane River. The Washington State Department of Ecology (Ecology) did not move forward with the state rulemaking process for the variance at that time. The District has spent $25 million on upgrading its water reclamation facility which has resulted in a 110% increase to its annual debt service obligations through 2038. These upgrades included its ultrafiltration membrane system that removes over 97% of influent PCBs before discharging to the Spokane River. This system uses the most advanced technology available and still cannot meet the Wasteload Allocation (WLA) concentration of 1.3 pg/L. Furthermore, EPA Method 1668C cannot accurately measure to the WLA concentration of 1.3 pg/L due to the potential for field and laboratory contamination of samples, and therefore compliance with the assigned WLA incorporated into an NPDES permit is not possible. Therefore, the District will require a variance or other compliance pathway.

Please include a statement in the TMDL report that the District, as an NPDES permit holder, will need a variance or other compliance pathway because the WLA concentration in the TMDL cannot be met with available treatment technology.

Response:

The EPA disagrees that the TMDL document is the appropriate forum for assertions about the need for variances. Regarding variances, see also response to comment 16.10.

9.2 Comment:

The flow value used to calculate the District's WLA should be the permitted annual average design flow for the facility. The WLA for the District's facility should be based on the District's permitted annual average design flow of 1.5 MGD instead of 0.83 MGD as listed in Table 15 of the TMDL report. This is also the basis of the loadings use to develop the Spokane River and Lake Spokane Dissolved Oxygen TMDL developed by Ecology in 2010. For calculating NPDES permit conditions, 40 CFR 122.45(b)(1) requires that "In the case of POTWs, permit effluent limitations, standards, or prohibitions shall be calculated based on design flow." On page 53, the report states "Additionally, the translation from these WLAs to permit limits can incorporate future growth in approved facility plans." This statement conflicts with the Washington State antidegradation policy in WAC 173-201A-300 to 330 which does not allow increases in loadings once incorporated into NPDES permits.

Response:

The EPA agrees with using the design flow for municipal facilities and has changed the wasteload allocations accordingly. See response to comment 16.5.

Regarding future growth, while the EPA agrees that the Washington State's antidegradation policy applies to new or increased discharges, that policy does not specifically preclude increases in discharge loadings to Tier I waters so long as those discharges comply with the state's regulations (WAC 173-201A-310). Washington's Administrative Code states that "for waters that do not meet assigned criteria or protect existing or designated uses, the department [i.e. Ecology] will take appropriate and definitive steps to bring the water quality back into compliance with the water quality standards (WAC 173-201A-310(2)). Although this TMDL project is being issued by the EPA, it is nonetheless an appropriate and definitive step to bring water quality back into compliance with applicable water quality standards for PCBs.

The waters addressed by this TMDL project are impaired by PCBs. Thus the water quality, in terms of PCB concentrations, is not of a higher quality than the applicable criteria designated for the Spokane River or the Little Spokane River in WAC 173-201A, and the Tier II antidegradation policy, which restricts new or expanded actions whenever a water quality constituent is of a higher quality than the applicable criterion, is not applicable to PCBs in impaired segments of the Spokane and Little Spokane Rivers (WAC 173-201A-320(1)).

Once PCB concentrations are reduced such that the water quality is of a higher quality than the applicable PCB water quality criteria, new or expanded actions may only be allowed if in compliance with Washington's Tier II antidegradation policy (WAC 173-201A-320).

Effluent limits based on a TMDL may be revised as long as the revised limits remain consistent with the TMDL's wasteload allocations and ensure attainment of water quality standards, including antidegradation requirements (CWA section 303(d)(4)(A), 40 CFR 122.44(d)(1)(vii)(B)). Revised limits that remain consistent with the TMDL's wasteload allocations would also be consistent with Washington's Tier I antidegradation policy.

9.3 Comment:

A TMDL is required for the upstream Spokane River segments in Idaho. The boundary condition concentration of 1.3 pg/L at the state line cannot be met when the Idaho state WQS for PCBs is 190 pg/L. Please include a statement in the TMDL report that the EPA or the Idaho Department of Environmental Quality (IDEQ) must develop a TMDL for the Idaho segments of the Spokane River that will ensure the Load Allocation (LA) concentration of 1.3 pg/L at the Stateline. Until this is implemented, the Spokane River TMDL in Washington State will not achieve the Spokane Tribe Water Quality Standard.

Response:

Regarding Idaho's responsibilities for this TMDL project, see response to comment 2.2. Section 5.10 of the TMDL document (Reasonable Assurance) lays out the responsibilities for Idaho to implement its narrative provision to consider downstream standards in its regulatory programs.

9.4 Comment:

The Clean Water Act Section 303(d) Category 5 listing is based on fish consumption. On page 20, the TMDL report states "Ecology based these impairment determinations on fish tissue data with elevated PCB concentrations using its listing methodology from Policy 1-11, that provides a translator from PCB WQC in the water column to PCBs in fish tissue". The Category 5 PCB listings in the Spokane and Little Spokane Rivers are based on fish tissue concentration exceedances. It is our understanding that the ambient water quality criterion is based on fish and drinking water consumption, a bioaccumulation factor, and a cancer slope factor. Please show how the translator has been calculated. Please also include in the TMDL report the fish tissue PCB concentration required for compliance for a Category 1 (i.e., non- impaired) listing.

Response:

See responses to comments to 2.13 and 14.6.

9.5 Comment:

The EPA should support improved source control under TSCA. The EPA has rejected Ecology's 2024 PCB Toxic Substances Control Act (TSCA) Petition, which specifically asked the EPA to take action to reduce the inadvertent generation of PCBs in consumer products. The District requests that the EPA reconsider its position with regard to Ecology's TSCA Petition and that the EPA take action to lower the acceptable PCB concentrations in consumer products to levels commensurate with the water quality standard imposed by this TMDL.

Response:

Rulemaking under the TSCA is beyond the scope of this TMDL. See response to comment 4.3. However, as stated in the response to comment number 7.9, the EPA agrees with the waste management hierarchy in which chemical wastes should be reduced or eliminated at the source wherever possible.

As stated in the response to comment number 7.2.3, although EPA agrees that both inadvertent and legacy (Aroclor) PCBs contribute to the PCB impairments in the Spokane and Little Spokane Rivers, positive matrix factorization (PMF) analysis shows that about 90% of the PCBs in the Spokane River water column are from Aroclors (Rodenburg 2022).

9.6 Comment:

All stormwater loads must be included in the TMDL model. There was no effort on the part of the EPA to quantify loading from stormwater nonpoint sources beyond the City of Spokane's permitted stormwater discharges. Load allocations should be assigned to all nonpoint sources in the watershed so that the appropriate lead agencies have compliance targets. Stormwater load allocations can be calculated by estimating stormwater flows from ground surface area, land use, and soil types in the watershed. Load allocations should be assigned to other existing industrial, construction, and general stormwater permits in the TMDL study area.

Response:

See response to comment 5.6.

9.7 Comment:

Tribal facilities and fish hatcheries must be provided with WLAs. The Wellpinit WWTP on the Spokane Reservation discharges to Little Tshimikain Creek in Wellpinit, Washington under Permit No. WA0025704. The outfall is located upstream Wellpinit Creek, which flows into Little Chamokane, which flows into the Spokane River. The Ford State Fish Hatchery discharges into the Chamokane Creek, which discharges to the Spokane River under NPDES General Permit WAG130009. The Spokane Tribal Fish Hatchery discharges into Chamokane Creek which discharges to the Spokane River under NPDES General Permit WAG130019. In a 2016 study performed by the Washington State Department of Ecology (Ecology), PCBs were detected in the Spokane Tribal Fish Hatchery discharge at concentrations in the range of 147 to 219 pg/L which results in significant PCB loading to the river. Please include WLAs corresponding to a WLA concentration of 1.3 pg/L into the TMDL for these point sources.

Response:

The EPA disagrees that the TMDL project failed to adequately address tribal facilities or fish hatcheries within the TMDL project scope and that they should receive a WLA. See response to comment 3.11.

9.8 Comment:

The WLAs do not reflect the PCBs in fish tissue versus treated effluent. The District's treatment system effluent consists of lighter PCB homologs because the District's ultrafiltration membrane system filters out larger molecular weight PCB homologs. It is heavier homologs (hexa-chlorinated homologs and heavier) that have a much greater potential to bioaccumulate in fish tissue. The WLAs and LAs should be apportioned based on the potential of the source to contribute to the fish tissue PCB concentrations in the Spokane River. Sources without membrane filtration have a much higher potential to contribute to PCB concentrations in fish tissue in the Spokane River than those sources with membrane filtration.

Response:

The EPA disagrees that the TMDL project should differentiate between PCB congeners. As stated in response to comment 3.8, the applicable water quality criteria for PCBs for Washington and the Spokane Tribe are expressed as water column concentrations of total PCBs, and total PCBs are the sum of all congener, isomer, homolog or Aroclor analytes.

TMDLs must be established at levels necessary to attain and maintain the applicable numeric water quality criteria for total PCBs (40 CFR 130.7(c)(1)). Even if the EPA attempted to tailor wasteload allocations to a source's unique bioaccumulation potential, the sum of PCB homologs would nonetheless need to be less than or equal to the applicable total PCB water quality criterion.

9.9 Comment:

The model does not incorporate mass losses from the Spokane River. On pages 9 and 37, the TMDL report states "This PCB TMDL assumes that there is no PCB mass loss from the release point into the river, and all PCB mass is transported downstream with the river flow." Water samples collected from the Spokane River by LimnoTech in 2014, 2015, and 2018 indicate that the river has assimilative capacity for tetra-chloro and lighter homologs in certain segments of the river. Furthermore, the river has reaches of groundwater outflow that would result in losses of PCBs. Table 19 includes a value for groundwater outflow loading but there is no calculation associated with this value. The report should evaluate and incorporate these loss calculations into the report and model.

Response:

The EPA disagrees. The model and TMDL project account for loss of PCBs mass to groundwater in losing reaches. See Section 4 (Technical Approach) and Appendix C (Spokane River PCB Mass Balance Assessment Tools**)** of the TMDL document and response to comment 7.3. The groundwater outflow loading, like all loadings calculated for the TMDL project, is calculated by multiplying flow, PCB concentration and a conversion factor.

9.10 Comment:

The WLAs for the PCB contaminated groundwater plumes should be listed in the TMDL report. Section 5.4.3 of the TMDL report references the calculation used to determine the WLAs for the contaminated groundwater plumes from Kaiser Aluminum and General Electric but does not provide the annual average flow used for the calculation or WLA in the report. Please include a table with these values in the report.

Response:

The EPA disagrees that it is necessary or appropriate to list the estimated flow of contaminated groundwater plumes in the TMDL project. Groundwater plumes are considered nonpoint sources for the purpose of this TMDL project, and load allocations (load allocations) are established for these sources rather than wasteload allocations (wasteload allocations). Calculations in Section 5.4.3. of the TMDL document (Contaminated Groundwater Sites) are used to estimate current PCB loadings of these sources, not to determine allocations. The allocations are intentionally expressed as concentrations only for contaminated plumes, while noting that loading values can calculated based on the flow of the contaminated plume. Unlike point source discharges, the flow of groundwater plumes is not readily measured. The flow of the contamination plume used in the EPA's source assessment is a screening level estimate with substantial uncertainty. For this source category, a concentration-based allocation is appropriate, particularly when the concentration is set using a numeric water quality standard expressed as a concentration. If refined flow estimates are produced in cleanup assessments for contaminated plumes, these flows can be used to calculate the load allocation in terms of loading (mg/day).

9.11 Comment:

The EPA should post the TMDL model spreadsheet on its website for the public to review. The EPA should post the TMDL model spreadsheet on its website for the public to review and verify the accuracy of the calculations and data used in the analysis. Furthermore, there is no TMDL support spreadsheet in Appendix C for the selected model scenario. Failure to provide the spreadsheet to the public shows a lack of transparency by the EPA.

Response:

The EPA agrees that the public should have opportunity to review the TMDL model spreadsheet. The EPA presented the mass balance modeling analysis in public webinars during the TMDL development process and posted a summary on the web page noting that the spreadsheets were available for public review and feedback in July 2023. The EPA provided the model spreadsheets to stakeholders upon request. Appendix C of the draft and final TMDL document (Spokane River PCB Mass Balance Assessment Tools) also provided a thorough, transparent documentation of the mass balance model, including a screen shot of the spreadsheet.

10 National Council for Air and Stream Improvement, Inc.

10.1 Comment:

NCASI has evaluated the Environmental Protection Agency's (EPA) proposed Total Maximum Daily Loads (TMDL) for Polychlorinated Biphenyls (PCBs) in the Spokane and Little Spokane

Rivers (henceforth, Draft TMDL), and provided comments below. NCASI is an independent, non-profit research organization that focuses on environmental topics of interest to the forest products industry. NCASI conducts research and technical studies on behalf of forest products companies across the US, and its members represent over 80% of the pulp and paper production and two-thirds of wood panels produced nationwide. In its capacity as a research organization, NCASI has a long history of working to inform the science needed to address numerous environmental topics related to the forest products industry including effluent regulation, water quality management, and relationships between human and natural stressors on aquatic ecosystems. The following comments are provided to help strengthen important scientific aspects of EPA's TMDL approach for PCBs in the Spokane and Little Spokane rivers.

Conservative, steady-state model assumptions may not be relevant in the low-concentration conditions stipulated by the TMDL. In the Draft TMDL, EPA selected "a conservative mass balance approach that assumes all PCBs that reach the river are fully mixed, conserved within the water column along the length of the Spokane River, and not subject to significant degradation, volatilization, stable long-term sequestration, or otherwise removed from the Spokane River water column by any process other than discharge to the Columbia River." That is, EPA "assumed that there is no loss of PCB mass from the point of release into the river, and all mass is transported downstream with the river flow." EPA rationalizes that because PCBs are persistent in the environment with chemical transformations occurring slowly, this is a reasonable and conservative approach that provides an inherent margin of safety.

The above model assumptions may not be appropriate for the low concentration levels currently found in surface waters (Figure 7 from post-2010 data) as well as concentrations significantly lower than those observed, as would be found if the objectives of the TMDL are met. At these low concentrations, processes such as adsorption to sediments (e.g., Schwarzenbach et al. 2016), biotic uptake (e.g., Borgå et al. 2005), atmospheric volatilization (e.g., Mackay and Wolkoff, 1973), and other natural attenuation mechanisms (e.g., Masset et al. 2019) may become more significant, potentially altering PCB mass in the water column. Other modeling assumptions that may change at the low concentrations described in the TMDL include whether Lake Coeur d'Alene acts as a net source or sink for PCBs, especially for the semivolatile PCB congeners. Therefore, caution should be taken when attempting to estimate PCB persistence and downstream transport under future scenarios. Model refinement should be encouraged during implementation at lower concentrations to enhance the accuracy and relevance of the TMDL implementation.

Ultimately, there is a significant disconnect between the current conditions described from post-2010 data and those conditions attributed to the maximum daily load to meet water

quality standards. The lack of system knowledge at such low concentrations should be acknowledged in the TMDL. And, as suggested below, a justifiable implementation plan should be pursued before completion of the TMDL.

Response:

The EPA agrees that there are uncertainties in the PCB source/sink dynamics when moving from current conditions to the significantly lower concentrations targeted by the TMDL allocations. This is one reason for taking a conservative approach in the assumptions used for the mass balance model and the margin of safety. The EPA does not agree that there is a significant disconnect in the logic of the TMDL approach.

Ecology has assembled the SRTAC to work with stakeholders and Spokane Tribe in the watershed on the implementation process for the TMDL project, and this process can include periodic reviews of the state of knowledge about PCB dynamics in the Spokane River.

10.2 Comment:

A coordinated state/federal implementation plan should be created and approved prior to the completion of TMDL in this case, due to lack of reasonable assurance. The purpose of a TMDL's reasonable assurance section (Section 5.8, p. 60) is to demonstrate that there are sufficient mechanisms, commitments, and resources in place to implement the proposed TMDL and achieve the necessary pollutant load reductions. For the following reasons, it is not technically feasible to implement this TMDL:

Response:

The EPA does not agree that an implementation plan should precede this TMDL project, nor that the TMDL project is not technically feasible to implement. The EPA agrees that the purpose of reasonable assurance is to demonstrate that there are sufficient mechanisms, commitments, and resources in place to implement the proposed TMDL and achieve the necessary pollutant load reductions. States typically produce implementation plans as part of comprehensive watershed planning efforts. See Section 5.10 of the TMDL document (Reasonable Assurance) and response to comment 8.7.5.

10.2.1 Comment:

The TMDL aims to reduce total PCB concentrations to 1.3 pg/L and provides wasteload allocations among various sources accordingly. This translates to necessary PCB reductions consistently exceeding 97% and oftentimes exceeding 99% among river segments (Table 20). Even historic upstream, groundwater-fed tributary monitoring data recorded surface water concentrations of 6 pg/L, requiring a 77% reduction in current values to meet the proposed

water quality criterion. Given the percentage of reductions needed, it is not feasible to expect that these reductions can be achieved.

Response:

The EPA agrees that reducing PCB concentrations will require a long-term regional effort. Regarding the feasibility of meeting allocations, see response to comment 3.1.1. However, the difficulty of meeting reductions is not a factor to be considered in setting a PCB concentration that is necessary to meet the relevant water quality standards. For more detailed analysis, see response to comment 7.2.2.

10.2.2 Comment:

Analytical methods (Method 608, Method 1668) cannot reliably detect PCB concentrations near 1.3 pg/L.

Response:

See response to comment 3.1.2.

10.2.3 Comment:

The Draft TMDL states that "The EPA expects that Idaho and Spokane Tribe will meet their boundary condition concentrations of 1.3 pg/L to achieve applicable WQS, including WQS to protect downstream standards." However, Figure 7, showing PCB monitoring data collected post-2010, and Table 20, showing the needed reductions to meet the water quality standard, do not validate this statement.

Response:

The EPA does not agree that Figure 7 or Table 20 need to validate EPA's expectation that the sovereigns in the region are required to meet their legal requirements under the Act. The boundary condition expectation is reasonable because of the operation of sections 303(c), 303(d) and 402 of the CWA, implementing regulations, and the approved WQS for the two states and the Spokane Tribe.

