

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Response to Comments on the Draft NPDES Permits for the City of Sandpoint

NPDES Permit Number ID0020842

September 2017

Overview

The United States Environmental Protection Agency (EPA) Region 10 issued a draft National Pollutant Discharge Elimination System (NPDES) permit for the City of Sandpoint on October 31, 2014. The public comment period was scheduled to close on December 1, 2014, but was extended to January 30, 2015.

On April 19, 2016, the EPA reopened the public comment period for the City of Sandpoint permit pursuant to 40 CFR 124.14. The reopened public comment period was scheduled to close on May 19, 2016 but was extended to July 5, 2016. This comment period was limited to those permit provisions that had changed from the previous draft that was issued for public comment. See the 2016 Fact Sheet for the specific changes that were made.

The EPA received comments from the City of Sandpoint (Sandpoint), the Kalispel Tribe of Indians (Kalispel Tribe), the Idaho Conservation League (ICL), Lake Pend Oreille Waterkeeper (LPOW), and the Lake Pend Oreille, Pend Oreille River, Priest Lake and Priest River Commission (Lakes Commission).

Response to Comments Received during the First Comment Period (October 31, 2014 – January 30, 2015)

Comment #1-1 (Sandpoint)

Sandpoint requests the WWTP be permitted to 5 MGD as submitted in the application. Sandpoint was surprised when the capacity was changed from 5 MGD to 3.62 MGD without consultation with the City as suggested in the permit writers' manual section 4.5.1 to request additional information and/or 4.5.3 to correct a mistake. Plant capacity affects nearly every aspect of the discharge permit. Therefore, should the draft permit be revised and reissued, we request the opportunity to comment on the entire permit, not just the capacity. Even after the comment period closes, Sandpoint would be eager to discuss all issues of the draft permit.

Response #1-1

This comment was addressed by changes to the revised draft permit, which is based on a design flow of 5.0 mgd. See the revised Fact Sheet at Page 9.

Comment #1-2 (Sandpoint)

The Water Quality Certification mandates an extension of the outfall to improve mixing of the effluent into the receiving water in an attempt to meet water quality criteria for phosphorus concentration. The river water quality, with the proposed discharge, was modeled using Cormix. The model results are inconclusive and very subjective when trying to define the actual currents and water movement as suggested by the hand drawn lines on the figures and the fact that the modeled plume does not bend as it spreads across the width of the river. The Cormix model was inappropriately used in an attempt to show a shore-hugging phosphorus plume which could cause the near shore total phosphorus (TP) concentration to exceed standards. The Cormix model is best suited to model point discharges into a water body with uniform flow in a rectangular cross-section. In this case, the receiving body does not fit the criteria. The Cormix model's discussion even states that the model cannot predict the plume and study is needed. The caveats in the discussion were ignored and the questionable results were used to force Sandpoint into a large capital project. The limitations of the model bring into question the potential success of an outfall extension. Extending the outfall would be overly burdensome and have

questionable success due to the limited ability of the model to accurately predict mixing in a non-rectangular section.

Response #1-2

This comment was addressed by changes to the revised draft permit and certification. The revised draft permit and certification do not require the city to extend the outfall.

During the development of the revised draft permit and certification, actual velocity data were collected for the Pend Oreille River near the Sandpoint outfall (Steed 2015). Cormix modeling was then repeated using the measured velocity data (Nickel 2015).

Although Cormix represents river channels as having a rectangular cross-section, this does not mean that Cormix is applicable only to waterbodies that actually have rectangular (or nearly rectangular) cross-sections. In Section 4.4, the Cormix User Manual instructs the user on how to reasonably represent an irregular river channel as a rectangular cross-section, so that boundary interactions, flow rates, and velocities are accurately simulated (Doneker and Jirka 2014).

Comment #1-3 (Sandpoint)

Mercury limits and monitoring requirements are proposed based on upstream fish tissue methylmercury concentrations in Lake Pend Oreille that exceed the state and national criteria of 0.3 mg/kg. We argue that these requirements should be removed because they are not consistent with either the treatment plant monitoring data that has been occurring under the current permit or the downstream fish tissue sampling performed by the State of Washington, EPA, and the Kalispel Tribe (WDOE, 2014, <https://fortress.wa.gov/ecy/publications/SummaryPages/1403020.html>). This is a relatively new document that may not have been available during development of the permit but must be considered now.

Expanded sampling of the surface water and fish sampling is not justified based solely on the upstream fish tissue sampling in Lake Pend Oreille. Methylation of mercury in the anaerobic/anoxic areas within the lake environment is well known. Combined with the large surface area and long detention times, the resident fish in the lake have access to and bioaccumulate methylmercury very differently than in the river environment where Sandpoint discharges. This is directly supported by the downstream fish tissue sampling where only a single sample out of 12 exceeded Idaho and EPA standards of 0.3 mg/kg and, at 0.492 mg/kg, it was within Washington standards of 0.77 mg/kg. That is likely one reason that the State of Washington is not imposing mercury restrictions on either the City of Newport or on the Ponderay Newsprint paper plant discharge. Water flowing downstream from Lake Pend Oreille past the Sandpoint treatment plant makes up over 80% of the water flowing in the reach where the more extensive fish sampling was performed near Ponderay Newsprint. Based upon the fish tissue back-calculation that EPA utilized to estimate the water quality upstream from Sandpoint's discharge, the river water quality is actually much better than it is in the lake, both of which meet the referenced standard of 0.012 µg/L. Beyond the simple expense and logistics required, it is our understanding that the Idaho Fish and Game has never granted fish sampling harvest permits to entities other than state, tribal, or federal agencies.

Response #1-3

As explained in the 2014 Fact Sheet at Pages 17 and 18, methylmercury fish tissue monitoring is appropriate for the City of Sandpoint because the City discharges quantifiable concentrations of

mercury and fish tissue concentrations in the upper Pend Oreille River are likely to exceed the State of Idaho's criterion for methylmercury in fish tissue. As explained in the 2016 Fact Sheet at Page 15, the EPA's *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion*, in Section 4.2.4, recommends biennial sampling of fish in waterbodies where recreational or subsistence harvesting is commonly practiced.

To address the commenter's concern about the burden of fish tissue sampling for mercury, the EPA has made the mercury fish tissue sampling requirements conditional, in the final permit. This is consistent with the *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion*, which states, on Page 123, that, where it is infeasible to calculate a numeric WQBEL, the permitting authority should consider including an effluent trigger level or reduction goal in the mercury minimization plan, and that exceeding a trigger level could prompt actions such as additional monitoring.

The final permit includes an effluent trigger level of 0.027 µg/L. This is the effluent concentration of mercury that would result in a receiving water concentration of mercury equivalent to Idaho's fish tissue criterion of 0.3 µg/kg after dilution with 25% of the 30Q5 flow rate of the receiving water, using the trophic level 4 national BAF of 2,700,000 L/kg and assuming an upstream concentration of zero. Although the EPA does not believe it is appropriate to use the national BAFs to calculate numeric water quality-based effluent limits (WQBELs) for mercury, the EPA does believe it is reasonable to use the national BAFs to establish a trigger level for additional monitoring.

The final permit requires fish tissue sampling for mercury at least once during calendar years in which both of the following conditions are true: The maximum monthly average effluent concentration of total mercury during the prior calendar year was greater than 0.027 µg/L, *and* the permittee did not perform fish tissue sampling during the prior calendar year. This will result in at most one sampling event every two years.

Regarding Washington's water quality standards, the 0.77 mg/kg concentration referenced by the commenter is not a water quality standard, rather, it is the State's "fish tissue equivalent concentration," which is the concentration of a contaminant in fish tissue that equates to Washington's water quality standard for mercury in the water column, for the protection of human health. It is calculated by multiplying the contaminant-specific Bioconcentration Factor (BCF) times the contaminant-specific National Toxics Rule Water Quality Criterion for water. In addition, on November 28, 2016, the EPA promulgated a methylmercury criterion of 0.03 mg/kg (30 ppb) in fish tissue for the State of Washington (81 FR 85431). All of the results for mercury in fish tissue collected from the Pend Oreille River in Table 4 of the Washington Department of Ecology's *Freshwater Fish Contaminant Monitoring Program: 2012 Results* were greater than 30 ppb.