For example, 40 C.F.R. § 131.10(b) requires that "In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters." Furthermore, for EPA-issued NPDES permits, the EPA considers downstream WQSs. *See* 40 C.F.R. § 122.44(d) (providing that an NPDES permit shall not be issued "when the imposition of conditions cannot ensure compliance with the applicable water quality requirement of all affected states"); *see also Ark. v. Okla.*, 503 U.S. 91, 105 ("The application of state water quality standards in the interstate context is wholly consistent with the Act[.]"). The EPA has amended

the language in Section 5.10 of the TMDL document (Reasonable Assurance) to clarify jurisdictional responsibilities. See also response to comment 2.2.

10.2.4 Comment:

Under the federal Toxic Substances Control Act (TSCA) [40 CFR, Part 761] the inadvertent generation of PCBs must have an annual average concentration of <25 parts per million (ppm), with a 50 ppm maximum. This allowable 'background' concentration of PCBs in the environment directly conflicts with the surface water criterion used in this TMDL.

Response:

The EPA does not agree that the provisions of TSCA are determinative for this TMDL or its allocation, which is required to meet the terms of Section 303(d) of the Act. See response to comment 7.2.3.

10.2.5 Comment:

Modeling assumptions of PCBs as a conservative substance may be flawed at the low concentrations described in the TMDL.

Response:

The EPA determined that the conservative assumptions in this TMDL project constitute an appropriate implicit margin of safety. See response to comment 7.3.

10.2.6 Comment:

One suggestion to address this issue is to create and approve an implementation plan before finalizing this TMDL. This would require coordination between state and federal agencies and would ensure that the objectives of the TMDL would be feasible to implement.

Response:

See response to comment 10.2.

10.3 Comment:

Section 3.1 (Overview of PCB Sources) insufficiently depicts PCB levels allowable under TSCA. The Draft TMDL discusses legacy and ongoing sources of PCBs in Section 3.1. Here, specifically, the document states that "while concentrations of inadvertent PCBs are regulated by TSCA, the wide range of products that contain them continue to contaminate many waste streams (Xiaoyu et al. 2022)." It would be beneficial to highlight that the TSCA [Toxic Substances Control Act] regulation allows for the generation and release of inadvertently produced PCBs at concentration levels that are orders of magnitude greater than current Washington and tribal water quality standards. For example, products must not contain >50 ppm at maximum or 25 ppm as an annual average, emissions to ambient air must not be above 10 ppm up to 1 lb/year,

and discharges of individual congeners to water must not be above 100 µg/L (CFR 2013). PCB generation and emission can occur in a variety of industrial processes and consumer products (Vorkamp 2016, Lui et al. 2022), several of which are present in the Spokane River basin. Inclusion of text recognizing that discharge of the allowable PCB levels from even a single source has the potential to far exceed existing PCB concentrations in the Spokane River basin and obstruct TMDL efforts is important to increase transparency in the Draft TMDL. It will also serve to highlight the challenges faced by water quality managers in implementing the TMDL and industrial environmental managers who have limited operational and technological controls for addressing outside PCB loads.

Response:

The EPA acknowledges this comment. The EPA conducted this TMDL project under the requirements and authorities in Clean Water Act Section 303(d). A detailed description of TSCA regulations is beyond the scope of the TMDL.

10.4 Comment

Censorship level of PCB data may overestimate PCB contamination in the Spokane River Basin. EPA's application of a 5x blank censoring level in the Draft TMDL likely overestimates PCB contamination in the Spokane River basin and is counter to EPA's own guidance and that of Washington Department of Ecology (henceforth, Ecology). Censoring is used to reduce the influence of low-level sample blank detections and increase confidence that observed river concentrations are reflective of actual environmental and not inadvertent sample contamination, and is particularly important for PCBs given their ubiquity in the environment, that most Spokane River basin PCB concentrations are close to or below analytical detection limits, and levels of PCBs in laboratory blanks using highly distilled laboratory water can be as high as 50 pg/L. Guidance in EPA's National Functional Guidelines for Organic Data Review recommends using 10x the amount in the blank as a threshold for positively identifying target analytes that are common laboratory contaminants (EPA 1999). For PCB method 1668, this equates to a 95% confidence level that the congener is present in the sample and quantifiable. Ecology has adopted EPA guidance in their regulatory frameworks (Ecology 2018) and its own PCB sampling program (Friese and Coots 2016). The Draft TMDL points to the use of a 3x blank censoring level by the Spokane River Regional Toxics Task Force (SRRTTF) in highlighting the increased confidence the 5x blank censoring used in the Draft TMDL brings to PCB concentration data. However, SRRTTF's 3x blank censoring level was selected because their data collection efforts were "not intended to satisfy the requirements of data collection needs for regulatory undertakings such as evaluating compliance with applicable water quality standards for PCB or developing information for Load or Wasteload Allocations." (LimnoTech 2014). The fact remains that the application of 5x censoring still results in semi-quantitative

concentration estimates with greater potential for false positives. The application of a 10x blank censoring level would better ensure that measurements of PCB contamination reflect true environmental conditions, and serve as a more appropriate basis for estimating loads and establishing allocations than 5x blank censored data.

Response:

The EPA disagrees that the TMDL project's low blank censoring threshold is inappropriate. As described in the TMDL document, low blank censoring thresholds are commonly applied when the environmental monitoring effort prioritizes analyte presence/absence and pollution source detection. High blank censoring thresholds are commonly applied when sample contamination is a concern and very low concentrations are being measured. Previous Spokane River PCBs data analysis by Ecology and the SRRTTF, which was heavily focused on source identification, applied a 3x blank censoring level to retain as many detections as possible and provide the most detailed spatial accounting of all suspected PCB sources. In contrast, the EPA has applied a 5x blank censoring level in this TMDL project to reduce the influence of low-level sample blank detections and increase confidence that observed river concentrations are reflective of actual environmental PCB pollution, not inadvertent sample contamination.

10.5 Comment:

Data generated using Method 1668 may not produce scientifically defensible risk assessment outcomes and margins of safety. The toxicity value associated with EPA's human health-based water quality criteria for PCBs was originally derived based on toxicity testing using four Aroclors (1260, 1254, 1242, and 1016), and the resulting value has been in use for more than two decades (IRIS 1996). As such, PCB concentrations Method 608, an Aroclor-specific method (and potentially 8082 for Aroclor analytes), would be comparable to criteria derived using this toxicity factor. However, Method 1668 yields individual congener data, which complicates a comparison of measured PCB concentrations to the toxicity factor and cancer risk, both because bioaccumulated PCB congeners may be more toxic than commercial PCBs (measured as Aroclors) and because congeners lower in chlorine content than the original Aroclor mixture tend to be more inclined to metabolism and elimination and lower in persistence and toxicity. There is a paucity of toxicity and bioaccumulation data for many of these 209 congeners/congener groups, although the relative toxicity and mode of action is known to vary among PCB congeners (e.g., Simon et al. 2007). Further, known existing sources of PCBs, such as PCB-11 (Fisher 2010, Rodenburg et al. 2010) that are lower in chlorine content can be significant contributors to the mass of PCBs quantified using Method 1668. As such, these results are not directly comparable to the criteria without some assessment of toxicity and bioaccumulation equivalency between the congeners identified using 1668 in present day

water samples and those contributing to the toxicity reflected in the Cancer Slope Factor (CSF) used to derive the water quality criteria.

By relying on Method 1668 to input exposure data into the risk assessment algorithm, it is highly likely that risk is overestimated related to the degree in which less toxic PCB congeners make up the totality of PCBs measured. Unless all PCBs measured are, in fact, Aroclors (1260, 1254, 1242, and 1016), the risk will be overestimated. It is likely that regional and temporal measurements of PCBs will vary in concentration. Therefore, not only is the margin of safety provided by the current criteria unknown, but it will vary from region to region and date of sampling. An analytical method, such as Method 608, that directly links measured concentrations with the well characterized health risk of specific constituents at those concentrations would create a more scientifically defensible method to meet health protection targets and define a reliable margin of safety.

Response:

The EPA does not agree that the TMDL project should provide an independent PCB risk assessment. The PCB risk assessment occurred when PCB water quality criteria were developed and either approved or promulgated by the EPA; the TMDL project does not and need not provide an independent PCB risk assessment. As explained in Section 1.4 of the TMDL document (PCB Human Health Impacts), PCB water quality criteria are based in part on PCB toxicity assessments in the EPA's Integrated Risk Information System. The TMDL's allocations are established at levels necessary to attain and maintain the applicable PCB water quality criteria with a margin of safety.

As explained in response to comment 8.5.4, neither the TMDL's calculations of loading capacity nor the load and wasteload allocations in the TMDL are based on data collected using EPA Method 1668C. Rather, the loading capacity is based on the product of the harmonic mean river flow and the target in-stream PCB concentration of 1.3 pg/L and the density of water. See also Section 5.2 of the TMDL document (Loading Capacity).

11 Kaiser Aluminum

11.1 Comment:

Kaiser Aluminum Washington, LLC ("Kaiser") appreciates the opportunity to comment on the draft total maximum daily load ("TMDL") for PCBs in segments of the Spokane River and Little Spokane River. Kaiser has consistently worked toward water quality improvements in the Spokane River by significantly reducing its permitted discharge, actively participating in the Spokane River Regional Toxics Task Force and other stakeholder groups, continuously

identifying and addressing legacy sources of PCBs, and proactively piloting and implementing innovative technology to destroy PCBs.

Kaiser looks forward to continuing its collaboration with EPA, the Washington Department of Ecology ("Ecology"), and regional stakeholders to continue water quality improvements.

I. Kaiser is committed to taking effective actions to improve Spokane River water quality.

Kaiser's Trentwood Works facility ("Trentwood") was constructed by the U.S. Government Defense Plant Corporation in 1942 to produce aluminum for World War II aircraft. Kaiser has operated the Trentwood facility since the 1940s and produces high-quality aluminum for the aerospace and general engineering markets. Like facilities throughout the Spokane River watershed and throughout the state, the Trentwood facility historically used PCBs for their safety-related properties in electrical and hydraulic systems until PCBs were banned in 1978. Kaiser does not produce or use PCBs in any current manufacturing processes, but low-level residual PCBs remain at the Trentwood facility, in the groundwater underneath the facility, and in groundwater upgradient of the facility from non-Kaiser sources.

Kaiser values being a good steward of the environment and has made-and continues to make-significant efforts to reduce and eliminate sources of legacy PCBs at the Trentwood facility. Trentwood's on-site treatment system treats wastewater, stormwater, cooling water, and sanitary wastewater, discharging the treated water into the Spokane River as authorized by its NPDES Permit. Kaiser operates a walnut shell filtration system to remove approximately 82% of PCBs from its permitted effluent, and Kaiser's permit requires additional monitoring and control activities to address legacy sources of PCBs.

To reduce legacy PCBs in its permitted effluent, Kaiser has cleaned or replaced wastewater pipes impacted by historical contamination and removed contaminated sediment from a wastewater lagoon as part of treatment system maintenance. Kaiser has also reduced its water usage and discharge, even as Trentwood's production has increased, thereby reducing the volume of PCBs in its permitted effluent to the Spokane River. Kaiser discharges approximately 5 million gallons per day to the river, significantly less than its permit allowance of 11 million gallons per day.

Kaiser proactively seeks environmental solutions and, in coordination with Ecology, tested innovative technologies for prevention and control of PCBs in Trentwood's permitted discharge. After Kaiser's application to Ecology for a variance was put on hold, Kaiser nonetheless reached out to negotiate an agreed order to move forward with the actions described in the variance application. Pursuant to the agreed order and overseen by Ecology, Kaiser evaluated all known, available and reasonable methods of prevention, control and treatment of PCBs. Pilot testing

demonstrated that an ultraviolet/advanced oxidation process ("UV/AOP") can destroy PCBs and remove them from the environment,[1] and Kaiser has proceeded to build out a UV/AOP system capable of destroying up to 98% of PCBs in contaminated groundwater and is evaluating the technology's application to Trentwood's permitted discharge. Kaiser's UV/AOP system is the only known effort in the Spokane River watershed to destroy PCBs, including PCBs from upgradient of the Trentwood facility.

Finally, Kaiser implements and continuously updates a PCB pollutant minimization plan ("PMP") to identify and complete legacy PCB reduction activities. First required under the agreed order Kaiser proactively sought with Ecology and now an enforceable NPDES permit requirement, the PMP is a clear and measurable roadmap for water quality improvements that Kaiser updates regularly and submits to Ecology. Pursuant to the PMP, Kaiser has completed treatment system performance improvements, operational modifications, and material substitutions. These actions have reduced PCB inputs to the walnut shell filtration system that treats the facility's permitted effluent.

As demonstrated by reductions to its permitted discharge, pilot testing and evaluation of the UV/AOP system, PMP activities, and active participation in regional water quality collaborations such as the Spokane River Regional Toxics Task Force and the Spokane River Toxics Advisory Committee, Kaiser is committed to improving water quality in the region and to addressing legacy PCB contamination.

Response:

Comment noted. The EPA appreciates Kaiser’s efforts to reduce PCB discharges and its participation in the Spokane River Regional Toxics Task force and the Spokane River Toxics Advisory committee. The EPA has added information that the commenter provided to Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document.

11.2 Comment:

The draft TMDL disregards PCB reductions overseen and regulated by Ecology. Despite Kaiser's history of proactively addressing legacy sources and working with regional stakeholders, the draft TMDL inaccurately emphasizes Trentwood as a significant source of PCBs to the Spokane River. For example, the draft TMDL describes a legacy groundwater plume under Kaiser's property, without explaining that the site is regulated by Washington's Model Toxics Control Act and actively overseen by Ecology. Moreover, without citation, the draft TMDL assigns a significant volume (20.1 cfs) to Kaiser sources of water to the river and inaccurately implies that Kaiser is the source of any PCBs entering the river in the reach along its property. In fact, Kaiser pursued, in coordination with Ecology, pilot tests of innovative technologies to remove PCBs from groundwater, including PCBs from upgradient of Kaiser's property. These tests

demonstrated that the UV/AOP system can destroy up to 98% of PCBs in groundwater, and Kaiser moved forward to construct and operate a full-scale system, overseen by Ecology.

Finally, by adopting a single equation for all permitted discharges to the Spokane River, the draft TMDL is oversimplified. Kaiser discharges a significantly smaller volume of water-and accordingly, PCBs-to the river than the largest permitted discharger. As explained above, Kaiser has significantly reduced its permitted discharge volume and will achieve further volume reductions as Kaiser implements actions described in the PMP and overseen by Ecology. Kaiser recognizes that any PCBs in the Spokane River are a concern. However, by overemphasizing Trentwood's contribution of PCBs and failing to explain that Kaiser's ongoing reduction activities are enforceable, measurable, and effective, the draft TMDL does not present an accurate assessment of current sources and actions that are positively impacting water quality.

Response:

The EPA disagrees that the TMDL project is oversimplified. The TMDLs assign a wasteload allocation, a load allocation, a margin of safety and accounts appropriately for seasonal variation for each water quality limited segment. The TMDL project therefore operates at the correct level of complexity.

The EPA recognizes that the mass balance source assessment in the TMDL project applies to source discharges in August 2014, because this was the period with the best available synoptic data from the river and sources.

The EPA acknowledges Kaiser’s recent efforts to reduce PCB discharges. These actions are important steps to improve water quality in the Spokane River. The EPA has added the following statement at the end of the source assessment section to note that actions have been taken since 2014: “Finally, the EPA notes that these source loading estimates reflect conditions during the 2014 monitoring study. Since that time, the point source facilities have upgraded wastewater treatment technologies that remove more PCBs from wastewater, and Kaiser has taken actions to address the groundwater contamination plume at its Trentwood facility.”

The EPA disagrees with the comment that, without citation, the TMDL project assigns a significant volume (20.1 cfs) to Kaiser sources of water to the river and inaccurately implies that Kaiser is the source of any PCBs entering the river in the reach along its property. The TMDL document does not include a value of 20.1 cfs, but two flows are shown on a diagram of the model structure that represents the flow from Kaiser’s NPDES facility (8.7 cfs) and the estimated flow of the Kaiser Trentwood PCB-contaminated plume to the river (11.4 cfs). The combined flow is 20.1 cfs, but the TMDL project does not assign this flow value to Kaiser sources. The two sources are treated separately in the TMDL document. The groundwater

plume flow is an estimate and is only used in the source assessment, not the assigned TMDL allocation, which is expressed as a concentration. The flow for the NPDES facility is used to develop the wasteload allocation for that source.

The information sources for the estimated discharge flows for the Kaiser facilities are described in detail in Appendix C of the TMDL document (Spokane River PCB Mass Balance Assessment Tools). In the appendix, the EPA notes the uncertainty in the discharge volume of the contaminated groundwater plume. In reviewing the model structure diagram, the EPA found some minor discrepancies. The flow for the Kaiser NPDES facility should be listed as 8.0 cfs, not 8.7 cfs. This value was correctly shown in the wasteload allocation table later in the document. The estimated flow for the contaminated groundwater plume should be 11.5 cfs, not 11.4 cfs. The EPA has corrected these values on the diagram.

As part of TMDL implementation, Ecology will continue to administer the NPDES and Toxics Cleanup programs at the Kaiser facility.

11.3 Comment:

The draft TMDL will not drive water quality improvements. A TMDL is an "informational tool" that presents a plan to achieve water quality standards. Pronsolino v. Nastri, 291 F.3d 1123, 1129 (9th Cir. 2002). Calculating a TMDL requires a "complex scientific analysis" to inform stakeholders and regulators. See Maryland Dep't of Env't v. Assateague Coastal Tr., 484 Md. 399, 415, 299 A.3d 619, 627 (Md. 2023). Kaiser appreciates EPA's efforts to develop the draft TMDL to meet a schedule required by a consent decree.

Response:

Comment noted.

11.3.1 Comment:

Unfortunately, the draft TMDL will not drive water quality improvements, contrary to the intent of the Clean Water Act and the TMDL program. The draft TMDL employs a very simple model that overlooks sources of PCBs in the Spokane River watershed, relies on outdated and incomplete data, and aims for infeasible and unmeasurable discharge concentrations at the expense of achievable, action-driven water quality improvements. These deficiencies, explained in detail in the attached comments from Kennedy Jenks, result in a draft TMDL that does not present a realistic plan for achieving water quality improvements.