Comment #1-4 (Sandpoint)

Polychlorinated biphenyl concentrations in the Pend Oreille River system are largely unknown. However, the Ponderay Newsprint Company's paper mill downstream from Sandpoint was required to obtain river water quality and effluent data for their NPDES permit (WDOE, 2012, Fact Sheet for NPDES Permit WA0045628). The two river sample results were below the detection limits of 50 pg/L and indicate that the river meets both Idaho and Washington water quality standards. Ponderay Newsprints' six effluent samples average 5,790 pg/L with a maximum value of 10,800 pg/L. Based on this information, Washington has proposed an effluent limit of 126,600 pg/L for Ponderay Newsprint and no

limits or monitoring for the City of Newport. While there may be a concern for fish tissue concentrations near or below the Ponderay Newsprint outfall location (WDOE 2014), making it seem reasonable for Sandpoint to gather some background data on their influent and effluent, Sandpoint should not be required to perform monitoring for a water body that apparently meets water quality standards.

Response #1-4

This comment was addressed by changes to the revised draft permit. The revised draft permit requires the City of Sandpoint to collect and analyze two upstream receiving water samples for PCB congeners during the first year of the permit term. If no quantifiable PCB congeners are measured during the first year, the permittee may discontinue receiving water sampling for PCBs. If any PCB congeners are present at quantifiable concentrations in the first two samples, receiving water PCB sampling must continue.

The EPA disagrees that the Pend Oreille River “apparently meets water quality standards” for PCBs in the State of Washington. Three segments of the Pend Oreille River in Washington are listed as impaired for PCBs, and sampling performed by the Kalispel Tribe and the Washington Department of Ecology in 2011 and 2012 found concentrations of PCBs in several species of fish that exceeded the State’s “fish tissue equivalent concentration” of 5.3 ppb, which is the concentration of PCBs in edible fish tissue that equated to Washington’s PCB water quality criterion for the protection of human health (170 pg/L), which was in effect under the National Toxics Rule at the time the this fish tissue monitoring was performed (Seiders et al. 2014).

Further, it should be noted that on November 28, 2016, the EPA promulgated for the State of Washington a water quality criterion of 7 pg/L for PCBs (81 FR 85431), which is a 96% reduction from the prior criterion.

Comment #1-5 (ICL)

ICL stated that the permit should have a WQBEL for temperature because the receiving water is listed as impaired for temperature and the Sandpoint WWTP discharges effluent that is at times at a temperature greater than the receiving water.

Response #1-5

The EPA agrees that the Pend Oreille River is listed as impaired for temperature. As stated in the 2014 fact sheet at Page 10, the EPA has determined that the discharge does not have the reasonable potential to cause or contribute to excursions above water quality standards for temperature.

The Pend Oreille River is designated for cold water aquatic life. Thus, as stated in the 2014 fact sheet, the applicable water quality criteria are an instantaneous maximum of 22 °C and a maximum daily average of 19 °C.

The effluent temperature is less than 19 °C except from June – September. Thus, even without considering dilution, the discharge does not have the reasonable potential to cause or contribute to excursions above water quality criteria for temperature from October – May.

From June – September, the maximum ambient river temperature is above 19 °C. However, at the edge of the acute mixing zone, the discharge would increase the temperature of the river by no more than

0.04 °C. This increase is well within the precision of temperature monitoring equipment. Therefore, the EPA considers it to be negligible.

Therefore, the discharge does not have the reasonable potential to cause or contribute to excursions above water quality criteria for temperature at any time.

Comment #1-6 (ICL)

The antidegradation review relied upon by the EPA for this draft permit incorrectly determined that the receiving water was only a tier I water for aquatic life.

Idaho antidegradation rules are found in IDAPA 58.01.02.54. Here it states:

05. Identification of Tier II Waters. The Department will utilize a water body by water body approach in determining where Tier II protection is appropriate in addition to Tier I protection. This approach shall be based on an assessment of the chemical, physical, biological and other information regarding the water body. The most recent federally approved Integrated Report and supporting data will be used to determine the appropriate level of protection as follows: (3-29-12)
- a. Water bodies identified in the Integrated Report as fully supporting assessed uses will be provided Tier II protection.
 - b. Water bodies identified in the Integrated Report as not assessed will be provided an appropriate level of protection on a case-by-case basis using information available at the time of a proposal for a new or reissued permit or license.
 - c. Water bodies identified in the Integrated Report as not fully supporting assessed uses will receive Tier I protection for the impaired aquatic life or recreational use, except as follows: (3-29-12)
 - i. For aquatic life uses identified as impaired for dissolved oxygen, pH or temperature, if biological or aquatic habitat parameters show a healthy, balanced biological community is present, as described in the “Water Body Assessment Guidance” published by the Idaho Department of Environmental Quality, then the water body shall receive Tier II protection for aquatic life uses. (3-29-12)
 - ii. For recreational uses, if water quality data show compliance with those levels of water quality criteria listed in Sections 200, 210, 251, and 275 (where applicable), then the water body shall receive Tier II protection for recreational uses. (3-29-12)

Pursuant to IDAPA 58.01.02.052.05.c.i, the receiving water should have been provided tier II protection for aquatic life.

This is so because the cause of impairment are listed as temperature.¹ And, the receiving water biological and habitat parameters show that the river is healthy and balanced — as demonstrated both by EPA’s bull trout assessment and the fact that the DEQ cannot authorize a mixing zone if the mixing zone will harm the designated beneficial uses.

¹ Dissolved gas (supersaturation) is also listed as a cause of impairment. This cause is also listed as an exemption to tier I designation in IDAPA 58.01.02.54.05.c.i. Additionally, as discussed in a later section of these comments, gas supersaturation is not present in the receiving water in the vicinity of the discharge.

DEQ is required to undertake a biological, chemical and physical appraisal of the receiving water. Pursuant to this requirement, DEQ must have determined that the receiving water contained healthy biological and habitat parameters, otherwise DEQ would not have authorized the use of a mixing zone.

As such, this antidegradation review needs to be redone before this permit can be issued.

Response #1-6

As stated in the 2014 fact sheet at Pages 9 and 10 and in the 2016 fact sheet at Page 10, the EPA reviewed the antidegradation reviews completed by IDEQ in its draft certifications and found them to be consistent with the State's antidegradation policy and implementation methods (IDAPA 58.01.02.051 and 052).

The commenter references a provision of Idaho's antidegradation method which states, "for aquatic life uses identified as impaired for dissolved oxygen, pH or temperature, if biological or aquatic habitat parameters show a healthy, balanced biological community is present, as described in the 'Water Body Assessment Guidance' published by the Idaho Department of Environmental Quality, then the water body shall receive Tier II protection for aquatic life uses" (IDAPA 58.01.02.052.05.c.i).

The commenter is correct that the cold water aquatic life use of the Pend Oreille River are impaired by temperature. However, this use is also impaired by dissolved gas supersaturation, which, contrary to the commenter's statement, is not one of the impairment causes for which the State can determine that the water body shall receive Tier II protection for aquatic life uses. The only impairment causes listed in IDAPA 58.01.02.052.05.c.i are dissolved oxygen, pH and temperature. Dissolved gas supersaturation is distinct from dissolved oxygen impairment. Therefore, based upon the information in IDEQ's certification and regulations, EPA believes that IDEQ has properly identified the Pend Oreille River as a Tier I waterbody for aquatic life uses.

Comment #1-7 (ICL)

An additional error exists in the antidegradation review. The review (and the factsheet) state that the receiving water is impaired for total dissolved gas supersaturation. However, the receiving water in the vicinity of the discharge is not in violation of standards for total dissolved gas supersaturation. Downstream from the WWTP point of discharge is the Albeni Falls Dam. Distant and downstream from the WWTP, as a result of the Albeni Falls Dam, the river exceeds the state water quality standards for this parameter. The Albeni Falls Dam is a barrier to fish passage in the river. Since the impacts of gas supersaturation are exclusive to aquatic life, and aquatic life that is impacted by the gas supersaturation caused downstream of the dam cannot swim upstream past the dam, it is not logical to say that the waters in the vicinity of the WWTP discharge are impacted by the supersaturated gas levels downstream from the dam. For this reason, the receiving water needs to be listed as not impaired by dissolved gas supersaturation.

Response #1-7

In general, the beneficial use support status of the Pend Oreille River listed in the State of Idaho's Integrated Report is beyond the scope of this permitting action. As explained in the 2014 Fact Sheet at Page 10, the discharge does not have the reasonable potential to cause or contribute to excursions above water quality standards for total dissolved gas, thus no effluent limits are necessary for total dissolved gas for this discharge. However, the beneficial use support status of the receiving water is

relevant to determining which tier of antidegradation protection is provided. See IDAPA 58.01.02.052.05.