Response:

The EPA disagrees with each of these assertions. See below for responses to the detailed comments in the technical attachment to Kaiser’s comments.

11.3.2 Comment:

By ignoring significant sources of PCBs, the draft TMDL cannot achieve its goals. A practical, implementable TMDL considers all known and significant sources throughout a watershed. The PCB TMDL for the Spokane River should follow this approach and require all relevant jurisdictions-including Washington, Idaho, and the Spokane Tribe to coordinate water quality improvement efforts. EPA's PCB TMDL guidance describes many multijurisdictional TMDLs that could serve as the model for developing a comprehensive plan to achieve water quality improvements in the Spokane River that assesses all significant sources of PCBs and reduces contamination inputs throughout the watershed. PCB TMDL Handbook, EPA 2011; see also Anacostia Riverkeeper, Inc. v. Jackson, 798 F.Supp.2d 210, 218-219 (D.C. Cir. 2021) ("Recognizing that the Anacostia is a multistate water body and that efforts to reduce pollution on the river necessarily require coordination between multiple jurisdictions, EPA brought the District and Maryland together to collaborate on a new, system-wide sediment/TSS TMDL for the river.")

Response:

The EPA disagrees that the TMDL project ignores significant sources of PCBs. The TMDL has considered all known and significant sources throughout the watershed.

The EPA supports participation and coordination from all involved jurisdictions in TMDL-related activities. Each of the jurisdictions involved in the Spokane River PCB TMDL has participated in the TMDL development process, and the EPA expects continued participation and coordination during implementation under Ecology’s leadership.

11.3.3 Comment:

Instead, and contrary to EPA's stated intent, the draft TMDL does not address all "known PCB pollution inputs" throughout the 6,583-square mile river basin. The draft TMDL disregards known and significant sources in the watershed, across multiple jurisdictions. Without addressing these sources, the draft TMDL does not lay out a realistic path to achieving water quality standards.

Response:

The EPA disagrees that the TMDL project ignores PCB sources. None of the sources of PCBs to the Spokane River discussed in this comment have been ignored, including atmospheric deposition (see Section 5.4.4 of the TMDL document (Atmospheric Deposition)), regional groundwater and sediment (see Section 5.4.2 of the TMDL document (Regional Groundwater and Diffuse Sources)), stormwater (see Sections 5.3.2 (Permitted Stormwater and Combined Sewer Overflows) and 5.3.3 (General NPDES Permits and Diffuse Stormwater Discharges) of the TMDL document), and atmospheric deposition (see Section 5.4.4 of the TMDL document

(Atmospheric Deposition)). The nature of the sources and allocation considerations for each of these source categories is discussed in the TMDL document.

11.3.4 Comment:

First, the draft TMDL describes "boundary conditions" at the Idaho border as a catch-all that includes regulated and unregulated upstream sources. EPA stated at the public meeting on May 29, 2024, that it will take a "hard look" at NPDES permits issued by the Idaho Department of Environmental Quality (IDEQ) to determine if permitted discharges will impact downstream standards and the final TMDL. Even if this "hard look" approach incorporates the goals of the draft TMDL into IDEQ permits, there is no such regulatory process in place to take a "hard look" at non-point source inputs in Idaho or their transfer to the Spokane River and eventual flow into impaired segments in Washington.

In particular, the draft TMDL's treatment of Coeur d'Alene Lake is a significant deficiency. EPA acknowledges the "relatively large surface area" of the lake as "an important interception interface for bulk atmospheric deposition." In other words, the lake is large, and atmospherically deposited PCBs flow "readily" from the lake into the Spokane River. Despite the acknowledged significance of atmospheric deposition to Coeur d'Alene Lake, EPA does not assign a load allocation to this source and, instead, lumps it into the "boundary conditions" at the Idaho border.

Response:

See response to comment 2.2 and Section 5.10 of the TMDL document (Reasonable Assurance) for Idaho’s responsibilities to meet the boundary condition concentration to the river. The EPA disagrees that the treatment of the lake is deficient. The lake is outside of the geographic scope of the TMDL, so establishing a specific allocation for the lake would be inappropriate.

11.3.5 Comment:

Second, the draft TMDL ignores background levels of PCBs in groundwater throughout the watershed, focusing on a limited number of legacy sources without explaining how EPA derived volume inputs for those targeted sources or what data set EPA used to evaluate groundwater inputs throughout the watershed. Groundwater with elevated background levels of PCBs infiltrates the river throughout the watershed, but EPA does not acknowledge this potentially significant source of PCBs to impaired segments.

Response:

The EPA disagrees. The TMDL project sets a load allocation for PCBs entering the river from regional groundwater.

In the source assessment documentation (Appendix C of the TMDL Document (Spokane River PCB Mass Balance Assessment Tools)), the EPA describes the bases for flow volume estimates for contaminated groundwater plumes and estimates of PCB concentrations in regional groundwater, and discusses the uncertainty in these estimates.

11.3.6 Comment:

Finally, the draft TMDL ignores stormwater and sediment as sources of PCBs to the river, despite evidence that these sources contribute PCBs and are not currently controlled by any active regulatory program.

Response:

The EPA disagrees. Regarding stormwater and sediment sources, see response to comments 5.6 and 7.3.3.

11.3.7 Comment:

By ignoring these significant sources of PCBs to the Spokane River, the draft TMDL does not present a realistic or useful roadmap to achieve water quality improvements. The draft TMDL employs an overly simplistic model that fails to capture the complexity of the watershed and known PCB sources. Without a more comprehensive assessment, the draft TMDL cannot provide a useful "informational tool" to stakeholders responsible for implementing water quality improvements.

Response:

See responses to comments 11.3.4, 11.3.5, and 11.3.6 above.

11.3.8 Comment

The draft TMDL assigns concentrations that cannot be measured. The draft TMDL is not self-implementing. Ecology will be responsible for achieving water quality standards by implementing the TMDL and using other regulatory tools to reduce contamination. The draft TMDL does not provide meaningful information to Ecology or other stakeholders because it calculates allocations by assigning concentrations that cannot be measured.

There is no test method that can reliably detect PCBs at a concentration of 1.3 pg/L. By assigning load allocations and waste load allocations based on an unmeasurable concentration, the draft TMDL does not provide useful or actionable information to Ecology or other stakeholders working for water quality improvements.

Response:

The EPA disagrees that the TMDL project does not provide useful or actionable information. See also response to comment 4.10. Regarding allocations set at levels below detection, see response to comment 3.1.2.

11.4 Comment:

The draft TMDL should follow the model of successful TMDLs that have achieved water quality improvements. There are examples of successful TMDLs that have established a roadmap to achieve water quality improvements. The TMDL for PCBs in the Spokane River should adopt the approach from these TMDLs and provide a realistic roadmap to stakeholders.

Response:

The EPA has developed a TMDL project with straightforward allocations for implementation. Section 5.10 of the TMDL document (Reasonable Assurance) describes past, ongoing and future efforts to achieve PCB reductions in the Spokane and Little Spokane Rivers.

11.4.1 Comment:

EPA guidance recommends that a multijurisdictional TMDL include calculations to achieve water quality standards in each jurisdiction. The draft TMDL's assignment of "boundary conditions" that are not based on data or modeling that account for significant known sources does not follow this recommendation. Instead, the draft TMDL disregards significant inputs regulated by Idaho and the Spokane Tribe, as well as upgradient and background levels of PCBs within Washington. In contrast, multijurisdictional TMDLs that follow the guidance recommendations include modeling from each affected jurisdiction and throughout the subject watershed. The Delaware River PCB TMDL and the Ohio River PCB TMDL each assess and model inputs from sources across three states (and two EPA regions). The Delaware River TMDL assessed sources throughout the watershed to calculate inputs and load allocations in multiple zones. The draft PCB TMDL for the Spokane River should similarly take a comprehensive view of sources throughout the watershed, including background and upgradient groundwater concentrations and aerial deposition.

Response:

The EPA disagrees that the TMDL project disregards sources under Idaho’s and Spokane Tribe’s jurisdictions and upgradient and background levels of PCBs within Washington. However, the EPA does not consider this TMDL project to be a multijurisdictional TMDL, in that it is designed to restored impaired segments only within the state of Washington. The boundary condition assignments to border waters are based on a determination that there are pollutant loadings entering Washington waters from sources under Idaho’s and Spokane Tribe’s jurisdictions, and the boundary concentrations are based on the 1.3 pg/L PCB target and the assimilative capacity

of the river. The geographic scope of the TMDL project, designed to address relevant PCB-impaired waters in Washington, aligns with the consent decree that requires the EPA to develop this TMDL project. In addition to addressing sources in Washington, the TMDL document provides a clear roadmap for source controls in Idaho and Spokane Tribe's waters by establishing boundary condition concentrations to the jurisdictional border waters that must be met to attain water quality standards of the Spokane Tribe. These boundary condition concentrations are integrated with the allocation analysis in the TMDL. See also response to comment 2.2. Regarding the concept of natural background levels of PCBs, see response to comment 2.17.

11.4.2 Comment:

EPA should also follow the example of the Spokane River TMDL for dissolved oxygen, which assessed natural conditions across impacted jurisdictions to model TMDL scenarios and assign allocations to point sources, groundwater, and tributaries. The draft PCB TMDL for the Spokane River should similarly comprehensively address background and sources throughout the watershed to provide a realistic roadmap for water quality improvements.

Response:

The EPA disagrees that it is necessary to extend the analyses into jurisdictions outside the scope of the TMDL project and set allocations for those outside sources. While the Spokane River TMDL for dissolved oxygen did employ a model of the Idaho portion of the river in the water quality modeling for that project, it did not assign wasteload allocations to point sources in Idaho. Similar to this project, that TMDL project addressed Idaho sources by establishing the conditions in Idaho necessary to meet downstream standards in Washington, in concert with allocations in Washington.

The TMDL project takes a comprehensive approach and addresses all PCB sources in waters entering the Spokane River from the three jurisdictions (Washington, Idaho, Spokane Tribe). Regarding the concept of natural background levels of PCBs, see response to comment 2.17.

11.5 Comment:

Although the draft TMDL paints an incomplete picture of the inputs of PCBs to the Spokane River and leaves many gaps regarding the actions necessary to achieve water quality improvements, Kaiser welcomes the opportunity to work with EPA, Ecology, IDEQ, the Spokane Tribe, and other stakeholders to continue to gather data, address legacy PCB sources, and reduce PCBs inputs from throughout the watershed.

Attached to this letter are technical comments and recommendations for the final TMDL from Kennedy Jenks. Kaiser looks forward to continuing its work to implement measurable water quality improvements in the Spokane River region.

Response:

While the EPA disagrees that the TMDL project is incomplete or leaves gaps, the EPA otherwise notes this comment.

12 Kaiser Aluminum – Technical Attachment

12.1 Comment:

EPA released the Draft TMDL to fulfill obligations in a consent decree that resolved litigation with Sierra Club and Center for Environmental Law and Policy. The Draft TMDL responds to observed conditions in 12 assessment units (AUs) in the Spokane and Little Spokane Rivers that the State of Washington identified on its 2014-2018 Clean Water Act (CWA) 303(d) list as impaired. The listing is based on polychlorinated biphenyl (PCB) presence in fish tissue samples at concentrations greater than the fish equivalent tissue concentration which equates to the state of Washington's water quality criteria (WQC) for human health1 of 7 picograms per liter (pg/L). The listed AUs for PCB impairments occur upriver of the Spokane Reservation (above River Mile 32), with exception of one AU at river miles 12.7 to 11. A map showing impaired AUs in the study area is included as Figure 1. The boundaries for the Draft TMDL extend along the length of the Spokane and Little Spokane Rivers in Washington, from the state border with Idaho to the mouth of the Columbia River. Total Maximum Daily Load (TMDL) limits established in the Draft TMDL are proposed to achieve the Spokane Tribe WQC for human health of 1.3 pg/L for PCBs in the water column.

These comments on the Draft TMDL include technical comments and considerations for the implementation of the PCB TMDL as presented including:

- The published Draft PCB TMDL report employs a simplified model which does not account for PCB fate and transport in the river water column.

- Proposed waste allocations for point sources have been developed to achieve a 1.3 pg/L PCB concentration at all points in the river. This concentration is below background river concentrations and the limits of detection for all current analytical methods.

- Load allocations for non-point sources have been developed to achieve the 1.3 pg/L WQC, despite current stormwater and groundwater concentrations being orders of magnitude higher.

- There are currently no known treatment technologies capable of reducing PCB loading to these limits.

- The proposed waste load allocations are not currently feasible and would necessitate water quality variances for PCB point sources within the study area.

Response:

The EPA appreciates these technical comments and responds to these summary comments in the detailed comments and responses below. See responses to comments 12.2 through 12.20 below.

12.2 Comment:

The Draft TMDL is inconsistent with EPA's technical guidance for the development of PCB TMDLs. EPA follows the technical guidance PCB TMDL Handbook for development of PCB TMDLs (EPA, 2011). EPA's Technical Guidance includes various levels for development of TMDLs, including the Level One Model Approach used as the basis to develop the Draft TMDL. The following is a definition of a Level One Model approach: Level one approaches for PCB TMDLs include non-modelling approaches, such as assuming a proportional one-to-one relationship between PCB loadings and fish tissue and using a bioconcentration factor to calculate a water column value. A level one approach may also involve back-calculating from the sediment targets and sediment data to determine the loading capacity. However, the Draft TMDL model is a simplified mass balance, relying on historical analytical data collected 10 years ago and simplified transport assumptions instead of relying on fish tissue concentrations, bioconcentration factors, and/or sediment interactions. Therefore, the Draft TMDL is inconsistent with EPA's technical guidance.

The Draft TMDL model was used to determine the maximum allowable PCB loadings from all sources within the watershed with the goal of attaining applicable WQS. The model was constrained to assume that PCBs were fully mixed and conserved in the river and that incoming PCBs were transported downstream. The model ignored PCBs in sediment and focused on water column concentrations, given that WQC are written with respect to that metric. Load allocations (LAs) and waste load allocations (WLAs) were developed to achieve a 1.3 pg/L PCB concentration at the confluence with the Columbia River. However, the lowest estimated PCB concentration in the river study area is 48 pg/L, which was measured in the Spokane River water column at the Washington/Idaho border (EPA 2024). The Draft TMDL Report states that PCB loading from the upstream Idaho extension of the river may be due to stormwater runoff, groundwater infiltration, and aerial deposition in Coeur d'Alene Lake, approximately 11 miles upriver. To determine WLAs for point sources, the model constrained non-point source concentrations to 1.3 pg/L, including river water crossing the state border and groundwater

infiltrating into the river. As a result, the model indicates that PCB concentrations from point sources along the river must be at or below 1.3 pg/L to meet the WQC.

Response:

The EPA disagrees that the TMDL project is inconsistent with EPA's technical guidance. The EPA's 2011 guidance provides examples on how PCB TMDLs may be done. As explained in Section 4 of this TMDL document (TMDL Technical Approach), different technical approaches can be used to develop TMDLs based on available data and site-specific characteristics. Section 4 of the TMDL document (TMDL Technical Approach) also describes the reasoning behind the technical approach. See response to comment 7.3 for more information on the mass balance model and model assumptions. See response to comment 7.6 for information on the Washington-Idaho and Washington-Spokane Tribe reservation boundary conditions.

12.3 Comment:

The Draft TMDL uses a conservative, simplified approach and makes several assumptions which are atypical for a study of this scope and level of contamination. Typically, TMDLs for rivers with high PCB loadings consider multiple PCB removal mechanisms from the water column (TetraTech 2016, Virginia Tech 2023). The simplified Draft TMDL assumes that no PCBs are lost from the system due to volatilization, sedimentation, adsorption, or degradation. This conservative assumption is considered to provide an inherent margin of safety (MOS) for the TMDL. While PCB degradation in natural waters is a slow process, the omission of volatilization and sedimentation removal mechanisms from the Draft TMDL will not yield accurate results. These removal mechanisms and other considerations for the Draft TMDL are described in more detail in the following subsections. A discussion of the mass balance model included in the Draft TMDL is included in Section 2.4.

Response:

The EPA disagrees that its assumptions about PCB conservation are inappropriate. For further discussion, see response to comment 7.3.

12.4 Comment:

The model ignores volatilization as a PCB removal mechanism from natural waters, despite atmospheric transport being the most important mechanism for global dispersion of PCBs (Martinez 2019; Swarupa 2005). Net volatilization of PCBs from contaminated waterways has been measured as greatly exceeding aerial deposition in multiple studies (Apell 2017; Martinez 2019). PCB transport to the atmosphere increases with concentration in the water column and is most associated with lower molecular weight congeners. PCBs readily volatilize from the water column when adsorption effects are absent (EPA "Technical Factsheet on PCBs," n.d.). In

certain segments of the Spokane river with low sediment loading and high PCB concentration, PCB volatilization may be a removal mechanism that should be considered.

Response:

The EPA disagrees that the model ignores volatilization. For further discussion, see response to comment 7.3.7 and 7.13.4.

12.5 Comment:

The model omits sediment and stormwater interactions with the water column. Sediment acts as a reservoir of PCBs for bioaccumulation by aquatic receptors as well as transport to the water column followed by losses from volatilization. A 2019 study of Spokane River sediments within the TMDL boundaries measured total PCB concentrations as high as 125 ng/g dry weight in sediments (Ecology, 2022). PCB concentrations in the upper 10 cm of sediments in Long Lake in Spokane have been measured from 8 to 33 ng/g in the upper portion of the lake, and 28 to 75 ng/g in the lower portion of the lake (LimnoTech, 2016). Ingestion of sediments and contact with contaminated sediments are mechanisms for uptake of PCBs into fish tissue. Fish with benthic habits have been shown to bioaccumulate more PCBs than those with pelagic habits (Zamudio et al, 2021).

Sediment associated with stormwater runoff has also been ignored as a source of PCBs in the model. A previous TMDL for PCBs in the Palouse River identified erosion mitigation measures as the primary best management practices (BMPs) to reduce PCB pollution (Ecology 2007).

Suspended sediments in stormwater are believed to be the main contributor of PCB loading to the Spokane River during storm events (Ecology 2007b). The continued deposition of contaminated sediments from stormwater runoff may lead to dissolution in the river water column. This would prevent the attainment of WQC until natural degradation processes lower background sediment concentrations.