The Pend Oreille River, from Pend Oreille Lake to the Priest River, assessment unit ID17010214PN002_08, is not supporting the use of cold water aquatic life due to temperature and dissolved gas supersaturation, according to Idaho's 2014 Integrated Report (IDEQ 2017). According to IDEQ, the source of the dissolved gas supersaturation is not the Albeni Falls Dam; it is the two hydroelectric dams on the Clark Fork River (personal communication with June Bergquist, IDEQ, November 23, 2016). Therefore, the statements that EPA made in the 2014 fact sheet regarding the impairment due to total dissolved gas supersaturation are correct.

Comment #1-8 (ICL)

As noted above, the EPA cannot integrate erroneous State conclusions into the EPA's NPDES permit. While the State has the authority to authorize mixing zones, the EPA cannot integrate a mixing zone into an NPDES permit if the mixing zone authorized by the state violates the State's own mixing zone rules.

In this instance, the State has authorized a mixing zone for TP that utilizes 43.5% of the receiving water's flow. The EPA notes (on page C-2 of the factsheet) that the State mixing zone rules "in general" do not provide for mixing zones greater than 25% of the volume of the stream flow. EPA then goes on to state that Idaho provided an "adequate justification for providing a larger mixing zone than it would generally provide."

However, Idaho's mixing zone rules provide no means for the State to authorize a mixing zone greater than 25% of the receiving flow. So, while it is clear that the State is ready and willing to authorize a mixing zone that is greater than 25% of the receiving flow, it is not able to do so because its own rules do not provide a means of doing so. As such, it is inappropriate for the EPA to incorporate a mixing zone (and accompanying effluent limits) into its NPDES when that mixing zone violates the State's own mixing zone rules.

The largest mixing zone that the EPA can incorporate into the NPDES permit is 25%. The TP effluent limit in the permit needs to be calculated so as to ensure that EPA's numeric interpretation of the State's narrative TP water quality standard is not violated at the edge of a 25% mixing zone.

Response #1-8

The fact that the authorized mixing zones use more than 25% of the stream flow is not a violation of Idaho's water quality standards. Idaho's mixing zone policy states that, "The Department may authorize a mixing zone that varies from the limits in Subsection 060.01.h. if it is established that...(a) larger mixing zone is needed by the discharger and does not cause an unreasonable interference with, or danger to, beneficial uses as described in Subsection 060.01.d., and the mixing zone meets the other requirements set forth in Section 060. The discharger shall provide to the Department an analysis that demonstrates a larger mixing zone is needed given siting, technological, and managerial options." IDEQ has determined that a larger mixing zone is necessary in this case.

Although, similar to the TP limits proposed in the 2014 draft permit, the revised June – September TP limit is based on a mixing zone larger than 25% of the stream flow volume, it is also based on a more conservative stream flow statistic. Specifically, the June – September TP limit is based on a mixing zone encompassing 47% of the 30-day, 10-year low flow rate of the Pend Oreille River, which is 6,640 CFS.

The TP limits in the 2014 draft permit were based on a mixing zone encompassing 43.5% of the 10th percentile 365-day rolling harmonic mean flow of 10,259 CFS. The revised June – September TP mixing zone is equivalent to a mixing zone encompassing 30% of the stream flow used to calculate effluent limits for TP in the 2014 draft permit.

Comment #1-9 (Kalispel Tribe)

Don't delay implementing WQBELs. Thirteen years have passed since the last permit was issued.

Toxics in fish tissue around the Sandpoint discharge should be quantified and used to confirm existing water contamination and derive limits. The best analytical methods available for characterizing toxics in the Sandpoint effluent and local fish should be required for evaluations.

Estimates of wastewater coefficients of variation (CV = 0.6 when data N <10), bioaccumulation factors (national default values) and other regional data should be used to determine "reasonable potential", derive water column criteria, and to calculate WQBELs.

If protective WQBELs cannot be reasonably derived, then a two-year permit should be issued so that pertinent information can be collected and a new permit can then be subsequently issued with WQBELs based on new data and soon to be revised ID water quality criteria.

Response #1-9

With the exception of the June – September effluent limits for TP, for which a compliance schedule has been authorized, the permit does not “delay” implementing WQBELs. WQBELs for chlorine, mercury, and for TP from October – May are effective immediately on the effective date of the final permit.

As described in Appendix F to the 2016 fact sheet, the EPA has used available effluent and receiving water data to conduct a reasonable potential analysis for ammonia, arsenic, chlorine, chromium, copper, cyanide, lead, mercury, nickel, nitrate + nitrite, TP, silver, whole effluent toxicity and zinc. In the 2016 fact sheet, the EPA found that the discharge has the reasonable potential to cause or contribute to excursions above water quality standards for ammonia, chlorine, total phosphorus and mercury, and therefore proposed WQBELs for these pollutants. The EPA also determined that the discharge has the reasonable potential to cause or contribute to excursions above Idaho’s water quality criterion for methylmercury in fish tissue; however, there is insufficient information at this time to derive a numeric water quality-based effluent limitation from the fish tissue criterion. Therefore, the permit requires the City to develop and implement a mercury minimization plan to address the methylmercury fish tissue criterion.

The EPA found that the discharge does not have the reasonable potential to cause or contribute to excursions above water quality standards for any of the other pollutants evaluated.

The EPA has determined that pH data collected by LPOW, which were used to calculate the value of the water quality criteria for ammonia in the 2016 Fact Sheet, were not adequately precise for this purpose. LPOW used test strips that are only accurate to within 0.5 pH units. When pH data from LPOW are excluded from the analysis, the EPA finds that the discharge does not have the reasonable potential to cause or contribute to excursions above water quality criteria for ammonia. Thus the final permit does not include WQBELs for ammonia.

Comment #1-10 (Kalispel Tribe)

Proposed permit limits calculated with dilution provided mixing zone is not appropriate where it is clear that the water quality criteria are already exceeded and beneficial uses are lost (e.g., contaminated fish tissue requiring consumption advisories for fish both above and below the discharge).

Response #1-10

The State of Idaho has authorized mixing zones for ammonia, arsenic, chlorine, chromium III, chromium VI, copper, cyanide, lead, mercury, nickel, nitrate + nitrite, zinc, and TP. In no case has the State authorized a mixing zone for which there is no assimilative capacity relative to a numeric water column water quality criterion, based on available upstream water quality data.

Comment #1-11 (Kalispel Tribe)

The existing mercury criterion in the current Idaho WQ standards is not protective considering best available science and is resulting in harm to the aquatic resources and animals which use the fish for food. This is further confirmed by the existing fish consumption advisories.

No mixing zone for dilution of the wastewater is available for mercury – Mercury levels already exceed safe fish tissue contamination as stated in the consumption advisories for fish both upstream and downstream of the outfall. Therefore, no dilution factor should be used in permit limit calculations for mercury.

WQBEL for mercury required – Limits should be derived using the EPA national BAF factor contained in the EPA 2001 mercury guidance or using a newer USGS calculated BAF (see Scudder et al., USGS Report 2009-5109) to derive interim WQ criteria and WQBEL in the vicinity of Sandpoint discharge until a Pend Oreille regional BAF can be derived.

Response #1-11

Regarding the commenter's statement that "the existing mercury criterion in the current Idaho WQ standards is not protective considering best available science," it is not clear whether the commenter is referring to Idaho's criterion for methylmercury in fish tissue (0.3 mg/kg) or the water column criteria of 0.012 µg/L (chronic) and 2.1 µg/L (acute), which do not appear in the Idaho Water Quality Standards (IDAPA 58.01.02), but are in effect for Clean Water Act purposes in Idaho.

Idaho's fish tissue methylmercury criterion of 0.3 mg/kg is identical to the EPA's current recommendation.² As explained in the 2014 fact sheet (Pages 17 – 18), the EPA has followed permitting guidance established by the EPA and the State of Idaho in establishing permit conditions to address the fish tissue criterion. Specifically, the EPA found that the discharge has the reasonable potential to cause or contribute to excursions above the fish tissue criterion because there have been quantifiable discharges of mercury from the facility and the fish tissue criterion is exceeded upstream from the discharge. The dilution of the effluent in the receiving water was not a factor in establishing permit conditions that address the fish tissue criterion.

Assimilative capacity is available relative to the Clean Water Act-effective water column criteria for mercury, and a mixing zone has been authorized. The Clean Water Act-effective water column chronic criterion for mercury of 0.012 µg/L is more stringent than the EPA's current recommendation of 0.77

² <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table>

µg/L.³ The Clean Water Act-effective water column acute criterion for mercury of 2.1 µg/L is less stringent than the EPA's current recommendation of 1.4 µg/L. However, in this case, the chronic criterion is more limiting, so the acute criterion has no influence on the effluent limits.

In section 7.5.2.1, the EPA's *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion* recommends requiring a mercury minimization plan if a discharge has the reasonable potential to cause or contribute to excursions above the fish tissue criterion, but it is not feasible to translate the fish tissue criterion to a water column concentration. Consistent the EPA has required the permittee to develop a mercury minimization plan. See the 2014 Fact Sheet at Pages 17-18. As discussed in Section 3.1.3.1.3, of the EPA's *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion*, use of the draft national BAFs will be either over- or under-protective.

Comment #1-12 (Kalispel Tribe)

TP is contributing to excessive increases in pH downstream. Derivation of permit limits for TP need to evaluate the cumulative impact of wastewater discharges under critical seasonal river conditions using the appropriate EPA Ecoregion II Nutrient Criteria for Lakes and Reservoirs which is 8.8 µg/L instead of the 10 µg/L that was used for permit loading calculations. The flow used in the loading calculation should also be representative of the most critical season for TP impacts (August/early September). The 30Q10 for August should be used to account for the critical summer growing season which is about 8,000 CFS instead of the 10,259 CFS used in the allowable TP loading calculation.

Response #1-12

This comment was addressed in the revised draft permit. As stated in the 2016 Fact Sheet, at Page 10, the EPA used seasonal 30Q10 flows to calculate available dilution for TP. The seasonal 30Q10 flow rates are 6,640 CFS for June – September and 8,260 CFS for October – May.

As stated in the 2016 Fact Sheet at Page E-8, the EPA has evaluated the cumulative impact of wastewater discharges the CE-QUAL-W2 model. Modeling showed that the City of Sandpoint's discharge of TP, as authorized by the permit, combined with the discharges from other point sources to the Pend Oreille River (the City of Priest River and the City of Dover), would not cause violations of the State of Idaho's water quality criteria for DO or pH, and that periphyton accumulations and water column chlorophyll a concentrations are below nuisance thresholds (Cope 2015).

As explained in the 2016 Fact Sheet at Pages E-1 and E-2, the 10 µg/L ecoregional criterion for rivers and streams is a reasonable interpretation of Idaho's narrative criterion for nutrients, in this case.

Comment #1-13 (Lakes Commission)

The Pend Oreille River was recently delisted for nutrient impairment for TP levels. Excessive macrophyte growth linked to TP loading is undesirable, impacting recreation and wildlife habitat. We question whether the TP limit has been sufficiently set to keep the river from being listed again while taking into consideration additional TP inputs from other dischargers and non-point sources. We were baffled by why an increased mixing zone for TP was granted. It would seem sensible to set a limit that does not need an increased mixing zone to reach complete mixing. We support setting a TP limit that will keep the Pend Oreille River from becoming 303d listed for nutrient impairment.

³ <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table>

Response #1-13

This comment was addressed by changes made to the revised draft permit. The revised draft permit includes more stringent WQBELs for TP than the 2014 draft permit, from June – September, when the river is most susceptible to the effects of nutrient discharges. The EPA also used the CE-QUAL-W2 model to evaluate the cumulative effects of the Sandpoint discharge, as well as other discharges to the Pend Oreille River. As explained on Page E-8, modeling showed that the City of Sandpoint’s discharge of TP, combined with the discharges from other point sources to the Pend Oreille River (the City of Priest River and the City of Dover), would not cause violations of the State of Idaho’s water quality criteria for DO or pH, and that periphyton accumulations and water column chlorophyll a concentrations are below nuisance thresholds (Cope 2015).

Although, similar to the TP limits proposed in the 2014 draft permit, the revised June – September TP limit is based on a mixing zone larger than 25% of the stream flow volume, it is also based on a more conservative stream flow statistic. Specifically, the June – September TP limit is based on a mixing zone encompassing 47% of the 30-day, 10-year low flow rate of the Pend Oreille River, which is 6,640 CFS. The TP limits in the 2014 draft permit were based on a mixing zone encompassing 43.5% of the 10th percentile 365-day rolling harmonic mean flow of 10,259 CFS. The revised June – September TP mixing zone is equivalent to a mixing zone encompassing 30% of the stream flow used to calculate effluent limits for TP in the 2014 draft permit.

Thus, the effluent limits proposed in the revised draft permit will protect water quality in the Pend Oreille River.

Comment #1-14 (Lakes Commission)

The Lakes Commission supports clean water to produce healthy fish. With this goal in mind, we would like to see quality data collected to decide what pollutants are of concern to Idaho's fish consumers. If individual dischargers are assigned the responsibility of doing a fish tissue analysis, the data will likely be fragmented in time, quality, and methodology. The City of Sandpoint should not be assigned the task of a fish tissue analysis. This should be the responsibility of Idaho agencies and the Sovereign Nations holding rights to properties in Idaho's boundaries. Then, effluent limits, if deemed necessary and effective, should be developed based off of the findings.

Response #1-14

As explained in the 2014 Fact Sheet at Pages 17 and 18, methylmercury fish tissue monitoring is appropriate for the City of Sandpoint because the City discharges quantifiable concentrations of mercury and fish tissue concentrations in the upper Pend Oreille River likely to exceed the State of Idaho’s criterion for methylmercury in fish tissue. As explained in the 2016 Fact Sheet at Page 15, the EPA’s *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion*, in Section 4.2.4, recommends biennial sampling of fish in waterbodies where recreational or subsistence harvesting is commonly practiced.

As stated in the response to comment #1-3, in the final permit, the EPA has made fish tissue monitoring conditional.

Comment #1-15 (Lakes Commission)

The Lakes Commission does not believe that a mercury limit should be imposed on Sandpoint. Monitoring over the last permit cycle has shown few mercury detections. The mercury minimization plan is prescribed as a tool to reduce mercury loads so that the limit may one day be removed, but how can mercury levels be reduced in the effluent if they are rarely detected in the first place. And what is the purpose of fining a discharger whose rare mercury exceedance was the result of a well-intentioned citizen accidentally dropping a florescent lightbulb in the sink?

This being said, the Lakes Commission is in support of proactive steps towards curbing these pollutants where possible before or without setting limits. These measures could include pretreatment monitoring at the industrial dischargers to the POTW for mercury (as well as dioxins and PCBs); a mercury minimization plan as described in the draft permit; and general community outreach on the sources and human health threats of toxics. The Lakes Commission has committed to helping the City and Bonner County as a whole work to limit the addition of toxic pollutants to our waterways.

Response #1-15

Although the commenter is correct that historic effluent monitoring for mercury have shown few detections, it should be noted that the City of Sandpoint has used insensitive analytical methods for mercury. The 2002 permit required a method detection limit of 0.2 µg/L, for mercury, which is 16.6 times the chronic water column criterion for mercury which is in effect for Clean Water Act purposes in Idaho. EPA guidance now recommends the use of EPA Methods 245.7 or 1631E for analysis of mercury in water. These methods have quantitation levels of 0.005 µg/L and 0.0005 µg/L, respectively (EPA 2010). If sufficiently sensitive methods had been used, mercury may have been detected more frequently in the effluent.

Even though Sandpoint used insensitive methods, mercury was nonetheless detected in the effluent at concentrations as high as 1.1 µg/L, which is 92 times the chronic water column criterion for mercury which is in effect for Clean Water Act purposes in Idaho. The results of influent samples taken during the week that mercury was detected in the effluent (November 2 – 8, 2008) were about 5 times higher than the effluent (Van Dyk 2009). This suggests that there was, in fact, a discharge of mercury to the treatment plant (and that the treatment plant removed about 80% of the influent mercury). As explained in Appendix F to the 2016 Fact Sheet, the discharge has the reasonable potential to cause or contribute to excursions above the numeric acute and chronic water quality criteria for mercury, which are in effect for Clean Water Act purposes in Idaho. Thus, WQBELS are necessary for mercury.