The Draft TMDL is proposing monitored natural attenuation as the primary method to achieve the WQC due to there being no sediment remedial actions presented in the Draft TMDL. Multiple TMDL reports propose natural attenuation processes to remove PCBs (ORSANCO 2002; Ecology 2007) and it is important to note that PCB concentrations in sediment and fish tissue have decreased over the past 10-20 years (Ecology 2007; Hornbuckle 2006; Rodenburg 2021). The Spokane River has a high flow velocity which induces scouring of the riverbed, and these same conditions may promote the rapid movement of eroded sediment through the water column followed by losses through desorption and volatilization. The Draft TMDL did not provide any details including a map showing areas of riverbed scouring and deposition, so it is unclear how important this transport mechanism is.

Due to the high concentration of PCBs in Long Lake sediments and sediment disturbing feeding habits of fish, fish tissue concentrations could remain above safe levels for human consumption even if water column PCB concentrations were reduced to 1.3 pg/L. The Draft TMDL report acknowledges that PCB diffusion from surface sediment is a transport pathway but assumes that continued sediment deposition would cover contaminated sediment. The report also states that this would require many years or decades, which would lead to ongoing partitioning of PCBs from sediment to surface water until sediments are naturally capped.

Response:

The EPA disagrees that the TMDL project treats sediments inappropriately. While there are uncertainties in the relative importance of stormwater to the long-term average conditions in the river, stormwater is addressed in the TMDL document. The model includes stormwater loadings for the TMDL assimilative capacity evaluation. Most importantly, the TMDL project includes an allocation concentration of 1.3 pg/L total PCBs for stormwater, which applies to whole water samples and captures the particulate fraction of the stormwater. See also responses to comments 5.4 and 12.12. For additional information on sediments, see response to comment 7.3.3.

12.6 Comment:

The Draft TMDL ignores the differences in toxic effect from each of the unique 209 PCB congeners. The report determines TMDL limits based on total PCBs instead of identifying and targeting the primary congeners of concern for removal. Congeners with high molecular weights adsorb more strongly to sediment and bioaccumulate more efficiently than lower molecular weight congeners (TMDL 2018). Research has also revealed variable PCB homologue distributions in loadings from point and non-point sources on the Spokane River (LimnoTech 2018). The same study showed that PCB homologue distribution in fish tissues may be shifting toward lower molecular weight congeners over time, potentially due to implementation of advanced filtration technologies at sanitary treatment plants indicating that this is an important removal and management consideration in the Spokane River that the Draft TMDL ignores.

Response:

The EPA disagrees with the implied comment that it should have treated congeners differently. For further discussion, see response to comment 4.7.

12.7 Comment:

The Draft TMDL does not provide a plan for measuring PCBs in the water column at the WQC. The compliance method listed in the Draft TMDL, Method 1668C, has a reporting limit of 20 to 200 pg/L for individual congeners, which is higher than the proposed TMDL of 1.3 pg/L (EPA, 2010). There is currently no reliable analytical method approved by EPA that can detect total

PCB concentrations below approximately 65,000 pg/L (EPA 2024). Below is a summary of the available analytical methods for measuring PCBs.

2.2.1 EPA Method 608.3 (PCB Homologs)

EPA Method 608.3 detects the presence of nine PCB aroclors via gas chromatography (GC) and is the only PCB method listed in 40 CFR part 136 for CWA compliance. This is the most sensitive method for PCB aroclors and can also be used for organochlorine pesticides. The published MDL and reporting limit are only provided for Aroclor-1242 (EPA 2016). The published MDL is 65 ng/L (65,000 pg/L) and the published reporting limit is 195 ng/L (195,000 pg/L). Based on NPDES permits, the MDL for all aroclors is listed as 65,000 pg/L (EPA 2024).

2.2.2 EPA Method 8082 (PCB Aroclors)

EPA Method 8082 detects the presence of PCB aroclors via GC. If PCBs are present but not in the form of one of the aroclors, or the aroclor is too weathered, the results can be reported as not detected. Aroclors may not be detected at concentrations above the minimum method detection limits (MDLs) of 0.1 to 0.5 parts per billion (µg/L).

2.2.3 EPA Method 680 (PCB Homologs)

EPA Method 680 detects the presence of PCB homologs via GC. Homologs are the 10 groupings of congeners that contain 1 to 10 chlorine atoms, regardless of position on the biphenyl molecule. This method has the advantage of detecting the presence of PCBs that may not be in the form of aroclors, as well as aroclors that have been weathered, or were misidentified or not detected by EPA Method 8082. EPA Method 680 MDLs are approximately the same as EPA Method 8082 MDLs (0.1 to 0.5 parts per billion, µg/L).

2.2.4 EPA Method 1628 (PCB Congeners)

EPA Method 1628 is a low-resolution GC/MS using a selected ion monitoring (SIM) procedure that identifies the presence and concentration of each of the 209 PCB congeners. The method calibrates and quantifies 65 PCB congeners selected by EPA as priorities and the remaining 144 congeners are quantified indirectly using isotope dilution standards of similar congeners with the same level of chlorination. The method detection limits are 920 to 4,980 pg/L), which is lower than EPA Method 8082 and EPA Method 680. However, EPA Method 1628 has only practically been used for monitoring as the repeatability and consistency of this method have yet to be approved in 40 Code of Federal Regulations (CFR) part 136 for CWA compliance (Johnson, 2013; 40 CFR part 136 Appendix A). Method 1628 can be considered appropriate as a screening level tool for determining PCB concentrations. The average MDL of the 209 PCB

congeners is approximately double the proposed TMDL limit. Table 1 shows a comparison between the published MDLs of different analytical methods.

2.2.5 EPA Method 1668C (PCB Congeners)

EPA Method 1668C is a high-resolution gas chromatography/mass spectrometry (GC/MS) procedure that identifies the presence and concentration of each of the 209 PCB congeners. The method detection limits are 300 to 800 pg/L total PCBs), which is much lower than EPA Method 8082 and EPA Method 680. However, EPA Method 1668c has only practically been used for monitoring as the repeatability and consistency of this method have yet to be approved in 40 Code of Federal Regulations (CFR) part 136 for CWA compliance (Johnson, 2013; 40 CFR part 136 Appendix A). Method 1668 can be considered appropriate as a screening level tool for determining PCB concentrations. The average MDL of the 209 PCB congeners is an order of magnitude above the proposed TMDL limit. Table 1 shows a comparison between the published MDLs of different analytical methods.

MDLs are established by the EPA in ideal laboratory conditions that do not include dilution or matrix interference. Additional information from two labs regarding their ability to meet these MDLs is presented in Table 1.

Response:

The EPA concurs that several methods are available for measuring PCBs with large differences in detection levels and PCB analytes. TMDLs set allocations for allowable levels that can be discharged to meet water quality standards, but TMDLs are not required to specify how a pollutant will be monitored during TMDL implementation. When the TMDL project is implemented, tracking and monitoring will be important to assess progress. Monitoring methods may vary depending on the purpose of the monitoring (e.g., NPDES permit compliance, assessment of ambient river conditions). The SRTAC can take strategic approaches to monitoring as part of TMDL implementation.

12.8 Comment:

EPA and several states in the U.S. have developed TMDLs to address PCBs in multiple waterbodies on CWA 303(d) lists. Review of established PCB TMDLs identifies approaches that may be more appropriate for the Spokane River for consideration in developing the PCB TMDL for the Spokane River.

The EPA (2011) PCB TMDL Handbook recommends for multi-jurisdictional waterbodies (e.g., the Spokane River) that a TMDL “should demonstrate that it is set at a level to achieve the Water Quality Standard (WQS) in each state; where the state standards are different, the TMDL should include a separate TMDL calculation to meet each standard.” The Spokane River

comprises a multi-jurisdictional watershed spanning portions of the states of Washington and Idaho. PCB WQC to protect human health vary within the Spokane River watershed, ranging from 1.3 pg/l (for waters within the Spokane Tribe reservation) to 7 pg/l (for surface water in Washington) to 190 pg/l (for surface water in Idaho). The draft TMDL targets achieving the 1.3 pg/l WQC throughout the Spokane River in Washington – from the Idaho state line to the Columbia River. The Draft TMDL states that "The EPA expects that Idaho and Spokane Tribe will meet their boundary condition [PCB] concentrations of 1.3 pg/l". The draft TMDL should be revised to present data, calculations, and modeling to evaluate and support this expectation.

Other PCB TMDL evaluations for interstate waters provide examples of such, including the Delaware River (for Delaware, New Jersey, Pennsylvania), Ohio River (for Ohio, Pennsylvania, West Virginia), and Shenandoah River (for Virginia, West Virginia).

The TMDL report does not include a plan for implementing the WLAs or reducing background water column or groundwater concentrations to 1.3 pg/L. The EPA recommends that states or agencies develop an implementation plan within PCB TMDL reports, though this is not a federal requirement that is subject to EPA approval (EPA 2011). Some PCB TMDL documents prepared by Ecology and other state agencies include either implementation concepts or explicit implementation plans to explain regulatory, best management practices, minimization actions, and adaptive management, and monitoring approaches to outline means and methods to pursuing compliance with WQC. The Palouse River Chlorinated Pesticide and PCB TMDL, Water Quality Improvement Report, and Implementation Plan provides one example developed by the Washing Department of Ecology (Ecology) (Ecology 2007).

Response:

As explained in Section 5.10 of the TMDL document (Reasonable Assurance), Ecology will be working in partnership with others to develop a TMDL implementation plans. EPA expects that Idaho will account for the downstream boundary condition in the river at the Washington-Idaho border when taking actions on discharges that contain PCBs. See responses to comments 2.2 and 15.10.4.

12.9 Comment:

TMDL Model Technical Comments: The EPA used a simple mass balance spreadsheet to estimate the cumulative impact of the allocated loading to sources throughout the study area presented in the Draft TMDL. The spreadsheet model estimated PCB concentrations in the river at multiple locations, including locations with known tributary or groundwater inflows and point source discharges. This section presents several limitations with the Draft TMDL model for consideration.

Model Calibration: Spokane River PCB Mass Balance Assessment Tools included as Appendix C to the Draft TMDL summarizes the approach and results of the modeling effort used as the basis for the Draft TMDL approach to meeting WQC for PCBs. The model has several limitations that the authors identify but do not address or resolve.

The following assumptions were presented in the model approach and are discussed below:

12.9.1 Comment

Concentrations calculated at a given location assume that inflows are completely mixed with the mainstem Spokane River flow.

The data used for the model (August 2014) are a single set of limited synoptic PCB data during late summer low river flow. These concentrations are not likely to be representative of a statistical mean of PCB concentrations found in the river.

Response:

The EPA agrees with these descriptions of the analysis.

12.9.2 Comment

The flow balance assumes that diffuse and groundwater inflows and outflows are similar to conditions measured in the United States Geological Survey (USGS) groundwater study in September 2004.

The 2004 study had a mainstem flow at river mile 100.7 of 645 cubic feet per second (cfs). The 30-year harmonic mean flow at river mile 100.7 is 1,988 cfs. This is over a 300% increase from the data used to calibrate the model. Additionally, the data used for groundwater inflow at the 2004 flow is likely not applicable at the higher flow rate as lower groundwater inflow would be expected with increased hydraulic head in the river.

Response:

The EPA agrees with the first sentence. Regarding the second paragraph (2.a in comment), the flows cited are accurate. Regarding assumed groundwater flows, groundwater conditions during higher Spokane River flows may be different than the groundwater flows at lower river flows, but this is speculation. There is no available information for groundwater flows when the Spokane River is at the harmonic mean flow. At this higher harmonic mean flow, the groundwater influence on mainstem river flows is diminished compared to the low-flow August conditions, and the higher upstream inflows from Idaho are relatively more influential on the flow balance.

12.9.3 Comment

There is an anomalous groundwater outflow and diffuse PCB concentration at river mile 72.8.m presented in the model.

Response:

The EPA does not agree that the groundwater outflow and diffuse PCB concentration at river mile 72.8 in the model are “anomalous”. The USGS groundwater study identified substantial outflows in this reach. The PCB concentration of this outflow is accurately set at the river PCB concentration. The comment may reflect confusion about diffuse PCB inflows (at the regional groundwater concentration) and diffuse PCB outflows (at the river concentration).

12.9.4 Comment

The TMDL report uses a single source of 10-year-old sample data with a small sample size to calibrate the model. Additionally, this data was collected at a measured mainstream flow of 742 cfs at river mile 100.7, which is 37% of the 30- year harmonic mean to calculate the TMDLs. Additional data should be collected for model calibration that is more in line with the 30-year harmonic mean flow.

Response:

Data limitations are a challenge in all modeling projects. In this case, the EPA used the most comprehensive synoptic sampling dataset (SRRTTF sampling in August 2014) to develop and calibrate the source assessment model. As noted in the model documentation, the TMDL model is applied using user inputs for PCB source concentrations, not past sampling information. As part of TMDL implementation, future monitoring efforts can account for the seasonal variation in flow and the harmonic mean flow condition underlying the TMDL project. For more information about data used in the modeling, see response to comment 12.9.7.

12.9.5 Comment

Table 2 presents the model calibration summary as presented in the Draft TMDL. From Table 2, the model is calibrated well at the far upstream and downstream reaches of the model, however, the flow and PCB concentration calibration in the central portion of the model vary widely from measured values as presented below (up to 47% high for PCBs and 20% low for flow).

Response:

The model error cited is relatively low given the system complexity and data limitations. It is also notable that there is not a clear bias. At a given sampling location, the predicted PCB concentrations may be above or below measured concentrations.

12.9.6 Comment

The flow balance assumes that diffuse and groundwater inflows are the only unmeasured flows. Estimated groundwater inflows/outflows are distributed uniformly between gauge locations.

Other unmeasured flows likely contribute to the river balance and total PCBs (TPCBs), including stormwater not captured by the publicly owned treatment works (POTWs) that flow directly into the Spokane River.

Response:

The EPA agrees with these descriptions of the analysis.

12.9.7 Comment

In summary, the model calibration includes older data that may no longer be relevant and considers a small PCB concentration data set over a short period of time in 2014. The model calibration appears to only be valid for final upstream and downstream locations (endpoint calibration). The model also assumes that 11.4 cfs of groundwater is coming from the Kaiser area with PCB concentrations exceeding 100 pg/L. The source of this data is unclear and may not be accurate.

Additionally, model calibration and validation data quality objectives were not presented with the model report and it is unclear what was considered acceptable. As already discussed, PCB data is limited, however, additional flow data could also have been used to perform sensitivity analyses on a larger set of flow data to determine if the model was property constructed through various flow conditions.

Response:

The EPA disagrees. The source assessment model for August 2014 is clearly relevant information for the TMDL process. This analysis provides general insight to the relevant impact of different sources and PCB fate and transport in the river. The model calibration is reasonable throughout the river reaches that have been monitored. The model documentation in Appendix C of the TMDL document (Spokane River PCB Mass Balance Assessment Tools) describes the basis for flow and PCB concentrations estimated for the Kaiser contaminated groundwater plume in August 2014. See also response to comment 12.9.4.

Model acceptance considerations were described in the Quality Assurance Project Plan (QAPP) referenced in the model documentation. The predicted flow in the models for both August 2014 and the harmonic mean flow show reasonable agreement with the measured flows.

12.10 Comment:

River Flow: Following EPA's promulgation of Revisions to the Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (65 FR 66444), the EPA applied the annual harmonic mean river flow as the critical condition for applying WQC to protect human health. EPA assumed that working with the long-term river flow information and average annual PCB concentrations was more critical than assessing seasonal variability of those parameters; whereas the CWA requires TMDLs to consider seasonal variation to assess the critical condition. The EPA used a 30-year record period (1991-2021) to compute the harmonic mean flow for the TMDL project. However, EPA also states that early data may not represent current and future flows (due to differing water uses, dam operations, and climate change effects), as such, relying on harmonic mean flows may not provide insight into the critical condition required under the CWA.

Response:

The EPA disagrees that harmonic mean flows provide insufficient insight into critical conditions. As stated by the commenter, the use of the harmonic mean flow to implement human health criteria is recommended in the *Revisions to the Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000)*. However, for carcinogens, the use of the harmonic mean flow for use in implementing human health criteria dates to the EPA's *Technical Support Document for Water Quality-based Toxics Control* (1991); see Section 4.6.2 of the Technical Support Document.

The EPA's PCB TMDL Handbook addresses seasonal variation in Part IX, where it states "the effects of organochlorine compounds are manifested over long time periods in response to bioaccumulation in the food chain. Therefore, short term loading variations (within the time scale of wet and dry seasons each year) are not likely to cause significant variations in beneficial use effects." As such, the EPA considered seasonal variations and found that the harmonic flow appropriately protects the critical conditions for attaining the beneficial use.

12.11 Comment:

The EPA also assigned a PCB boundary condition concentration ranging from 0 to 1.3 pg/L for tributaries and groundwater that flow directly into the Spokane River. This condition includes groundwater near Kaiser Aluminum which recharges the river between Greenacres Gaging Station and Trent Bridge Gaging Station with current estimated bulk concentrations from 80 to 121 pg/L (Kaiser 2019). Four shallow monitoring wells upgradient of the Kaiser site have long term (2009-2018) average, 5X blank corrected PCB concentrations ranging from 94 to 320 pg/L (Kaiser 2019). These non-point source wells have a different PCB composition than wells within the Kaiser legacy PCB plume (LimnoTech 2018). Also note that Kaiser groundwater intake from

deep wells has long term average, 5X blank corrected PCB concentrations ranging from 12 to 18 pg/L (Kaiser 2019). These higher observed groundwater concentrations likely add more mass to the mass balance model than what was assumed, leading to a biased low result in regard to PCB concentration results of the model.

Response:

The EPA has acknowledged the uncertainty in estimated regional groundwater concentrations. As noted in the TMDL, the August 2014 source assessment resulted in an estimate of 21 pg/L in regional groundwater, which is consistent with the deep well samples noted in the comment (but slightly higher, not lower).

The TMDL allocations are a different matter than estimated current concentrations. The comment is inaccurate in stating that 0 to 1.3 pg/L are assigned for tributaries and groundwater. The same single value of 1.3 pg/L is used as the allocation concentration for all of these inflows.

See also response to comment 12.16.

12.12 Comment:

Stormwater: Stormwater runoff from urbanized areas of the City of Spokane is a major contributor of PCBs to the river. The assimilative capacity analysis assigned a PCB concentration in stormwater from 0 to 7.0 pg/L to achieve WQC at the mouth of the Spokane River. The Draft TMDL recommends BMPs such as infiltration basins and rain gardens to reduce sediment transport from stormwater. However, such BMPs cannot provide reductions in stormwater PCB concentration to the WQC, as the average concentration is four orders of magnitude greater than the tribal standard. PCB concentrations in water as high as 280,000 pg/L have been measured in Spokane stormwater basins (Ecology 2007b). In addition, stormwater sources may include uncontrolled stormwater outside of City and County infrastructure that may collect it and treat it. These higher observed stormwater concentrations likely add more mass to the mass balance model than what was assumed, leading to a biased low result in regard to PCB concentration results of the model.

Response:

The EPA agrees that managing stormwater to achieve the wasteload allocations is a major challenge, but the EPA disagrees with the presumption that BMPs cannot provide the necessary reductions. Infiltration basins can potentially eliminate stormwater discharges to the river, and infiltration was identified as a potentially applicable control action for stormwater in the SRRTTF's 2016 comprehensive plan. However, infiltrated stormwater could still contribute to

regional groundwater PCB loadings to the river. Many actions are occurring to address stormwater in the basin and will continue during the implementation of the TMDL project.

When applying the mass balance model to evaluate current source loadings, the best available data was for summer conditions (August 2014) with low stormwater volumes, so the relative importance of stormwater is not highlighted in that analysis. However, there is no evidence that the model is biased due to stormwater uncertainties. As noted in response to comment 12.11, there is not a systematic bias in the model due to consistent overprediction or underprediction.

In Section 4.1.1 of the TMDL document (Mass Balance and Source Contributions), the EPA reports SRRTTF estimates for the potential range of stormwater loadings.

12.13 Comment:

Aerial deposition may represent a large PCB source for remote areas (Rodenburg, 2022b). There has been limited investigation into aerial deposition of PCBs in the study area. One study determined that homolog profiles and PCB loading from aerial deposition vary considerably across the Spokane area (Ecology 2019). From May 2016 through May 2017 Ecology's Environmental Assessment Program (EAP) conducted a PCB atmospheric deposition study at three locations in the Spokane vicinity, including two locations within the city itself. Average wet deposition concentrations were measured as 1,366 and 3,718 pg/L at these two locations (Kaiser 2019).

Aerial deposition will be a continuous PCB source within the watershed for the foreseeable future and may be a major source of PCB loading to sediments and stormwater runoff. This may be the primary PCB loading source to Lake Coeur d'Alene, which has PCB concentrations above the WQC. Given the potential for aerial deposition of PCBs, the 1.3 pg/L WQC may not be achievable in natural waters. Further investigation into this PCB loading mechanism is warranted.

Response:

The EPA agrees that atmospheric deposition is a source of concern, and it is addressed in Section 3.1.5 of the TMDL document (Atmospheric PCB Deposition). See response to comment 7.3.7.

12.14 Comment:

The EPA ran four simplified scenarios through the TMDL mass balance spreadsheet. The first was a baseline scenario where inflows are set to the PCB WQC of 1.3 pg/L. The second scenario increased the influent concentration at the Washington-Idaho border to the Washington PCB WQC of 7 pg/L and reduced all other inflow concentrations to zero. The third started with the

baseline scenario, then reduced the groundwater influx along the entire length of the river by half (to 0.65 pg/L) and increased the influent concentration at the Washington-Idaho border to 1.8 pg/L. The fourth scenario reduced the Washington-Idaho border and groundwater influx concentrations to 0.65 pg/L (one-half the PCB WQC) and set the influent from the tributaries to 3.5 pg/L (one-half the Washington river WQC of 7.0), then set point sources and contaminated groundwater discharges to 7.0 pg/L. Only the second scenario did not result in attainment of the 1.3 pg/L PCB WQC at the mouth of the Spokane River.

The assimilative capacity analyses showed that the influent concentration at the Washington-Idaho border cannot be substantially higher than the 1.3 pg/L PCB WQC and meet the criterion in waters under the Tribe's jurisdiction. As such, the EPA assigned a boundary condition concentration of 1.3 pg/L to the river water influent at the Washington-Idaho border. Ecology is responsible for developing an implementation plan but has no jurisdiction over Idaho. Until Idaho can reduce the in-water concentration at the border to, or close to, the PCB WQC of 1.3 pg/L, the criterion in waters under the Tribe's jurisdiction will not be achievable.

Response:

The EPA agrees. This comment accurately restates EPA's assimilative capacity analysis. All allocations, along with reductions in border concentrations, are necessary to meet the applicable water quality standards. Regarding sources in Idaho, see response to comment 2.2.

12.15 Comment:

EPA recommends that implementing agencies include an Implementation Plan section in TMDL reports, detailing BMPs, remediation, and treatment activities to achieve the TMDL limits (EPA 2011). The Draft TMDL Report for PCBs does not include a plan, despite the WLAs and LAs being orders of magnitude below current loadings. To achieve the WQC, the PCB loadings must be reduced from point sources and non-point sources including upstream waters (Idaho), groundwater, stormwater, and sediment. Based on current conditions and treatment technologies, there is no feasible path forward to achieve the WQC without relying on monitored natural attenuation for a period of several decades. Even if the 1.3 pg/L target concentration could be achieved in river waters, the current CWA approved analytical method detection limits are several orders of magnitude above this concentration.

Boundary Conditions: The Draft TMDL report assigns a 1.3 pg/L concentration to incoming river water at the Washington/Idaho border prior to determining WLAs for point sources. However, influent water column concentrations of PCBs have been measured at 37 times the WQC. Even if all point source PCB loadings are reduced to zero, the river water column PCB concentration will remain well above the WQC unless PCBs are actively removed from upstream waters. This would require coordination with the Idaho Department of Environmental Quality, which is not

under the jurisdiction of Ecology. A reduction in Idaho water column concentrations would also introduce similar attainability concerns as discussed in this section.

Response:

The EPA agrees that meeting the water quality standards will be difficult and will require all parties undertaking significant effort to attain their 1.3 pg/L allocation. Regarding the development of a TMDL Implementation Plan, see responses to comments 16.4. Regarding the need to include an implementation plan in this TMDL, see response to comment 10.2. Regarding analytical methods, see response to comment 3.1.2. Regarding sources in Idaho, see comment 2.2.

12.16 Comment:

The Draft TMDL report assigns a 1.3 pg/L concentration to groundwater prior to determining WLAs for point sources. Groundwater concentrations of PCBs have also been measured at one to two orders of magnitude above WQC upgradient of the Kaiser site, indicating diffuse contamination sources (Kaiser 2019). Another study found 2,150 pg/L of PCBs in an artesian well in the Mission Reach of the Spokane River (LimnoTech 2022). Even if all point source PCB loadings were reduced to zero, the river water column PCB concentration would be well above the WQC unless PCBs are removed from affected groundwater.

Response:

The EPA has not conducted a detailed evaluation of groundwater, but the mass balance model assessment for August 2014 produced in an estimated PCB concentration of 21 pg/L in regional groundwater. Based on this estimate and other available information, the EPA agrees that improvements in groundwater quality are needed to meet the TMDL allocation for regional groundwater (1.3 pg/L) and for the watershed to attain the applicable water quality standard (1.3 pg/L).

12.17 Comment:

As discussed in the Draft TMDL, river sediments will serve as a PCB source if water column concentrations are reduced to 1.3 pg/L. The report assumes that water column concentrations will be reduced over a period of several years or decades, allowing time for upstream sediments to cover currently exposed sediment and limit PCB diffusion and dispersion. Core samples exhibit increasing PCB concentrations with depth, indicating that heavily contaminated soils have been buried by incoming sediment over a period of several decades (Mathieu, 2018).

However, any implementation effort for the proposed TMDL limits should recognize that substantial timeframes will be required to achieve water column WQC due solely to sediment

contributions. In addition, climatic changes to sediment scour should be considered and may require more active management of sediments in the Spokane River.

Response:

Comment noted. The EPA has revised the TMDL document to incorporate a load allocation for riverbed sediments. See response to comment 7.3.3. The EPA generally agrees that improvement in sediment quality is a long-term process.

12.18 Comment:

The Washington state Human Health Criteria (HHC) for PCBs in the Spokane River is 7 pg/L, which is below all current method detection limits for methods approved for compliance monitoring. Upon establishment of the HHC as the WQC, Kaiser and all PCB point sources within the study area applied for water quality variance, as this concentration cannot be achieved with available treatment technologies, given current background concentrations (Trueblood 2020).

Water treatment technologies for PCBs include membrane filtration and walnut shell filtration with ongoing advancements using an ultraviolet advance oxidation process (UV-AOP). All three processes have been proven to reduce PCB loading from point sources, but not to the degree required to achieve the WQC. For example, even at groundwater background concentrations of 200 pg/L, a removal efficiency of 99.4% would be required to achieve the Tribal WQC (Kaiser 2019). No other applicable technologies for PCB removal have been identified. Based on the information presented below, there are no feasible treatment options capable of reducing PCB concentrations to the WQC. Concerns with technology limitations were discussed in Applications for Water Quality Variance from each point source discharger in the study area for the state WQC of 7 pg/L.

Membrane Filtration: Advanced biological membrane filtration technologies have been implemented at all municipal wastewater treatment plants within the study area and a paper mill wastewater treatment plant. This technology removes PCBs by separating organic particulate matter with high PCB loading from the effluent stream and maintaining a high concentration of biomass (10,000 mg/L) in the process to help facilitate adsorption and physical separation. This provides ample residence time for incorporation of PCBs into biomass, which is removed and concentrated in the sludge. Congeners with high molecular weights are preferentially removed, as these have a greater affinity for suspended solids. Membrane filtration systems consistently remove 95 to 99% of PCB loading from the municipal treatment plants (Ecology 2023).

Membranes without biological pretreatment have not been shown to be effective for removal of low molecular weight congeners (Yao 2014, Rodenburg 2022). Biological treatment processes help to facilitate PCB removal due to high total suspended solids (TSS) containing organic carbon and long periods of solids retention time which promotes biosorption and biotransformation of slowly biodegradable organic substances such as PCBs that may then be removed with biomass on the membranes. Membrane filtration is only a feasible PCB removal technology for waters with high particulate matter and organic content, as the system relies on incorporation of PCBs into microbial biomass.

Walnut Shell Filtration: In accordance with Agreed Order No. 02WQER-3487, dated January 30, 2002, Kaiser prepared an Engineering Report with analysis of all known, available, and reasonable methods of prevention, control, and treatment (AKART) for PCBs at an industrial facility. Based on this analysis, the facility installed a Walnut Shell Filtration System (WSFS) upstream of the discharge location to remove PCBs. The process blends water with a low dose of castor oil (<10 ppm), which absorbs PCBs. The solution is then passed through a walnut shell media, which adsorbs the oil. Filter vessels are backwashed to remove the PCB-rich oil, which is treated and disposed offsite. The process reliably removes greater than 80% of PCBs from waters with high PCB concentrations (>5,000 pg/L) but is unable to remove greater than 99% of PCBs as would be required to meet the 1.3 pg/L limit.

The performance of the WSFS has improved with reductions in process water flow over twenty years of operation. An optimization study is underway as of May 2024 to further improve WSFS performance, but the technology is not capable of reducing process water PCB concentrations to 1.3 pg/L. An updated AKART analysis was performed in 2022 and determined that an advanced oxidation process can achieve higher PCB removal rates than WSFS (CDM 2021).

UV/AOP: Kaiser is currently starting up a groundwater pump-and-treat system to degrade PCBs by UV- AOP. The process combines ultraviolet (UV) irradiation with an oxidizer, typically hydrogen peroxide, to generate hydroxyl radicals. These radicals indiscriminately break down organic molecules, eventually yielding carbon dioxide and water. The technology is primarily useful for clean waters with low organic and solids content; organics will increase oxidant demand, UV attenuation, and result in fouling of the UV bulbs. The technology is likely incapable of achieving 1.3 pg/L concentrations in point source discharge water, given the high concentration of PCBs and competing oxidant demand in the process water.

Response:

The EPA appreciates Kaiser's recent efforts to reduce PCB discharges. These actions are important steps to improve water quality in the Spokane River. As part of TMDL implementation, Ecology will continue to administer the NPDES and Toxics Cleanup programs at

the Kaiser facility. See also response to comment 3.1.1. Regarding variances, see response to comment 16.10.

12.19 Comment:

The goal of the TMDL program is to establish a three-step path that will lead to reasonable assurance that attainment of the applicable WQS will be achieved (EPA 2023a). The first step is to develop TMDLs that will result in the attainment of the desired WQC. The second step is to develop an implementation plan using existing data, obtaining new data to fill data gaps, and identifying operational improvements and best management practices that will improve current WQC. The third step is to initiate the implementation plan, monitor WQC, and adapt and revise the plan as needed to reach attainment. The following section describes data gaps that should be filled and incorporated into an updated TMDL and recommendations for updating the TMDL considering the technical comments and attainability concerns addressed in this white paper.

Data Gaps: Data gaps based on the technical review comments provided above are summarized in this section. These data gaps should be filled and used to update the TMDL to reflect current conditions of the Spokane and Little Spokane Rivers and to evaluate the attainability of the TMDL, including an implementation plan.

- The largest data gap is represented by the small amount of PCB data available. River flow and PCB concentration data should be collected for all tributaries, point sources, and mainstem locations.

- River flow data is systematically monitored for water management purposes and should be used to derive the critical condition based on recent flow data and changes to the Spokane River system.

- Few sampling programs have employed synoptic data collection, while others have included only a fraction of the locations/times of interest, requiring the EPA to fill gaps in with the available information, for a given time period.

Response:

The EPA agrees that this TMDL project is not based on perfect data. The EPA supports an implementation process with river and source monitoring informed by the assessments to date, and several recommendations in the comment should be considered. At the same time, PCB monitoring requires resources and closing data gaps is a challenge. The SRTAC is working on a regional plan to implement the TMDL project and reduce PCBs. Regarding the lack of

technology for treatment, see responses to comments 3.1.1. Regarding implementation efforts, see response to comment 16.4.

12.19.1 Comment:

The toxicity of individual PCB congeners and bioaccumulation potential within fish tissue should be assessed, as TPCBs may not be the most appropriate metric for toxicity.

Criteria to determine impairment and AU designation should be clearly defined including equivalent fish tissue concentrations. AUs should be determined based on more recent fish tissue samples.

Response:

The EPA disagrees that the toxicity of individual congeners in fish tissue should be assessed to determine the appropriate measure of toxicity and that additional fish tissue samples are needed to determine impairment and AU designation. Regarding investigating toxicity of individual PCB congeners and bioaccumulation within fish tissue, as stated in the response to comment number 7.3.6, the applicable water quality criteria for PCBs for Washington and the Spokane Tribe are expressed as water column concentrations of total PCBs, and total PCBs are the sum of all congener, isomer, homolog or Aroclor analytes. As stated in Section 1.4 of the TMDL document (PCB Human Health Impacts), the EPA's Integrated Risk Information System (IRIS) uses a tiered approach for determining the cancer potency of PCB mixtures, and PCB human health water quality criteria use the high risk and persistence upper-bound cancer slope factor of 2.0 per (mg/kg)/day, because the PCB exposure occurs through the food chain and because of potential early life exposure, including to nursing infants (EPA 1996). Further assessment of the toxicity and bioaccumulation potential of individual PCB congeners is beyond the scope of the TMDL.

Section 1.3.4 of the TMDL document (PCB-Impaired Assessment Units) describes the basis for Ecology's PCB listings in the Spokane and Little Spokane Rivers in the 2014-2018 303(d) Integrated Report. Ecology applied a valid method to list these AUs, which the EPA approved. Recent water quality data confirm these impairments. This TMDL addresses all AUs throughout the Spokane and Little Spokane Rivers. Having new information on the toxicity of individual PCB congeners in fish tissue or new fish tissue data would not change the decision to list these waters nor the TMDL allocations. For more information on the fish tissue listing, see response to comment 2.13.

12.19.2 Comment:

The potential for atmospheric deposition and PCB loss by volatilization and continued water column pollution from contaminated sediments in the study area including from stormwater should be reviewed and incorporated into the model. In nearly all samples throughout the watershed, PCBs are above 1.3 pg/L in water. Additionally, regional PCBs are above 1.3 pg/L in groundwater.

Response:

Regarding model assumptions about atmospheric deposition, volatilization and contaminated sediments, see response to comment 7.3.

12.19.3 Comment:

An interlaboratory study on Method 1668C should be completed to resolve concerns with variability and inaccuracy of measurements at low PCB concentrations (<1 ng/L). This is the only EPA method capable of detecting PCBs at concentrations below 100,000 pg/L and is not listed as an approved method for CWA compliance reporting in 40 CFR part 136 and should be considered a screening level tool in its current form.

Response:

The EPA has completed interlaboratory validation on Method 1668. As stated in Section 21 of Method 1668C:

> "In 2003-2004, EPA conducted an interlaboratory method validation study of Method 1668A (Reference 21), subjected the study to a peer review, and subsequently published interlaboratory performance data in Method 1668B.
>
> After release of Method 1668B, it was reported to EPA that some of the QC acceptance criteria in Method 1668B did not allow excursions above 100 percent. As a result, the QC acceptance criteria were re-developed using data from the interlaboratory study and data from AXYS Analytical and TestAmerica-Knoxville, Tennessee. The revised QC acceptance criteria were published in addendum to the Interlaboratory Study Report (Reference 22).
>
> Subsequent to development of the revised QC acceptance criteria, AXYS Analytical, TestAmerica-Knoxville, and Battelle-Columbus provided method detection limit (MDL) data to EPA. These data were combined to produced pooled MDLs and MLs (Reference 23). Method 1668B was revised to Method 1668C to incorporate the revised QC acceptance criteria and revised MDLs and MLs."