Comment #1-16 (Lakes Commission)

In relation to the antidegradation rule, the Pend Oreille River is listed as impaired for cold water aquatic life because of total dissolved gas (TDG) and temperature. These listings reduce antidegradation protection to Tier 1 for cold water aquatic life. Both of these impairments are not caused by this discharger or any other activity happening on the Idaho portion of the river, but yet this leaves the river less protected for other pollutants that fall under cold water aquatic life. This appears to be a rift in the goals of antidegradation.

Response #1-16

As stated on Page 10 of the 2016 Fact Sheet, the EPA has evaluated the State of Idaho's antidegradation review and found that it is consistent with the State's antidegradation policy and implementation

methods. This includes the State's decision to provide only Tier I antidegradation protection to the Pend Oreille River for aquatic life uses and Tier II protection for recreation uses, in accordance with the State of Idaho's antidegradation implementation methods for identification of Tier II waters at IDAPA 58.01.02.052.05.

Comment #1-17 (LPOW)

The Pend Oreille River is an important waterbody adjacent to the City of Sandpoint, Idaho. Its designated uses are cold water aquatic life, domestic water supply, primary contact recreation, agricultural and industrial water supply, wildlife habitat and aesthetics. Of these uses, cold water aquatic life and primary contact recreation are the most sensitive and unique. The River is relied upon and used heavily by the local populace, fishermen, and seasonal vacationers; unfortunately, some effects of its use – and neglect – are becoming increasingly apparent.

The segment of the Pend Oreille River from Lake Pend Oreille to Priest River is listed as impaired for dissolved gas (nitrogen) supersaturation and temperature in IDEQ's 2012 Integrated Report. The likely cause of dissolved gas supersaturation is the operation of Avista's upstream Cabinet Gorge Dam on the Clark Fork River. The likely cause of temperature impairment is the removal of riparian shade trees, unhealthy turbidity related to erosion and sedimentation, and excessive discharges of TSS from wastewater and stormwater runoff from impervious surfaces.

In 2008 IDEQ listed the Pend Oreille River as impaired for TP on its Integrated Report. The agency made this decision based on data collected by the Tri-State Water Quality Council ("TSWQC") showing excessive levels of TP in the river. The EPA subsequently approved this report. In reevaluating this issue for its 2010 Integrated Report, IDEQ shifted its reasoning and methods of data interpretation. Despite indications that TP concentrations were exceeding thresholds key to supporting beneficial uses, IDEQ took exception to the previously accepted TSWQC data and found it to be insufficient. This finding was based on an alleged lack of quality assurance analysis and validity of comparing TP concentrations in the river to the Pend Oreille Lake Nearshore TMDL for TP.

IDEQ performed its own analysis of TP concentrations in the Pend Oreille River during the 2009 field season. A total of 38 grab samples were collected from 10 locations from June through September. In that instance, IDEQ ironically used the Pend Oreille Lake Nearshore TMDL secondary target of 0.012 mg/L (for grab samples) as a benchmark for "exceedance" since Idaho does not possess numeric criteria for nutrient loading to waterways. According to IDEQ's study, four samples exceeded the selected benchmark in certain locations. However, those sampling locations with exceedances were deemed "not representative of the Pend Oreille River" and therefore excluded from consideration as to whether the Pend Oreille River was in fact impaired.

The allegedly suspect locations included shoreline areas that are not flushed at the same rate as deeper portions of the river. Even discounting those near-shore samples, an additional four samples collected from areas that were considered representative of the river measured just shy or at the 0.012 mg/L benchmark. This is relevant as the totality of ambient, representative monitoring essentially showed the main channel of the river – and without question the near-shore areas of river – were at threshold limits of impairment in 2010.

Since 2010, data collected by LPOW’s Water Quality Monitoring Program (WQMP)⁴ demonstrates TP impairment of the Pend Oreille River outside of the perceived mixing zone (Table 1). Bolded values indicate samples that exceeded 0.010 mg/L (10 µg/L), the interpreted narrative criteria for TP applicable in permitting here, for the Sandpoint Wastewater Treatment Facility. Put another way, only 2 out of 14 samples exhibited concentrations of TP below 0.010 mg/L (10 µg/L), which is to say the vast majority of best available science consistently shows ambient river water quality is already exceeding benchmark levels that EPA and IDEQ have deemed representative of impairment.

Table 1-1. TP data collected by the Lake Pend Oreille Waterkeeper Water Quality Monitoring Program

Total Phosphorus – Sandpoint WWTP (mg/L)			
	2012	2013	2014
June	No data	0.306	0.0097
July	0.0084	0.0184	0.021
Aug.	0.037	0.0903	0.0564
Sept.	0.0352	0.0287	0.0163
Oct.	0.0232	0.778	0.0374

In addition to the numeric sampling data showing existing impairment of the Pend Oreille River today, LPOW has previously submitted narrative evidence of the Pend Oreille River’s impairment. Specifically, we submitted four photographs to IDEQ as comments on the draft 2010 Integrated Report to show readily available evidence of the river’s failure to maintain its designated uses, and in turn to argue against the propriety of delisting of the Pend Oreille River. Those photographs contained the following description:

Shoreline photographs reveal visible sludge. The photographs show high levels of visible slime and other nuisance aquatic growths on the River. As evidenced in the pictures, the oxygen-demanding aquatic growths inhabit bays and shorelines that could otherwise be used for Primary Contact Recreation and scenic viewing. These growths inhibit the River’s designated beneficial uses because residents and visitors will not swim in these and other similar areas. It is therefore evident that high levels of TP are creating nuisance aquatic growths that impair the River’s beneficial use.

LPOW referred to IDEQ’s 2009 TP monitoring results as well as their own TP monitoring results for three locations along the river.

Response #1-17

The EPA is aware of the use impairments in the Pend Oreille River due to temperature and total dissolved gas. The discharge does not have the reasonable potential to cause or contribute to excursions above water quality standards for temperature or total dissolved gas, so no effluent limits are necessary for these pollutants. See the 2014 Fact Sheet at Page 10 and the response to Comment #1-5.

The State of Idaho’s decision to de-list the Pend Oreille River for TP, and the EPA’s decision to approve this de-listing, are beyond the scope of this permitting action.

⁴ 2012-2014 sampling data available online at: <http://www.lakependoreillewaterkeeper.org/water-quality-monitoring-program.html>

The data provided by the commenter in Table 1-1 are only available in graphical format at the website provided by the commenter. However, the commenter had also provided numerical TP data to the EPA by e-mail on December 10, 2015. The data summarized in table 1-1, above, were collected at the “Sandpoint WWO” station⁵, which is located very close to Sandpoint’s discharge. It is likely that samples taken at this location are directly influenced by the effluent plume. As explained in Appendix E to the 2016 Fact Sheet, the final water quality-based TP effluent limits in the permit ensure compliance with the State of Idaho’s narrative criterion for nutrients at the edges of the authorized mixing zones, although they do not ensure compliance with such criteria at the point of discharge. Thus, it is not unexpected that samples taken near the point of discharge and within the authorized mixing zone would show elevated TP concentrations. TP results from the Pend Oreille River downstream from this point, at the “Pend Oreille River Channel” station⁶, and upstream from the discharge, in Lake Pend Oreille at City Beach,⁷ are generally below 0.012 mg/L.

Even though the Pend Oreille River is no longer 303(d)-listed for TP, the EPA has nonetheless found that the City of Sandpoint’s discharge of TP has the reasonable potential to cause or contribute to excursions above Idaho’s narrative water quality criterion for excess nutrients and has established WQBELs for TP which ensure compliance with the State of Idaho’s narrative water quality criterion for nutrients at the edges of the authorized mixing zones. See Appendix E to the 2016 Fact Sheet.

Comment #1-18 (LPOW)

40 CFR §122.44(a)(1) requires that NPDES permits include applicable technology-based limitations and standards (“TBELs”).

Legal Standard

Clean Water Act Section 301 requires that NPDES permits “shall require application of” Best Available Technology (“BAT”) to reduce pollutant discharges to the maximum extent “technologically and economically achievable,” including “elimination of discharges of all pollutants” if it is achievable. 33 U.S.C. § 1311(b)(2)(A)(i); see also *id.* § 1362(6) (defining “pollutant” to include “heat”); *U.S. Steel Corp. v. Train*, 556 F.2d 822, 840 n.27 (7th Cir. 1977) (noting that Section 301(b) of the Act requires effluent limitations on thermal discharges). Federal regulations promulgated by U.S. EPA also require that “[t]echnology-based treatment requirements under Section 301(b) of the [Clean Water Act] represent the minimum level of control that *must be imposed*” in a NPDES permit. 40 C.F.R. § 125.3(a) (emphasis added); see also Mich. Admin. C. R 323.2189(2) (incorporating federal regulations). BAT is a stringent treatment standard that has been held to represent “a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges.” *EPA v. Nat’l Crushed Stone Ass’n*, 449 U.S. 64, 74 (1980).

Technology-based effluent limitations (“TBELs”) are a necessary minimum requirement for a permit “regardless of a discharge’s effect on water quality.” *Am. Petroleum Inst. v. EPA*, 661 F.2d 340, 344 (5th Cir. 1981); see also *PUD No. 1 Jefferson County v. Wash. Dep’t of Ecology*, 511 U.S. 700, 704 (1994) (state water quality standards are “supplementary” to required individual TBELs) (citing *EPA v. Calif. ex. rel. Water Res. Control Bd.*, 426 U.S. 200, 205 n.12 (1976)); *Hooker Chems. & Plastics Corp. v. Train*, 537

⁵ <http://www.lakependoreillewaterkeeper.org/sandpoint-wwo.html>

⁶ <http://www.lakependoreillewaterkeeper.org/po-river-channel.html>

⁷ <http://www.lakependoreillewaterkeeper.org/city-beach.html>

F.2d 620, 623 (2d Cir. 1976) (Clean Water Act “predicate[s] pollution control on the application of control technology on the plants themselves rather than on the measurement of water quality.”). Federal regulations require state permitting authorities to establish BAT effluent limits in individual NPDES permits on a case-by-case basis, using Best Professional Judgment (“BPJ”), “to the extent that EPA-promulgated effluent limitations are inapplicable.” 40 C.F.R. § 125.3(c)(2), (d)

Amendments to the federal Clean Water Act stand for the proposition that publicly owned wastewater treatment facilities – like the Sandpoint WWTP – have a baseline TBEL requirement of secondary treatment. Currently, the Sandpoint WWTP possesses and implements secondary treatment, and therefore there is in compliance with applicable TBEL requirements.

Response #1-18

The EPA agrees with the commenter that publicly owned treatment works must achieve effluent limits based on secondary treatment (Clean Water Act § 301(b)(1)(B), 40 CFR 133). The EPA also agrees with the commenter that the City of Sandpoint implements secondary treatment. The permit includes effluent limits based on secondary treatment, as explained in Appendix D to the 2016 Fact Sheet.

Because the permit includes effluent limits based on secondary treatment, it satisfies the applicable Clean Water Act requirements for technology-based effluent limits.

The Clean Water Act’s requirement for application of BAT is inapplicable to POTWs. Clean Water Act Section 301(b)(2)(A) reads, in relevant part, “(there shall be achieved)... effluent limitations for categories and classes of point sources, **other than publicly owned treatment works**, which shall require application of the best available technology economically achievable...” (emphasis added).

Comment #1-19

As a policy matter we strongly urge EPA to revise its draft permit and require further optimization that will reduce the concentrations of effluent discharges, specifically nutrient concentrations, from the Sandpoint POTW. In particular, we urge EPA to require the POTW to conduct an optimization treatment study during the first 2 years of the next permit term and then implement its findings within the following 3 years, all towards the goal of reducing nutrient discharges to the river. Optimization of the current treatment regime is necessary to prevent further deterioration of the river’s water quality and impairment of beneficial uses. Phosphorous reduction can be achieved by chemical precipitation, enhanced biological phosphorous removal filtration or a combination of these techniques. Depending on the methodology that is selected and implemented, it’s technologically possible to remove significantly more TP from the effluent stream than currently achieved, yet without movement to tertiary treatment or reverse osmosis.

We also urge the EPA to require the POTW to concurrently initiate a study that articulates options and technical plans for an upgraded treatment facility, including viable funding avenues, and whose construction would conceivably be required in the near future. As the population of the City continues to rise and subsequently filtration demand on the POTW, it’s inevitable that a new treatment facility, with advanced nutrient reduction capabilities, will be needed.

According to a study conducted by JUB Engineering in 2007 for the City of Sandpoint, “...the plant has adequate capacity to handle up to 2.5 mgd of average flow, but the high volume of I/I exceeds the plant’s biological capacity during extreme events. The plant is nearing the end of its useful life and is in

need of substantial improvements.” The EPA Fact Sheet also indicates that the design flow of the facility is 3.62 mgd according to the City’s operation and maintenance manual. The compounding factors of population growth, design flow limitation, lack of effective nutrient reduction technology and excessive levels of TP in the river necessitate a facility upgrade.

Requiring performance of these additional technological controls not only adheres to the Clean Water Act’s intent of using best available technology to ratchet down point source pollution to our waterways, but also represents a practical, forward-thinking benefit to the community of Sandpoint. As the community of Sandpoint continues to grow there will be increasing pressure on the POTW to treat effluent such that discharges do not impair or cause or contribute to impairment of the Pend Oreille River.

Drawing an analogy to the stormwater context, the importance of EPA requiring further implementation of technology-based pollution controls – including at minimum further optimization - at the POTW is particularly evident given the current 8,000+ resident population of Sandpoint. This figure approaches the threshold for implementation of a municipal separate storm sewer system permit (MS4) as best available science has proven, time and again, that populations reaching 10,000 residents often cause or contribute to local waterway pollution. Whereas in the stormwater context, the City of Sandpoint is likely discharging stormwater pollution containing sediment and nutrients that cause or contribute to the river and lake’s impairment, EPA should take the initiative now to require further optimization of the POTW’s facility and thus be proactive in addressing impairment in local waterways.

Thus here, for the Sandpoint facility, given a growing population, the practicability of implementing further technological controls, and the importance of protecting the fragile ecological balance in and designated uses of the Pend Oreille River, we urge EPA to require the additional technology-based pollution controls and/or plans described above in a final NPDES permit.

Response #1-19

As explained in the 2016 Fact Sheet at Page 9, the correct design flow of the POTW is 5.0 mgd, not 3.62 mgd.

The permit includes a facility planning requirement in Part II.D, which requires the City to develop a new or updated plan and schedule for continuing to maintain capacity and maintain compliance with effluent limits if the facility’s capacity is exceeded in terms of flow or BOD₅ or TSS influent loading. See also the 2016 Fact Sheet at Pages 15 – 16.

As explained in the response to comment #1-18, the applicable technology-based standard for POTWs is secondary treatment. The secondary treatment regulations (40 CFR 133) do not address nutrients, such as TP. Thus, the permit does not include technology-based controls for nutrients. The additional nutrient treatment studies requested by the commenter are not necessary to comply with the Clean Water Act’s technology-based requirements.

However, the EPA has determined that WQBELs are necessary for TP and the EPA has included such limits in the permit. See the 2016 Fact Sheet at Appendix E.

Comment #1-20 (LPOW)

40 CFR § 125.3(a) requires additional or more stringent effluent limitations and conditions, such as WQBELs, be imposed when TBELs are not sufficient to protect water quality. Further enunciating this

concept, § 122.44(d)(1)(i) provides that “[l]imitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level that will *cause*, have the *reasonable potential to cause*, or *contribute* to an excursion above any State water quality standard, including State narrative criteria for water quality.” [emphasis added].

Legal Standard

WQBELs help meet the CWA objective of restoring and maintaining the chemical, physical, and biological integrity of the nation’s waters and the goal of water quality that provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water (e.g. the fishable/swimmable goals of the CWA). WQBELs are designed to protect water quality by ensuring that water quality standards are met in the receiving water.

40 CFR § 122.44(d)(1) requires that permits include limits for all pollutants or parameters which are or may be discharged at levels which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including narrative criteria for water quality. Discharge must be stringent enough to ensure that water quality standards are met, and must be consistent with any applicable wasteload allocation.

The Final POTW Permit Needs Stronger WQBELs for TP to Protect the Pend Oreille River

The Sandpoint POTW discharges wastewater effluent to the Pend Oreille River, which is part of the Clark Fork/Pend Oreille watershed. The Pend Oreille River is protected by Idaho water quality standards for cold water aquatic life, primary contact recreation, and domestic water supply.⁸ Additionally, the Pend Oreille River is protected for industrial and agricultural water supply, wildlife habitats and aesthetics.⁹ As discussed above, LPOW has provided best available science, including narrative and numeric data, showing the river is failing to maintain its designated uses of cold water fisheries and primary contact recreation.