Performance data for method 1668C including method detection limits (MDLs) and minimum levels of quantitation (MLs) are listed in Section 23 of Method 1668C. Published MLs for PCB congeners in water range from 20 – 200 pg/L, although actual MDLs and MLs are specific to a given analysis. Because published MLs for Method 1668C are no greater than 200 pg/L per congener, the EPA disagrees that Method 1668C cannot accurately quantify PCBs in water at concentrations below 1 ng/L. The EPA has no plans to repeat interlaboratory validation studies for Method 1668C.

12.19.4 Comment:

Pilot testing is currently being performed by Kaiser Aluminum to evaluate the performance of a UV-AOP system in degrading PCBs in industrial process water. The TMDL should investigate UV-AOP processes with the Implementation Plan, as this technology may have the greatest potential for PCB removal given previous AKART analysis and is the only method capable of PCB destruction; all other current technologies are separation and concentration processes.

Response:

The EPA has added information on Kaiser's pilot project and implementation of UV-AOP to treat contaminated groundwater to Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document. The EPA appreciates the information and encourages Kaiser to raise this comment at the SRTAC for the regional TMDL implementation plan.

12.20 Comment:

The Draft TMDL does not include an implementation plan, instead stating that Ecology will implement nonpoint source and point source controls to achieve the WQC. The Draft TMDL's assumed boundary condition of 1.3 pg/L for each identified source is not achievable in the short-term, especially given that river concentrations at the Washington-Idaho border and groundwater sources from areas outside of the identified groundwater contaminated sites far exceed this WQC. Ecology has no control over state programs or WQC set by Idaho Department of Environmental Quality.

The following are recommendations to approach the TMDL:

Response:

The EPA acknowledges that the TMDL project does not include an implementation plan. See response to comment 10.2. The EPA also agrees that Ecology has no control over state programs or water quality standards set by Idaho, though Idaho's narrative WQS require maintenance of a level of water quality that provides for the attainment of downstream WQS. See response to comment 2.2 for more information on Idaho's responsibilities.

12.20.1 Comment:

EPA should consider revising the PCB model presented in the Draft TMDL to include the following: Consider using Hydrological Simulation Program – Fortran, similar to the approach that was used for the James River TMDL (EPA 2023);

Response:

The EPA notes this comment, but the commenter provides no rationale or benefits for using the HSPF watershed model for this TMDL project. Development of an HSPF model is not feasible on the court-ordered schedule of this TMDL project.

12.20.2 Comment:

EPA should consider revising the PCB model presented in the Draft TMDL to include the following:

b) Groundwater sources including non-point sources;

c) Stormwater sources including BMPs and non-point source contributions;

d) Aerial deposition;

e) Sediment interaction and management; and

f) Fish tissue and toxicity of PCB homologs.

Response:

Each of the listed source factors is included in the TMDL project in the following sections: regional groundwater (see TMDL Section 5.4.2), stormwater (see TMDL Sections 5.3.2 and 5.3.3), riverbed sediment (see TMDL Section 5.4.2), and atmospheric deposition (see TMDL Section 5.4.4), and. The nature of the sources and allocation considerations for each of these source categories is discussed in the TMDL document.

Regarding fish tissue and PCB homologs, see response to comment 12.19.

12.20.3 Comment

Critical conditions for an individual TMDL typically depend on applicable water quality standards, characteristics of the observed impairments, source type and behavior, pollutant, and waterbody type. The EPA used a 30-year record period (1991-2021) to compute the harmonic mean flow for the TMDL project and assumed that working with the long-term river flow information and average annual PCB concentrations was more critical than assessing seasonal variability of those parameters. However, seasonal variation of the river flow would likely be considered a critical condition by the CWA and should be evaluated, especially considering the impact of seasonal flow on the gaining/losing reaches of the river system.

Response:

The EPA disagrees that seasonal variation is a critical condition for this TMDL project. For further response, see response to comment 16.2.

12.20.4 Comment:

The TMDL model should be validated against recent flow and PCB concentration data and a sensitivity analysis performed. Model calibration and validation data quality objectives should be presented with the model report.

Response:

See response to comment 12.9.

12.20.5 Comment:

The TMDL should include a map showing portions of the river which are subject to sediment scouring and deposition.

Response:

The EPA disagrees that a map showing portions of the river subject to scouring and deposition would be appropriate. The commenter does not provide a citation for such a map if it exists. It is not necessary to include this type of map in the TMDL document. Ecology may produce and utilize additional information during TMDL implementation to identify areas of concern for sediments.

12.20.6 Comment:

Implementability concerns have been expressed by Kaiser and other point source dischargers previously (Application for Variance). Proposed WLAs cannot be achieved by point source dischargers with currently available technologies.

Response:

The EPA agrees that implementation on near-term timelines will be difficult. See response to comment 3.1.1. Regarding variances, see response to comment 16.10.

12.20.7 Comment:

Consider and assess monitored natural attenuation as an implementation approach, as PCB concentrations in the river water column and sediments have decreased over the past several decades. PCB loading from non-industrial sources including stormwater, Lake Coeur d'Alene, and sections of groundwater make achievement of the WQS impossible as shown in the TMDL model.

Response:

The EPA disagrees that the TMDL document must evaluate natural attenuation as an implementation approach because specific implementation activities are up to the responsible entities identified in the Ecology implementation plan. Because of the persistence of PCBs in the environment, source control is the primary mechanism to reduce PCBs rather than "natural attenuation". Source control measures can lead to cleaner sediments entering the river, with natural processes driving the replacement and burial of existing bedded sediments. Regarding achievability, the mass balance model shows that source reductions are needed on all fronts but does not speak to the achievability of the source reductions.

12.20.8 Comment:

In conclusion, the PCB concentrations stipulated in the WLA is greatly exceeded by existing conditions and is not technically achievable or measurable. Several decades will likely be required for PCB concentrations in affected sediment, groundwater, stormwater, tributaries, and Lake Coeur d'Alene to approach the WQS. Until that time, a TMDL should be adopted which accounts for existing background water column concentrations.

Response:

The EPA disagrees that it should or can legally create a TMDL project that fails to attain and maintain all applicable WQS, including narrative downstream water quality standards. Regarding feasibility and analytical methods for PCB measurement, see response to comments 3.1.1 and 3.1.2. TMDLs must be designed to attain and maintain applicable water quality standards, but the EPA notes that there are implementation options available for sources that are unable to immediately achieve TMDL allocations. The EPA is not certain what the commenter means by "background water column concentrations." Regarding the concept of natural background levels of PCBs, see response to comment 2.17.

13 Northwest Pulp and Paper Association

13.1 Comment:

NWPPA is a 69-year-old regional trade association representing pulp and paper mills in Washington, Oregon and Idaho. In Washington, we represent Inland Empire Paper Company (IEP), as well as several other mills, all of which hold NPDES permits issued by the Washington Department of Ecology. NWPPA and its members are very concerned about the proposed PCBs TMDL on the Spokane and Little Spokane Rivers, and the precedent that it will set for other water bodies across the state.

NWPPA wholly supports the comments submitted by IEP, dated July 15, 2024. We also support and echo the technical concerns expressed in the memo submitted by the National Council for Air and Stream Improvement (NCASI).

Response:

Comment noted. See responses to comments in comment sections 8 and 10.

14 Spokane County

14.1 Comment:

Spokane County appreciates the opportunity to provide the following comments to EPA's Spokane and Little Spokane Rivers PCB TMDL Public Comment Draft, dated May 15, 2024. Spokane County understands the EPA has prepared this Draft TMDL, and that the Washington Department of Ecology has responsibility to prepare the eventual Implementation Plan.

Comment #1: The Wasteload Allocations (WLA) cannot be met with contemporary technology. Spokane County Public Works is committed to protecting and enhancing the water resources in our region. Our membrane ultrafiltration water reclamation facility removes contaminants to very low levels. Even with this level of advanced wastewater treatment, the TMDL recognizes the WLA based on the Water Quality Standard (WQS) of 1.3 pg/L cannot be met.

In the Spokane region, expansion and improvements to sanitary sewer collection and treatment led to dramatic increases in water quality in the Spokane River and the Spokane Valley-Rathdrum Prairie Aquifer. This TMDL will not remove PCBs from our lakes, river, and groundwater, and may become a hinderance to connecting existing and new businesses and homes to sanitary sewers.

Response:

Regarding the attainability of WLAs with current technologies, see response to comment 3.1.1. Regarding the improvements that Spokane County Public Works, the EPA notes the comment and has added this information in Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document.

14.2 Comment:

Lack of Available Technology will require a variance, UAA, or other compliance pathway: Please include a statement that the County, as an NPDES permit holder, will need a variance or other compliance pathway because the wasteload allocation in the TMDL cannot be met with available treatment technology.

In April 2019, the County applied for a discharger-specific water quality variance for total PCBs in the Spokane River under the Washington state WQS of 7.0 pg/L. However, the Washington

State Department of Ecology (Ecology) did not move forward with the state rulemaking process for the variance at that time. As noted on page 49 of the TMDL, there is no current technology or best management practices that can meet the proposed TMDL PCB wasteload allocations. Spokane County currently uses ultrafiltration membranes and removes 99% of influent PCBs before discharging to the Spokane River, but still cannot meet the WLA concentration of 1.3 pg/L. Because the level of treatment currently available cannot meet the County's wasteload allocation, the County will require a variance or other compliance pathway. We appreciate EPA's support in implementing a variance or alternative compliance pathway, if it becomes necessary.

Response:

NPDES compliance schedules and/or water quality standards variances are outside the scope of this TMDL project and any variance determination would be made by the appropriate authority, Ecology. For further response, see response to comment 16.10.

14.3 Comment:

Proposed WLAs cannot be measured by existing analytical methods. Existing analytical methods for PCB analysis cannot accurately measure down to the WLA concentration of 1.3 pg/L. The EPA recognizes this discrepancy and has provided a detailed inventory and capabilities of analytical methods in Appendix D of the Draft TMDL. For example, Method 608, which is approved for use in NPDES permits, has a Method Detection Limit (MDL) of 65,000 pg/Land Method 1668, which detects PCB on a per congener basis, has MDLs for each congener ranging from 7 pg/L to 77 pg/L. In addition, the low-level, more sensitive methods have challenges with blank contamination and correction. The County's data from over a decade of testing shows that method/lab, equipment, and travel blanks all have PCB concentrations over the WLA concentration.

Response:

The EPA agrees that existing analytical methods for PCBs cannot accurately measure PCBs at a concentration of 1.3 pg/L. However, as stated in the response to comment 3.1.1, TMDLs must be established at levels necessary to attain and maintain applicable water quality standards with seasonal variations and a margin of safety (40 CFR 130.7(c)(1)). As such, the sensitivity of existing analytical methods was not used as a factor in establishing load or wasteload allocations in the TMDL project. As explained in the response to comment 16.9, federal NPDES program guidance addresses situations in which water quality-based effluent limits (including those based on TMDL wasteload allocations) are below analytical detection or quantitation limits.

14.4 Comment:

Wasteload Allocations based on PCB concentration versus a load may preclude some PCB reduction measures. A WLA concentration rather than a load precludes some measures that might reduce PCB load but might not affect concentration at the point of discharge (e.g. control of discharge flow).

Response:

The TMDL project expresses the allocations as both a daily load and water column concentration. In some TMDLs, it may be appropriate to express and implement wasteload allocations as loads only, because higher concentrations in the effluent can be diluted by other clean waters in the watershed, and the resulting combination of conditions can achieve a TMDL project's goal of attaining and maintaining applicable water quality criteria. In this TMDL project, under the allocated condition, there is no dilution afforded by inflows to the Spokane River below the water quality criteria, which are expressed as water column concentrations of total PCBs, so any discharge above the water quality criteria concentrations will contribute to exceedances, even if all other sources are achieving allocations.

14.5 Comment:

Lack of distributed Wasteload Allocations in Idaho.

The County understands that the EPA was not mandated to address the Spokane River under Idaho's jurisdiction in the Order issued by the U.S. District Court in Sierra Club, et al. v. McLerran, No. ll-CV- 1759-BJR (March 16, 2015). However, the basis for this TMDL is a boundary condition concentration of 1.3 pg/L at the state line that cannot be met when the Idaho state WQS for PCBs is 190 pg/L. This disparity at the state line imposes a challenge that the EPA has recognized during public outreach but failed to adequately account for in the TMDL. The EPA should explicitly recognize that Idaho Department of Environmental Quality must consider these downstream limits when developing state WQS per 40 CFR 131.10(b) and in their Clean Water Act permitting actions in order to meet this TMDL's boundary condition at the state line.

Response:

The EPA disagrees that the TMDL does not adequately account for conditions at the state line. See responses to comments 2.2 and 7.6.

14.6 Comment:

What is the Fish Tissue PCB concentration that is necessary to comply with water quality standards? The TMDL states "Ecology based these impairment determinations on fish tissue data with elevated PCB concentrations using its listing methodology from Policy 1-11, that provides a translator from PCB WQC in the water column to PCBs in fish tissue" (page 20). All

Category 5 PCB listings in the Spokane and Little Spokane Rivers are based on fish tissues exceedances.

What is the fish tissue PCB concentration that is required for a Category 1 (i.e., non- impaired) listing? Please provide in the TMDL the fish tissue PCB concentration required for compliance with the State of Washington and Spokane Tribal standards.

Response:

The EPA disagrees with inclusion of fish tissue PCB concentrations in the TMDL project for the following reasons. First, the applicable water quality standard is expressed as a water column concentration, not a fish tissue concentration, and available monitoring information shows that the water column exceeds the water quality standard. Additionally, while fish tissue monitoring is useful for fish consumption advisories and has been the basis for 303d listing in the past, future listings will also consider water column monitoring with improved analytical methods. Therefore, it would be inappropriate to imply that fish tissue conditions will be determinative in future listings and/or assessments of TMDL implementation. The requirements for moving PCB-impaired AUs addressed by this TMDL from Clean Water Act 303(d) listing Category 5 or Category 4a to Category 1 will be based on water column monitoring data that shows PCB concentrations at or below the Spokane Tribe's PCB human health water quality criterion of 1.3 pg/L.

The calculation of human health criteria takes into account fish tissue exposure and other exposures discussed in the WQS Appendix. In short, the calculation uses inputs for body weight, drinking water intake, fish consumption, bioaccumulation/bioconcentration factors, and a relative source contribution (RSC) factor. The RSC accounts for non-water and non-fish/shellfish consumption sources of exposure, including but not limited to dermal exposure, consumption of foods other than fish/shellfish, inhalation from ambient sources, etc.

14.7 Comment:

WLAs do not reflect preferential removal of more toxic PCBs such as those shown to bioaccumulate in fish tissue. If the TMDL is intended to address impairment determined through fish tissue concentrations of PCBs, then WLA should preferentially address PCB congeners that are known to bioaccumulate in fish tissue. Various studies conducted by the former Spokane River Regional Toxics Task Force (SRRTTF) in partnership with Dr. Lisa Rodenburg as well as Ecology have demonstrated that fish tissue tends towards higher molecular weight PCB congeners whereas wastewater effluent and the Spokane River water column tend toward lower molecular weight PCB congeners. Wastewater treatment with membrane technology is already highly effective in removing the PCB congeners of high

concentration in fish tissue. Regulatory WLA based on concentration of total PCBs may not effectively improve fish tissue concentrations.

Response:

The EPA disagrees that distinguishing between congeners is appropriate in this TMDL project. The EPA also disagrees that the TMDL project is intended to address impairment determined through fish tissue PCB concentrations. The applicable water quality standard does not differentiate between PCB congeners so the TMDL project does not either. See responses to comments 3.8 and 4.7. In summary, the applicable water quality criteria for PCBs for Washington and the Spokane Tribe are expressed as water column concentrations of total PCBs, and total PCBs are the sum of all congener, isomer, homolog or Aroclor analytes. Per 40 CFR 130.7(c)(1), TMDLs must be written to meet water quality standards. The wasteload allocations expressed as total PCBs will address the congeners that may more readily bioaccumulate in fish tissue.

14.8 Comment:

The TMDL model is overly simplistic and does not account for the complexity of the Spokane River system including attenuation, seasonal variability, groundwater-surface water interactions, all sources of PCBs (e.g., the Mission Reach at RM 75.9).

Response:

The EPA disagrees that the TMDL model is overly simplistic. For further response, see responses to comments 7.3 (modeling) and 16.2 (seasonal variability).

14.9 Comment:

Why was Scenario 1 selected over the other examined scenarios that also led to 1.3 pg/L? The TMDL discusses four scenarios (pages 46 and 47) that were examined with the TMDL mass balance spreadsheet. While not necessarily disagreeing with the scenario selection, Spokane County requests clarification on why Scenario 1 was chosen over the others that achieved the WQS of 1.3 pg/L downstream.

Response:

The EPA addressed why it chose Scenario 1 in the TMDL document. Section 4.2.3 of the TMDL document provides information about the alternatives, and Section 5.1 of the TMDL document (Assimilative Capacity Analysis) describes why the EPA chose Scenario 1. In short, Scenarios 1 and 4 meet the downstream water quality standards, making Scenarios 2 and 3 ineligible as options since TMDLs must meet water quality standards (40 CFR 130.7(c)(1)). Scenario 4 relies on a reduction in PCBs in regional groundwater and tributaries below 1.3 pg/L. This would create a situation where some point sources could receive wasteload allocations higher than

the water quality standard, but increase uncertainty that the groundwater and tributaries could reduce their PCB loads to the assigned levels. As stated in the TMDL document, Scenario 1 is scientifically defensible, meets standards, and is the most equitable and consistent option.

14.10 Comment:

EPA should support improved source control under TSCA. In the TMDL, EPA recommends that Ecology focus should include "strengthened source controls, especially on inadvertent PCB production" (page 61). Spokane County agrees that source controls are an important aspect of improving water quality and that federal leadership is needed to address inadvertent PCB production at a meaningful scale. However, EPA rejected Ecology's 2024 PCB Toxic Substances Control Act (TSCA) Petition, which specifically asked EPA to take action to reduce the inadvertent generation of PCBs in consumer products. We are confounded by the EPA's contradiction in position because EPA is the regulatory agency responsible for TSCA and is, therefore, in the best position to reduce these sources of PCBs, which would accomplish far more than the WLAs proposed in this TMDL. By rejecting Ecology's TSCA petition, EPA has ensured that, regardless of the TMDL, PCBs will continue to reach the Spokane River through consumer products that our citizens use every day. We are also confused by EPA statements in its denial of the TSCA petition that PCBs inadvertently generated at levels that are orders of magnitude higher than the County's WLA do not present an unreasonable risk of injury to human health or the environment. EPA cannot rationally take the position that it is acceptable to have inadvertently generated PCBs at 50 ppm because they pose no threat to human health or the environment and, at the same time, contend that the WLA must be set at 1.3 pg/L to protect human health or the environment. We encourage EPA to include this information in the TMDL and to reconsider its position with regard to Ecology's TSCA Petition. At a minimum, EPA should impose on itself an obligation to strengthen source controls on the inadvertent generation of PCBs in consumer products because EPA is the regulatory agency with primary responsibility for TSCA.