The draft permit would authorize a POTW discharge of 87 lbs/day (average monthly mass limit) and 112 lbs/day (average weekly mass limit). The average monthly mass limit and average weekly mass limit were calculated using a dilution factor that was based on a 43.5% mixing zone as opposed to a 25% mixing zone, which is standard. If wasteload allocation calculations were completed with a dilution factor based on a 25% mixing zone, then the average monthly mass limit and average weekly mass limit would be 50 lbs/day and 64 lbs/day respectively as opposed to 87 lbs/day and 112 lbs per day.

EPA’s own analysis to determine if TP discharges have the reasonable potential to cause or contribute to WQS violations (using a 25% mixing zone) demonstrated that concentrations of TP at the edge of the mixing zone are greater than the interpreted narrative TP criteria of 10 µg/L (12.5 µg/L). Indeed, coupled with the fact that effluent TP loading is approximately 16.2% of TP loading upstream, EPA concluded that TP discharge has the potential to cause or contribute to excursions above Idaho’s narrative water quality criterion for excess nutrients. It is undeniable that discharges of TP based on a 25% mixing zone will exceed 10 µg/L, and that – as shown above - ambient concentrations of TP in receiving water already exceed 10 µg/L.

⁸ See IDAPA 58.01.02.110.05.

⁹ See IDAPA 58.01.02.100.03.b and c, 100.04 and 100.5.

Response #1-20

This comment was addressed by changes made to in the revised draft permit. The revised draft permit includes more stringent WQBELs for TP than the 2014 draft permit, from June – September, when the river is most susceptible to the effects of nutrient discharges. This is also when the river is most likely to be used for contact recreation (although the designated beneficial uses of the Pend Oreille River are applicable year-round).

Although, similar to the TP limits proposed in the 2014 draft permit, the revised June – September TP limit is based on a mixing zone larger than 25% of the stream flow volume, it is also based on a more conservative stream flow statistic than was used to calculate the TP WQBELs proposed in the 2014 draft permit. Specifically, the June – September TP limit is based on a mixing zone encompassing 47% of the 30-day, 10-year low flow rate of the Pend Oreille River, which is 6,640 CFS. The TP limits in the 2014 draft permit were based on a mixing zone encompassing 43.5% of the 10th percentile 365-day rolling harmonic mean flow of 10,259 CFS. The revised June – September TP mixing zone is equivalent to a mixing zone encompassing 30% of the stream flow used to calculate effluent limits for TP in the 2014 draft permit.

Comment #1-21 (LPOW)

Importantly, the draft permit would authorize larger volumes of effluent. Previously, the facility was authorized to discharge 3 mgd. The draft permit authorizes an increase in design flow to 3.62 mgd, even though the City has been discharging at flows higher than the new proposed limit according to IDEQ's Water Quality Certification. Furthermore, the facility is requesting an even larger discharge capacity of 5 mgd. As previously discussed, the EPA Fact Sheet indicates that the design flow of the facility is 3.62 mgd according to the City's operation and maintenance manual.

Furthermore, while the draft permit presumes to limit discharge volumes to 3.62 mgd, limitations on flow are not specified in Table 1, Effluent Limitations and Monitoring Requirements. We therefore request that the EPA specify the maximum daily limit in Table 1 alongside applicable effluent limits.

Response #1-21

As explained in the 2016 Fact Sheet at Page 9, the correct design flow of the POTW is 5.0 mgd, not 3.62 mgd.

Although the permit does not include an effluent limit for flow, the permit does include effluent limits for mass for all pollutants that can be appropriately expressed in terms of mass. The mass limits are calculated based on the design flow of the POTW, consistent with 40 CFR 122.45(b). Although the permit does not prohibit flows in excess of the design flow, the mass limits restrict the total loading of BOD₅, TSS, chlorine, mercury, and TP that the City may discharge. Since the mass limits are calculated based on the design flow (except for mercury, for which mass limits are calculated based on the previously-permitted flow of 3.0 mgd) if the discharge flow exceeds the design flow, the City would need to proportionately reduce its effluent concentrations of the limited pollutants in order to maintain compliance with the mass limits.

The permit also includes a facility planning requirement in Part II.D, which requires the City to develop a new or updated plan and schedule for continuing to maintain capacity and maintain compliance with

effluent limits if the facility's capacity is exceeded in terms of flow or BOD₅ or TSS influent loading. See also the 2016 Fact Sheet at Pages 15 – 16.

Comment #1-22 (LPOW)

The proposed TP WQBEL for the Pend Oreille River is insufficient to ensure that water quality standards downstream of the discharge will be protected because the permit does not account for a safety factor, contributions from other point and nonpoint sources.

Likewise, the draft permit does not model or account for TP discharges to the river below the discharge point. The river below the POTW receives TP loading from other point and nonpoint sources including but not limited to effluent from wastewater treatment facilities located in Dover and Priest River that discharge to the Pend Oreille River as well as stormwater discharges. These additional TP discharges compound the impact of TP discharges from the POTW, particularly in near-shore areas.

Response #1-22

This comment was addressed by additional analysis performed in support of the revised draft permit and explained in the Appendix E to the 2016 Fact Sheet. The EPA used the CE-QUAL-W2 model to evaluate the cumulative effect of the City of Sandpoint's discharge, as authorized in the draft permit, as well as discharges from other point sources to the Pend Oreille River (the City of Priest River and the City of Dover). Modeling showed that the City of Sandpoint's discharge of TP, combined with the discharges from other point sources to the Pend Oreille River, would not cause violations of the State of Idaho's water quality criteria for DO or pH, and that periphyton accumulations and water column chlorophyll a concentrations are below nuisance thresholds (Cope 2015).

Although the EPA's regulations for total maximum daily loads (TMDLs) require a margin of safety (40 CFR 130.7(c)(1)), there is no such requirement for WQBELs calculated for a specific NPDES permit.

Comment #1-23 (LPOW)

There is sufficient narrative and numeric data and science showing the Pend Oreille River is unable to meet, at minimum, its recreational contact and cold water aquatic life designated uses, and therefore is impaired and requires a TMDL. As EPA recognizes in its Fact Sheet, when a waterway does not possess a TMDL, permits can still contain Wasteload Allocations (WLAs) for specific point source dischargers. In turn, EPA has given the Sandpoint POTW a WLA.

However, the WLA for the POTW would sanction excessive loading based on, as discussed above, an expanded mixing zone, and therefore is inappropriate and must be revised. Indeed, the proposed TP WQBEL for the Pend Oreille River is insufficient to ensure that water quality standards downstream of the discharge will be protected because the permit implicitly assumes that TP concentrations in the main channel are an appropriate indicator of acceptable TP concentrations constituting adequate protection of water quality standards.

Rather, the permit should possess a TP WLA of *less than 87 lbs/day* (as suggested by the calculation above) because its designated uses, particularly contact recreation and cold water aquatic life, are tied specifically to near-shore use, not main channel river use. Near-shore water below the POTW discharge circulates and dilutes less than in the main channel of the river, meaning it is more sensitive to TP concentrations, and therefore requires a more stringent effluent limit to protect its designated uses. The draft permit's proposed TP WQBEL is thus arbitrary, on one hand, because there is zero explanation of

how TP dischargers from the POTW – in combination with other sources of TP in the river – will not violate water quality standards in the near-shore area.

Further, the POTW's TP concentrations from discharges bioaccumulate in receiving water, with the potential to become much more potent in shallower near-shore water with less dilution capacity. The studies shown in IDEQ's Water Quality Certification prove that the effluent plume from the POTW is significant and far greater than any allowable mixing zone. Although the permit's documentation notes this fact, it does not then take the logical step in applying the near-shore's diminished capacity to dilute TP and require more stringent effluent limitations. Instead, it applies inappropriately lax WQBELs; this decision is arbitrary and capricious. EPA cannot sanction unabated pollution that causes or contributes to persistent violations of water quality standards in the river beyond the mixing zone.

Response #1-23

As stated by the commenter, even though the Pend Oreille River is no longer 303(d)-listed for TP, the EPA has nonetheless found that the City of Sandpoint's discharge of TP has the reasonable potential to cause or contribute to excursions above Idaho's narrative water quality criterion for excess nutrients and has established WQBELs for TP. As explained in the response to comment #1-17, the State of Idaho's decision to de-list the Pend Oreille River for TP, and the EPA's decision to approve this de-listing, are beyond the scope of this permitting action.