Response:

The EPA notes this comment but new actions under TSCA are beyond the scope of this TMDL project. As stated in the response to comment 7.2.3, TSCA allowances for inadvertent PCBs are established under a separate Federal statute and do not determine allocations required under the CWA. Although EPA agrees that both inadvertent and legacy (Aroclor) PCBs contribute to the PCB impairments in the Spokane and Little Spokane Rivers, positive matrix factorization (PMF) analysis shows that about 90% of the PCBs in the Spokane River water column are from Aroclors (Rodenburg 2022). For more information on TSCA, see responses to comments 4.3, 5.2, and 14.10.

15 Spokane Riverkeeper

15.1 Comment:

Spokane Riverkeeper and the co-signers hereto have appreciated the opportunity to participate in the PCB TMDL process and, specifically provide substantive input and comments on the draft PCB TMDL for the Spokane River and Little Spokane River and throughout the development process. We know this is a complex process and appreciate your efforts to incorporate feedback from a wide variety of environmental stakeholders and other interested parties on the critically important issues of achieving PCB load reductions, attaining PCB water quality standards (WQS), and restoring impaired beneficial uses for the Spokane River watershed. It is imperative to use the most protective standards available to achieve these reductions.

We appreciate EPA's efforts to complete the draft TMDL in compliance with the schedule set forth in the Consent Decree. In addition to completing the draft TMDLs in compliance with this schedule, we believe that EPA, together with the TMDL advisory group and stakeholders, must complete a TMDL that can meaningfully be implemented to promote PCB load reductions and achieve water quality objectives over the coming years. In order to meaningfully fulfill its obligations under the consent decree, the EPA must fulfill its duty under Section 303(d) of the Clean Water Act to issue a PCB TMDL for the impaired segments of the Spokane River, the Little Spokane River, and Lake Spokane (Long Lake) that addresses all distinguishable sources of PCB pollution.

We appreciate your effort to attempt to reach the Spokane Tribe's standard. It is imperative to use the highest standards available and ensure we are working towards meeting all downstream standards. Using this standard is the first step necessary to respect downstream water quality standards and tribal authority of their waters.

Response:

Comment noted.

15.2 Comment:

Technical Approach and Input Data Comments: Because a TMDL is not enforceable in and of itself under the Clean Water Act (CWA), numerical WQS, as well as other numerical benchmarks and guidelines, including, fish tissue guidelines, sediment quality standards, groundwater standards, and other guidelines become all the more significant. EPA has a nondiscretionary duty under Section 303(d) of the Clean Water Act to approve or disapprove and, upon disapproval, issue Total Maximum Daily Loads ("TMDLs") for polychlorinated biphenyls ("PCBs") for certain segments of the Spokane River, the Little Spokane River, and Lake Spokane (Long Lake) in Washington State, which are all listed as impaired for PCBs.

Response:

The EPA agrees with the commenter's statements on the EPA's nondiscretionary duties to approve or disapprove, and upon disapproval, issue TMDLs for water quality limited segments. TMDLs must be established at levels necessary to attain and maintain applicable water quality standards with seasonal variations and a margin of safety (Section 303(d)(1)(C); 40 CFR 130.7(c)(1)).

15.3 Comment:

The 303(d) water quality impairment listings for the watershed, which provide the legal basis for requiring a TMDL, are based on elevated concentrations of PCBs in fish tissue, which under CWA constitutes an impaired beneficial use requiring reinstatement and restoration. It is thus important to stay focused on improving fish tissue quality for a wide variety of fishers, including Tribal subsistence fishers.

Response:

The EPA agrees that the listings in the Spokane River and little Spokane River were based on fish tissue concentrations. The TMDL project is written to meet the applicable water quality standards for PCBs, which is in terms of total PCBs in the water column. See response to comment 4.7 on how the applicable water quality standards for PCBs protects human consumption of fish.

15.4 Comment:

The draft PCB TMDLs (EPA 2024) were developed based exclusively on water column data needed to support a steady-state mass balance model, calculate PCB load reductions and load/wasteload allocations (WLA/LA). The data used for the model were very limited, only 2010 or more recently, from data that have been input into Ecology's Environmental Information Management (EIM) database, along with other limitations and restrictions. We reviewed Appendix B, which shows the limited water quality data used, which were generally from recent SRRTTF monitoring and discharger-supported data sources. The model requires numerous simplifying assumptions that do not account for key environmental characteristics of PCBs such as bioaccumulation, sediment flux, degradation, and the varying characteristics for each of the 209 PCB congeners. Congeners behave differently from each other, and have variable toxicity, solubility, bioaccumulation, degradation dynamics, etc. Most PCB congeners are not very soluble but rather sorb preferentially to sediment, so relying solely on water column concentrations for the TMDL modeling approach adds significant uncertainty. PCB data should therefore be represented throughout different media compartments, including bedded sediment and fish tissue.

[Regarding sediments, w]e appreciate the incorporation of tissue and sediment sampling into the draft TMDL, however we believe that this is still insufficient given the data available. It is important to have a clean up plan extensive enough to address the known contamination. EPA recognized during the public meeting in May that there is a need for sustained long term dedication and that there is no simple solution.

Although the watershed is relatively poor in fine sediment deposition, there are multiple dams in the system which are effective depositional sites and serve as "sediment traps". Sediment flux of PCBs is a major issue, as also confirmed by SRRTTF. We recommend incorporating the abundant sediment data in the water collected over the past approximately 20 years, along with SPMD and biofilm data to identify further "hot spots" in sediment. Once hotspots are identified, we suggest that removal actions be conducted where appropriate, which will help to diminish the overall load of legacy PCBs currently residing in the system. This would add a proactive aspect to the approach of excluding legacy sediment data and simply relying on passive "natural attenuation" of PCBs to occur over years and decades.

Based on synoptic monitoring conducted by multiple investigators, it is clear that PCB concentrations increase markedly between Mirabeau Point (mean PCB concentration in water of 37 pg/L) and Trent Bridge (mean PCB concentration of 133 pg/L), and we recommend incorporating sediment SPMD and fish tissue data downstream of that area. We also suggest that the final TMDL be revised to assign additional allocations for bedded sediments, as has been done for other PCB TMDLs (see discission below).

Hobbs et al. (2019) of Ecology's Environmental Assessment program has shown that use of a semi-permeable monitoring device (SPMD) such as biofilm is a valuable and important tool for a stable, non-polar, bioaccumulative contaminant such as PCBs. Biofilm can be used to do congener matching, and has been done in fish tissue data also; the fingerprint for specific congeners from specific sources can be passed along to both fish and biofilm. Serdar (2011) used a Spokane River PCB source assessment to provide target PCB loads in five specific locations throughout the watershed. It was suggested that validated bioaccumulation/food web models such as those recommended by Arnot and Gobas (2004) to be used to predict PCB tissue concentrations, a valuable tool in PCB TMDL development. We point out that PCBs are very chemically stable, bioaccumulative, and unlike most other contaminants, conducive to food web and tissue risk assessment and modeling to achieve long-term reductions.

Response:

The EPA agrees that there are limitations and uncertainties in the data and modeling. Regarding model assumptions about key environmental characteristics, see response to comment 7.3. Regarding sediments, the EPA has revised the TMDL document to incorporate a load allocation

for riverbed sediments. See response to comment 7.3.3 . The EPA disagrees that additional model representation is needed for bedded sediment and fish tissue. See response to comment 7.3.6.

The EPA agrees that past data collection has shown increased PCB concentrations between Mirabeau Point and Trent Bridge. This is the area impacted by the Kaiser contaminated groundwater plume. This source is assigned an allocation in the TMDL project.

The EPA supports the varied sampling and analytical methods described in this comment and agrees that these are useful tools in identifying specific sources. In TMDL implementation, the EPA recommends additional site-specific sampling and/or analysis to estimate sediment fluxes and prioritize sediment remediation in the concert with other source control actions. Directing specific removal actions is beyond the scope of this TMDL project.

15.5 Comment:

Modeling approach. The one-dimensional box model used for the draft PCB TMDLs is useful because it allows for creation of a mass balance-based "budget" for PCBs entering and leaving the watershed, but it imposes serious limitations on the voluminous environmental data collected in the watershed, much of it by Ecology's Environmental Assessment Program over the past 20 years (Serdar et al. 2011; Johnson et al. 2010; Seiders et al. 2018). Numerous other similar PCB TMDLs (e.g. Fox River, San Francisco Bay, Anacostia River, and Delaware River, as examples) involved creating of comprehensive site-specific, food web-based models, which account for the flux of sediments from depositional sediments, and use SPMDs such as biofilm to both address bioaccumulation dynamics and also to account for individual PCB congeners.

We have reviewed several other approved TMDLs for PCBs from elsewhere in the country to provide a context on technical assumptions, overall approach, uncertainty and margin of safety considerations, implementability, data used to support the action, and other key factors. For example, an approved PCB TMDL for the Delaware River watershed (Fikslin 2003) used site-specific fish tissue data and incorporated PCB congener/homolog distribution rather than using the more generalized metric of total PCBs, which allows focus on more toxic PCB congener groups which are of different toxicity, mobility, solubility, and therefore bioaccumulation profile. They incorporated the use of a "sediment reservoir", which acknowledges the importance of legacy PCBs as reservoirs of ongoing contamination, toxicity, and potential bioaccumulation.

The Delaware River PCB TMDL model was based on an EPA-supported model called DYNHYD5/TOXI5, which incorporated both water column and sediments. It also incorporated organic carbon sorbent dynamics and can accommodate different PCB congeners. They

concluded that water column PCBs are strongly influenced by loadings and sediments. The model also allowed for identifying and quantifying PCB sources using congener-specific analytical methods, which helped to further reduce uncertainty and allows permittees to track effectiveness of PCB load reduction and minimization strategies. They added that reductions in PCB loadings would not immediately result in reduced water column concentrations or tissue concentrations, because of continuing flux of PCBs from sediments to the water column.

The Fox River PCB TMDL in Wisconsin required years to attain ecological and human health risk reduction; sediments were capped because they were an acknowledged continuing source of PCBs within the watershed. For the San Francisco Bay PCB TMDL, PCBs are also acknowledged as ongoing PCB sources. Similarly, the Anacostia River PCB TMDL (EPA 2007) used a linked hydrodynamic and PCB fate and transport model calibrated for existing site-specific data over the course of five years. The site-specific model was run with a series of loading scenarios to identify the impact of individual sources.

Regarding the technical assumptions related to “permanent burial” of PCBs in sediments, it is well known that different congeners of PCBs weather and degrade differently partly as a function of degree of chlorination, and that lower-chlorinated congeners (e.g. PCB-11) are quite soluble and while they are less persistent, they are more toxic. For example, Davis (2004) showed that half-lives of congeners ranged from 4 years for PCB 18 (lower chlorinated, less persistent) to 30 years for PCB 194 (also see Greenfield and Allen (2013). Therefore, we suggest that different congeners with their variable environmental characteristics be considered when integrating PCB contributions to overall loadings via the sediment pathway.

Response:

The EPA disagrees that approaches taken in other PCB TMDL projects are better than the site-specific approach the EPA has employed for this TMDL project. Water quality model approaches in TMDL projects vary depending on available data, scope and size of the TMDLs, physical, chemical and biological processes at play in the system. In this TMDL project, the EPA used a mass balance model taking these factors into account. Section 4 of the TMDL document (TMDL Technical Approach) explains the basis for selecting this approach as a scientifically defensible and reasonably accurate to calculate TMDL allocations. Regarding sediments, the EPA has revised the TMDL document to incorporate a load allocation for riverbed sediments. See response to comment 7.3.3 for more information on this load allocation and considerations related to sediment flux and resuspension. Regarding PCB congeners and total PCBs, see response to comment 4.7.

15.6 Comment:

Analytical methods. Selecting the most appropriate analytical method is critically important, because the older, Aroclor-based methods (e.g. EPA Method 8082) use reporting and method detection limits that are normally so high (i.e. unrestrictive) that it cannot be determined whether toxicity-based protection of aquatic life or human health can be achieved. They are not sensitive enough to determine whether toxic levels of PCBs are present in the watershed. More updated, congener-based methods with much lower reporting limits (e.g. EPA Method 1668C), and which has been approved for about 125 congeners, would be better for this purpose where practicable, including for analysis of water, sediments, and tissue.

The published method detection limit for EPA Method 608.3 (Aroclors only) is 65,000 pg/L, orders of magnitude above WQS target value of 1.3 pg/L, and is commonly used. Method 1628 is a newer, congener-specific analytical method, not yet approved under 40 CFR 136, and has not yet been used in the Spokane River watershed, but we suggest using this method when it becomes available and practical. In general, these newer, more sensitive methods are not always required as part of NPDES monitoring requirements and it is therefore difficult to determine compliance with these lower limits. We ask that Ecology and/or EPA require the more sensitive, congener-specific analytical methods when practicable.

Response:

The EPA disagrees that method 608.3 is inappropriate. As the commenter notes, several test methods for PCB congeners and total PCBs exist. Appendix D of the TMDL document (Water Quality Monitoring Analytical PCB Methods) describes these methods. However, EPA Method 608.3 is currently the only EPA-approved method. 40 CFR 122.41(j)(4) and 122.44(i) require that permittees use test procedures specified in Part 136. If the EPA approves other methods for PCBs in Part 136, permit writers will need to consider requiring those methods.

15.7 Comment:

DMR requirements. Discharge monitoring reports (DMRs) should be emphasized to assure that PCB load reductions are achieved over the coming years. The types of analytical methods recommended or required as part of NPDES monitoring requirements is especially important with PCBs, because the analytical methods traditionally required are wholly inadequate and insufficient for assuring PCB load reductions in both point and nonpoint discharges, as discussed above. As part of monitoring requirements, we recommend that monitoring:

- Be conducted during periodic (wet- and dry- conditions, spatially representative receiving water monitoring of water column, sediment and biological tissue, specifically targeting key sources both upriver and downriver of PCB discharge the waterway;

- For fish tissue, we recommend that greater emphasis be placed on older, bottom-feeding fish that are much more likely to bioaccumulate and/or biomagnify PCB residues over time, thus exposing human consumers and fish predators to PCB contamination and potential toxicity

- We ask that compositing of tissue be limited where appropriate, as use of individual (when adequate sample size is available), preserves valuable information concerning where specific problem areas and specific contaminated fish lie.

- Incorporate SPMD/biofilm data into PCB monitoring requirements, as this also provides valuable information concerning PCB locations on contamination and bioaccumulation.

Response:

The EPA agrees that monitoring will be important in the future to track progress towards implementing the TMDL project and reducing PCBs in the Spokane and Little Spokane Rivers. DMRs and monitoring conditions are requirements in NPDES permits and outside the scope of the TMDL project. However, the public notice for draft NPDES permits provide an opportunity for input on proposed permit conditions.

15.8 Comment:

Harmonic flows. The use of "harmonic flows" is not representative of most Spokane River flows or future flow trends. The selected harmonic flows are higher than flows we see most of the year, and thus not representative of our river flows. Moreover, due to climate change and the region's population growth, we have been seeing a consistent drop in annual flows. Fishing rates are higher in the summer, during low flow months. Using a flow level more consistent with fish consumption is more protective of human health. Even though there is an extensive amount of flow data for the Spokane River, using historical data may not represent the future flows accurately. Given that, this calculation at a minimum should include an adjustment for this consistent drop in flows.

Response:

Regarding harmonic flows, see response to comment 16.2. As stated in that response, the EPA's promulgation of Revisions to the Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (65 FR 66444) recommends the use of the annual harmonic mean river flow to meet water quality criteria designed to protect human health.

15.9 Comment:

Margin of safety. We note that only implicit MOS provisions have been incorporated into the draft TMDLs. Because of high uncertainty within the watershed regarding the discharge of PCBs from both point and nonpoint discharges, it is recommended that an explicit MOS be

incorporated into the TMDL toward the upper end of the normal range of MOS. This would be considered an explicit MOS under EPA guidelines (EPA (2015), PCB TMDL handbook). As an example, the MOS for the Anacostia River TMDL (EPA 2007) was applied both implicitly and explicitly. The implicit MOS was applied by using conservative assumptions throughout, and explicitly applied by deducting 5% from the TMDL load allocation for all source categories except wastewater treatment plants (these were more uncertain) as a means of increasing protectiveness.

Response:

The EPA disagrees that an explicit MOS is needed in addition to the implicit method EPA selected for this TMDL project. The Clean Water Act Section 303(d)(1)(c) and 40 CFR 130.7(c)(1) require that TMDLs include a margin of safety to account for uncertainties in the model. EPA guidance (EPA 2002) explains that the margin of safety may be either implicit or explicit, or incorporate both types. Section 5.8 of the TMDL document (Margin of Safety) and the response to comment 7.7.2 describe the implicit margins of safety which include no loss of PCBs in the river and no dilution of total PCB loading from surface water and groundwater. The EPA concludes that these margins of safety coupled with allocations set to meet the Spokane Tribe water quality criterion are sufficiently protective to meet water quality standards and address model uncertainties.

15.10 Comment:

15.10.1

Wasteload Allocations and Potential Sources: EPA must adequately address all known sources of PCBs into the Spokane River system. By failing to address upstream sources in Idaho, MS4s, CSOs, dams, and hatcheries in a meaningful manner leaves a significant load practically unaddressed. EPA should include long-term plans to assess and respond to loading from MS4 stormwater, CSOs, fish hatcheries, and dams.

Using Post Falls as the upstream boundary neglects EPA's responsibility to oversee Idaho's compliance with downstream water quality standards. By failing to address Idaho sources, the TMDL essentially allows Idaho to continue to violate downstream water quality standards. It is clear from the supporting data that there are increasing concentrations from Lake Coeur d'Alene to Post Falls. The TMDL clearly recognizes that incoming concentrations have a significant impact on downstream concentrations. Starting at the border is insufficient for ultimately meeting standards and cleaning up this contamination. At a minimum, this plan should ask Idaho to implement an assessment of sources and timely response developed for Idaho dischargers.

Response:

The EPA disagrees that the TMDL project has failed to address all known PCB sources. All stormwater, CSOs, and hatcheries discharging within Washington jurisdiction are addressed in the wasteload allocations of the TMDL (Section 5.3). The comment is unclear on how dams are a source that is unaddressed; EPA does not have information indicating that dams are a discrete source of PCBs.

The EPA also disagrees that this TMDL project is required to assign individual allocations to Idaho sources. Regarding the geographic scope of the TMDL project and Idaho's responsibilities, see response to comment number 2.2. Expectations in TMDL implementation are set forth in Section 5.10 of the TMDL (Reasonable Assurance). See also response to comment 16.4.

15.10.2 Comment:

Additionally, though the TMDL recognizes that the dams (especially Long Lake Dam) create the largest PCB loading areas from sediments, the plan does not actually address reducing this existing load. Waiting for the sediment to reach equilibrium is inadequate and fails to protect those subsistence fishers, who are often fishing in these high loading areas.

Response:

The EPA has revised the TMDL document to incorporate a load allocation for riverbed sediments. See response to comment 7.3.3. There is substantial uncertainty in the relative importance of PCB fluxes into the water column from bedded sediments, including Long Lake sediments..

15.10.3 Comment:

Excluding the Little Spokane Fish Hatchery further ignores what is likely the most significant source of PCBs to the Little Spokane. Ecology research shows that water, fish tissue, fish feed, and sediment from hatcheries and hatchery fish contain actionable levels of PCBs. A 2018 Ecology study found that PCB concentrations in the wastewater samples at Spokane Hatchery ranged from 147-219 pg/L, and a total PCB load from Hatchery Operations at 7.8 mg/day. Fish feed containing high oils, fats, and lipids were believed to be the primary source of PCBs in unstocked hatchery-raised fish, and correlative relationships between PCBs in fish feed and hatchery fish that consume the feed have been documented (Carline et al., 2004; Serdar et al., 2006).

Response:

The EPA agrees that the Spokane Fish Hatchery is contributing PCBs to the Little Spokane River, which has a listed, impaired Assessment Unit in Washington. The EPA has added a wasteload allocation concentration of 1.3 pg/L and wasteload allocation loading of 0.067 mg/day (based

on a permitted effluent flow of 13.6 mgd) for the Spokane Fish Hatchery in Section 5.3.1 of the TMDL document (Municipal and Industrial Wastewater Discharges).

15.10.4 Comment:

The consent decree was the result of government agencies over multiple years failing to remedy the Spokane River's PCB pollution. An efficacious remedy for the river requires (1) a protective PCB TMDL and (2) an agency committed to implement it. We appreciate the inclusion of Ecology in the implementation of this plan. Ecology has been invaluable and will continue to be invaluable in implementation of the PCB TMDLs. Ecology has been active in monitoring PCBs throughout the watershed for many years, and has generated abundant valuable data. It is pertinent that Ecology holds a prominent role in implementation as it is more familiar with the site and contamination area.

In constructing an implementation strategy, we suggest that Ecology incorporate both point and nonpoint source controls, regulatory measures to minimize PCB inputs, and continue to focus on reducing or improving stormwater connectivity to receiving water bodies by installing specific features (e.g. BMPs such as infiltration basins, rain gardens, etc.). Increased wastewater treatment, increased source identification and management and focusing on inadvertent PCB production would all be prudent and valuable aspects of Ecology's implementation plan. We also encourage measurable timelines and milestones for assuring PCB reductions, and recommend that the monitoring database is regularly updated to allow for evaluation of progress. Creating the SRTAC last year was a positive step in promoting effective communication and management as part of TMDL implementation.

We also encourage development of a comprehensive toxics control strategy. Such a strategy would be used to support and develop an implementation plan led by Ecology. The implementation plan can be developed in a tiered and individualized manner.

To assist Ecology in the implementation of this TMDL, EPA should address the incongruence between the TSCA regulations and applicable wasteload allocations. The most straightforward approach would be to strengthen the TSCA rules pertaining to inadvertent PCBs to be consistent with the effluent limits in this TMDL. Significantly more information is available today than there was when the current standards were set in 1984. We recommend following up on the petition to EPA to reconsider the TSCA the 1970s-era provision that allows for up to 25 ppm in manufactured products (e.g. pigments and inks), a completely arbitrary provision, which we believe is used as a loophole for PCB discharge reduction as "incidental" PCBs. This applies directly to the Spokane River watershed, as incidental levels of PCBs are still being discharged under this provision. Parts-per-million is a full nine orders of magnitude above the parts-per-quadrillion levels we are seeking to achieve as part of TMDL load reduction

We offer our sincere thanks for the opportunity to allow us to provide these comments to you concerning the PCB TMDL and hope they are helpful. If you have any questions, need clarification, or wish to discuss the issues covered in this letter, we invite you to contact us at your convenience. We look forward to continuing to work with you on this important project.

Response:

The EPA notes the comments related to future Ecology actions and suggests the commenters share these comments at the SRTAC as Ecology works with the regional stakeholders and Spokane Tribe to implement this TMDL project. Section 5.10 of the TMDL document (Reasonable Assurances) describes existing activities that will help to inform Ecology's TMDL implementation plan. The EPA has added information in the Reasonable Assurances section on a nearly $7 million dollar grant Ecology has received from EPA's Columbia River Basin Restoration Program to develop a regional plan specific to the Spokane River and to fund on-the-ground implementation activities.

The EPA disagrees that new actions under TSCA are within the scope of this TMDL project. For further response regarding TSCA rules on PCBs, see response to comment 7.2.3.

16 Washington Department of Ecology

16.1 Comment:

The Washington State Department of Ecology (Ecology) submits these comments intended to clarify the TMDL and better support its successful implementation. Our comments are divided into three areas: technical, regulatory, and implementation.

Technical comments

Meaningful implementation of this TMDL requires better explanation about the data that was used (sources, median, ranges, assumptions and resulting levels of certainty) so that progress can be charted toward achieving the water quality criteria. As written, it is difficult to understand EPA's underlying basis, assumptions, and analysis associated with background PCB concentrations, boundary conditions, methods of data extrapolation, flow conditions, impact of Lake Spokane on PCB loading, and the defined critical period.

Response:

The EPA agrees that data will be important in tracking the progress of the TMDL implementation. The comment does not provide specific concerns about the information provided in the TMDL document. For more information, see Section 3.3 (Current Conditions and Recent Exceedances), Section 3.4 (Synoptic Monitoring Studies) and Appendix B (Recent PCB Environmental Monitoring Data) of the TMDL document, which describe the data that the

EPA used to determine the current condition of PCB levels in the watershed and their fate and transport in the system. Table B-2 includes all surface water PCBs samples that the EPA used to estimate current PCB levels in the Spokane River basin. Appendix C of the TMDL document (Spokane River PCB Mass Balance Assessment Tools) describes how these data were used to characterize the system and model for attaining allocations. Continued monitoring will be important to chart progress towards reducing PCBs in the watershed. The EPA will work with Ecology as Ecology works with regional partners and stakeholders and Spokane Tribe to implement this TMDL project.

16.2 Comment:

The Spokane River system is highly dynamic and this statement on page 44 requires further explanation: “Unlike many TMDLs, intra annual (i.e., seasonal) variability of river flows or PCB concentrations are less relevant than the long-term annual concentration. As such, the critical condition does not relate to seasonal variation in the TMDL.” The critical period should be during the August low flow period where PCB would have the highest concentrations. Using the annual average doesn’t define a critical period.

Response:

The EPA disagrees that the critical period should be the August low flow period. As noted in the TMDL document, the goal of the TMDL project is to meet the human health criteria for PCBs. Protection of human health requires achievement of water quality standards over a human lifetime, so the critical condition for this TMDL project is the long-term average loading capacity. Specifically, as recommended in the EPA’s promulgation of Revisions to the Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (65 FR 66444), this TMDL project applies the annual harmonic mean river flow as the critical condition for applying the water quality criteria to protect human health.

16.3 Comment:

The draft TMDL includes a load allocation (LA) based on a concentration of 1.3 pg/L total PCBs applicable to regional groundwater. Specifically, the TMDL identifies a computed LA in mg/day for the flow of contaminated groundwater to the river from the Kaiser Trentwood location. Ecology currently requires cleanup at the Kaiser Trentwood Site under Washington’s Model Toxics Control Act, including operation of a full-scale pump-and-treat system. This system, which is an Interim Action under the Amended Agreed Order between Kaiser and Ecology, is expected to significantly decrease the concentration and mass flux of PCBs in groundwater at the site. Ecology intends to continue implanting a multi-faceted approach at this location, with the goal of eliminating the impacts of PCB to the Spokane River and Spokane Valley/Rathdrum Prairie Aquifer from this location.

Response:

The EPA supports these actions to reduce PCBs in the Spokane River and added this information in Section 5.10 (Reasonable Assurance) and Appendix E (Implementation Actions) of the TMDL document.

16.4 Comment:

Please outline the actions the federal government will take toward TMDL implementation, and the role EPA will play in delivering those federal actions. As written, the reasonable assurances section minimizes EPA's contribution towards TMDL implementation. To be successful and achieve the TMDL goals, federal programs should also be consistent with the Clean Water Act's requirement to reduce PCB loading to the Spokane River. For example, EPA can further regulate PCBs through the Toxic Substances Control Act and address the background inputs. The TMDL assumes these inputs contribute to exceedances of the water quality criteria in all surface and groundwater inflows to the river and "there is effectively no dilution of total PCB loadings entering the rivers."

Ecology expects EPA to provide active and long-term support towards implementation of the TMDL. Federal funding that supports implementation of the TMDL is especially important--particularly, actions that address diffuse nonpoint contributions.

Response:

The EPA agrees that it is important to play a role in assisting Ecology, regional partners, stakeholders, and Spokane Tribe to implement this TMDL project, and the EPA intends to be an active and long-term partner. The EPA will continue supporting state, tribal and stakeholder efforts to implement TMDLs. In 2023, EPA awarded Ecology a $6.9 million grant as part of the Columbia River Basin Restoration Program for toxics reduction in the Spokane River basin, which includes funds to develop a regional plan specific to the Spokane River and for on-the-ground implementation activities after the plan is developed (EPA 2023b). The EPA also provides funding to Ecology's 319 Nonpoint Source program, which funds nonpoint source projects.

Regarding actions in the watershed, Section 5.10 of the TMDL document (Reasonable Assurance) explains past, ongoing, and future activities to reduce PCBs in Washington waters. The EPA has added information provided through public comment from Avista, City of Post Falls, City of Spokane, Hayden Area Regional Sewer Board, Inland Empire Paper Company, Liberty Lake Sewer and Water District, Kaiser Aluminum, and Washington Department of Ecology about activities in the watershed. Examples include past participation in the SRTTF in the regional effort to understand PCB sources, upgrades to treatment systems which have significantly reduced PCBs in effluent discharge, spill prevention procedures required by TSCA

to prevent PCB discharges, and commitments to public safety and compliance with NPDES discharge limits. The EPA has excerpted information from public comments on these activities/commitments in Appendix E of the TMDL document (Information Received During Public Comment on Actions to Address PCBs) and summarized this information in Section 5.10 of the TMDL document (Reasonable Assurance).

Regarding responsibilities related to TMDL assignments to the river at the Washington-Idaho and Washington-Spokane Tribe borders, the EPA has added information in Section 5.10 of the TMDL document (Reasonable Assurance). See also response to comment 2.2.

As previously discussed, the EPA recognizes that achieving the PCBs allocations is a long-term effort that will take a concerted regional effort, and the EPA plans to play an active role in the SRTAC and support other efforts in the long-term. See also response to comment 3.1.1.

Regarding TSCA, see response to comment 7.2.3, limits for PCBs under TSCA regulations are established under a separate Federal statute and do not determine allocations required under the Clean Water Act. The EPA is not certain what the commenter means by “background inputs”. Regarding the concept of natural background levels of PCBs, see response to comment 2.17.

16.5 Comment:

The Waste Load Allocations for the NPDES facilities were calculated based on average flow. A more appropriate calculation would be to use the design flow, which is available in the NPDES permit documents. This more accurately represents present and future growth trends.

Response:

For municipal facilities, the EPA agrees that the wasteload allocations are more appropriately calculated using the design flow, consistent with the NPDES regulations at 40 CFR 122.45(b)(1). The wasteload allocations for the POTWs have been modified accordingly, using the monthly average design flow listed in the current NPDES permit fact sheets.

For industrial facilities the regulations speak to production levels rather than flow, but Ecology addresses flows for water quality-based permitting in its permit writers manual. It says, for effluent limitations for carcinogens (like PCBs): "Industrial Effluents - Use the annual average flow based on the permit application or DMR analysis. Intermittent Discharges - Use equivalent annual flow (highest total volume of all discharge events in one year divided by 365 days)." The draft TMDL project used average annual flow for industrial facilities, so these wasteload allocations are unchanged in the final TMDL document.

16.6 Comment:

Please check the permit number for Midnite Mine. EPA's website lists the permit number for this facility as WA0026841, located on the Spokane Indian Reservation. WA0062841 is the current EPA-issued permit to Dawn Mining for discharges from the Midnite Mine to the Spokane Arm of Lake Roosevelt. According to our records, WA0025721, referenced in the draft TMDL, is an expired EPA-issued permit to Dawn Mining for discharges from the Midnite Mine to Blue Creek.

Response:

The EPA agrees that the correct permit number for the Midnite Mine is WA0026841. This has been corrected in the final TMDL.

16.7 Comment:

Please recognize and identify shared implementation responsibilities. While Ecology agrees that we have an important implementation role for this TMDL, implementation is ultimately a responsibility shared by Ecology, Idaho Department of Environmental Quality, other state agencies, local governments, the federal government (including EPA), Tribes, permittees in Washington and Idaho, private landowners, and other entities that address PCB discharges through on-the-ground actions.

Response:

The EPA agrees that it will take the efforts of many entities to address PCB discharges in the watershed. While Ecology will be leading the coordination of TMDL implementation planning effort, actual improvements to address PCBs will rely on entities responsible for PCB dischargers. The EPA has added language in Section 5.10 (Reasonable Assurances) and Appendix E (Implementation Actions) of the TMDL document regarding the past, ongoing, and existing work of multiple entities to reduce PCBs in the Spokane and Little Spokane Rivers watershed. See also response to comment 16.4 for additional information that the EPA has added that discuss the actions of various entities in the watershed that have significantly reduced PCB discharges.

16.8 Comment:

EPA's modeling supports the proposition that a boundary condition concentration of 1.3 pg/L is needed at the Washington-Idaho border to meet the applicable water quality standards and EPA established boundary conditions of 1.3 pg/L with Idaho and the Spokane Tribe. EPA also expects Idaho and the Spokane Tribe to meet these boundary conditions. We look forward to working with EPA on implementation of TMDL actions in areas outside of Washington jurisdiction so that these boundary conditions can be met.

Response:

Comment noted. See also response to comment 2.2 regarding Idaho responsibilities.

16.9 Comment:

Please provide any guidance or direction on how to appropriately express effluent limits in NPDES permits that are below levels measurable by analytical methods, such as the 1.3 pg/L allocation in this TMDL. Any examples of federal NPDES permits where this has been done would be appreciated.

Response:

Federal NPDES program guidance for expressing effluent limits below analytical detection or quantitation limits appears in Section 5.7.3 of the EPA's *Technical Support Document for Water Quality-based Toxics Control* or TSD (EPA, 1991). This guidance recommends including the water quality-based limit in the permit, regardless of the proximity of the limit to the analytical detection limit, along with a requirement indicating the specific analytical method that should be used for purposes of compliance monitoring. The TSD recommends that the permit should state that any sample analyzed in accordance with the specified method will be deemed compliant with the permit limit, unless other monitoring information indicates a violation. The TSD further recommends that any result reported at or above the compliance level should be reported as observed, whereas samples below the compliance level should be reported as less than the compliance level.

The TSD generally recommends the compliance level be set equal to the minimum level (ML). The ML is defined in footnote #5 to the sufficiently sensitive methods final rule preamble (79 FR 49001) as follows: "The term 'minimum level' refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL). Minimum levels may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor." Although the TSD states that the ML is not similar to a "limit of quantitation," Footnote #6 to the sufficiently sensitive methods final rule preamble, which is more recent than the TSD, states, "For the purposes of this rulemaking, EPA is considering the following terms related to analytical method sensitivity to be synonymous: 'quantitation limit,' 'reporting limit,' 'level of quantitation,' and 'minimum level.'" The TSD also states that permitting authorities may choose an alternative to the minimum level to make compliance determinations.

The TSD also recommends that permits include special conditions that help ensure that the limits are being met, e.g., fish tissue collection and analyses, limits and/or monitoring requirements on internal waste streams, and limits for surrogate parameters.

16.10 Comment:

If available analytical methods cannot reliably measure low levels (e.g. 1/3 pg/L (sic)), and the technology to achieve them is not currently known to exist, please describe how EPA would consider approval or disapproval of a water quality standards variance. Ecology, Idaho Department of Environmental Quality, EPA, and any other water quality permitting agencies will benefit from this information to ensure a consistent and defensible approach.

Response:

NPDES permits require a discharger to use approved methods for monitoring effluent for compliance purposes. If a permittee is in compliance with their permit limit based on the method detection limit, then the fact that a standard method's minimum detection limit is higher than the waste load allocation or permit limit does not generally necessitate a water quality standards variance.

Each water quality standards variance is unique and the informational needs and process for each are tailored to the specific situation surrounding the variance. Evaluation of whether a water quality standards variance is appropriate for a specific discharger is usually completed by the state during the NPDES permit development. This timing allows the state to evaluate the need for the water quality standards variance based on compliance with the proposed permit limit after the permit limit has been calculated. The EPA is available to work with Ecology and IDEQ on this topic to provide assistance, if requested. Additional information about water quality standards variances can be found at https://www.epa.gov/wqs-tech/water-quality-standards-variances.

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