The TP limits in the permit protect the entire Pend Oreille River, not just the main channel. The EPA's ecoregional nutrient criterion of 10 µg/L, which was used to interpret the State of Idaho's narrative criterion for excess nutrients for this permit, applies to shallow streams as well as deep rivers. As explained in Appendix E to the 2016 fact sheet, the TP effluent limits will ensure compliance with this criterion at the edges of the authorized mixing zones.

Regarding other sources of TP to the river, as explained in Appendix E to the 2016 Fact Sheet, modeling of the river using the CE-QUAL-W2 model showed that the City of Sandpoint's discharge of phosphorus, combined with the discharges from other point sources to the Pend Oreille River (the City of Priest River and the City of Dover), would not cause violations of the State of Idaho's water quality criteria for DO or pH, and that periphyton accumulations and water column chlorophyll a concentrations are below nuisance thresholds (Cope 2015).

Comment #1-24 (LPOW)

The draft permit incorrectly calculates ultimate mass limits for TP. The permit should express the TP WQBEL in terms of concentration, not mass. The draft permit incorrectly assumes that, because TP is a nutrient that affects impacts on water over long-distances, and because its mixing zone calculations provide more than 100-fold dilution, that mass concentrations alone are sufficient. This conclusion is arbitrary and capricious and, for the reasons described, the proposed WQBEL of 87 lb/day of TP is insufficient to ensure discharges from the POTW will not cause or contribute to violations of water quality standards.

Response #1-24

In general, 40 CFR 122.45(f)(1) states that NPDES permits shall have limitations, standards or prohibitions expressed in terms of mass. According to 40 CFR 122.45(f)(2), "pollutants limited in terms of mass additionally *may* be limited in terms of other units of measurement, and the permit shall

require the permittee to comply with both limitations” (emphasis added). Thus, in general, pollutants must be limited in terms of mass, and limits in terms of other units of measurement, including concentration, are discretionary.

As stated in the 2014 Fact Sheet at Page E-7 and the 2016 Fact Sheet at Page E-8, when determining how to express effluent limits for TP, the EPA followed the guidance in Section 5.7.1 of the *Technical Support Document for Water Quality-based Toxics Control*, (hereinafter TSD) which states, in relevant part, “mass-based effluent limits alone may not assure attainment of water quality standards in waters with low dilution. In these waters, the quantity of effluent discharged has a strong effect on the instream dilution and therefore upon the RWC. At the extreme case of a stream that is 100 percent effluent, it is the effluent concentration rather than the effluent mass discharge that dictates the instream concentration. Therefore, *EPA recommends that permit limits on both mass and concentration be specified for effluents discharging into waters with less than 100 fold dilution to ensure attainment of water quality standards*” (emphasis added). As stated in Section 6.1.3 of the *U.S. Environmental Protection Agency NPDES Permit Writers’ Manual*, the procedures in the TSD “were developed specifically to address toxic pollutants but have been appropriately used to address a number of conventional and nonconventional pollutants as well.” This particular recommendation is applicable to all types of pollutants, since it concerns the physical mixing of the discharge and the resulting influence of the effluent concentration upon the receiving water concentration, as opposed to the effects of any particular pollutant upon the receiving water.

In this case, not only do the relatively large mixing zones authorized for TP provide more than 100-fold dilution, but the smaller mixing zones authorized for chronic water quality criteria for toxic pollutants and for ammonia, which encompass $\leq 25\%$ of the appropriate critical stream flows, provide more than 100-fold dilution as well. See the 2016 Fact Sheet at Table C-3, on Page C-3.

Thus, the TSD’s recommendation for both mass and concentration limits for effluents with less than 100 fold dilution is inapplicable to this discharge. The EPA’s decision to state the TP limits exclusively in terms of mass was properly based on the recommendations of the TSD and is consistent with federal regulations at 40 CFR 122.45(f).

Comment #1-25 (LPOW)

In its Water Quality Certification, IDEQ explains that it is proposing to authorize a 43.5% mixing zone as opposed to a 25% mixing zone for TP. EPA’s Fact Sheet admits that, even with its generous effluent limits and receiving water criterion, projected concentration of TP at the edge of a 25% mixing zone will exceed its proposed limits (12.5 $\mu\text{g/L}$ vs 10 $\mu\text{g/L}$). Yet instead of, accordingly, concluding the POTW must possess a more stringent WQBEL, the permit creates proposed effluent limits based on a larger mixing zone to justify not further restricting TP effluent concentrations. This logic is self-defeating and arbitrary: the only way decision-makers can rationalize the proposed WQBEL for the POTW is by creating an exorbitant, unreasonably large mixing zone constituting 43.5% of the flow of the river.

A mixing zone study was conducted by IDEQ to determine whether such a mixing zone would comply with applicable rules. We find it troubling that the study unequivocally found that even authorizing a 43.5% mixing zone would violate water quality standards, yet the permit still reflects this exorbitant mixing zone. On the basis of the study alone, the 43.5% mixing zone is arbitrary and capricious. The 43.5% mixing zone is also arbitrary and capricious because, during low-flows, the existing mixing zone

creates a significant effluent plume that spreads across the river rather than moving rapidly downstream, and therefore by its plain language will cause or contribute to violating receiving water quality standards. In fact, the IDAPA prohibits such expansive mixing zones undoubtedly because they do not adequately protect receiving water quality.¹⁰

According to the IDEQ, these conditions are contrary to the WQS mixing zone rules (IDAPA 58.01.02.060). Yet IDEQ attempts to then rationalize the permissibility of a larger mixing zone by referencing the river's previous delisting from the Integrated Report in 2010. However, a larger mixing zone will, in turn, encompass more of the river's breadth in violation of IDAPA rules. Thus the proposed expansion of the POTW's mixing zone, like the Permit's WQBEL for TP, lacks supporting science, logic, or law and is arbitrary and capricious.

Furthermore, the agencies' reliance on the River's previous delisting as evidence that sanctioning increased pollution is acceptable is counterintuitive as IDEQ itself states that studies indicate that the Pend Oreille River is close to reaching its assimilative capacity for phosphorous and the previous delisting action was a questionable decision at best. Likewise, the proposed mixing zone is arbitrary and capricious because it is predicated on the unproven assumption that beneficial uses will be protected by 10 µg/L criterion, where that limit does not account for the difference in more sensitive designated uses of the River in near-shore areas, downstream pollutant loading, and best available sampling data. Last, the proposed mixing zone is arbitrary and capricious because it assumes a fact - that the POTW's proposed effluent limit for TP is protective - with no evidence in support.

Indeed, this post-hoc rationalization is particularly suspect logically and legally. Here, the draft permit contemplates conducting studies necessary to justify the proposed effluent limit while it sanctions discharge concentrations of TP that exceed the interpreted narrative criteria of 10 µg/L of TP. IDEQ cannot rely on future actions of the permittee and unknown science to justify its newly expanded mixing zone and EPA's lax TP limits because, meanwhile, both will cause or contribute to violations of water quality standards, an action Idaho and federal law prohibit. As discussed above, protecting designated uses in receiving waters necessitates more representative, stringent, standards. Likewise, it is just as likely that the expanded mixing zone - which in essence represents unabated TP pollution arising from unacceptably high TP discharges by the POTW- will cause or contribute to degrading beneficial uses as it will protect them.

Response #1-25

As explained in the 2016 Fact Sheet and in the Draft §401 Water Quality Certification dated February 23, 2016, the revised draft permit does not propose a 43.5% mixing zone for TP. The authorized mixing zones are 47% of the stream flow from June - September and 60% of the stream flow from October - May. However, it should be noted that the water quality-based analysis for the revised draft permit used smaller stream flows and a greater effluent flow than the 2014 draft permit. The stream flows used for TP were 30-day, 10-year low flows (30Q10) and were equal to 6,640 CFS from June - September and 8,260 CFS from October - May, and the effluent flow was set equal to 5.0 mgd. The water quality-based analysis for TP in the 2014 draft permit used a stream flow of 10,259 CFS, and the

¹⁰ In the certification's discussion of CORMIX modeling of TP discharges from the POTW, under all scenarios - including the ultimately proposed 87 lbs/day WQBEL, the TP mixing zone from the POTW will at minimum exceed 25% of the stream width and will definitely exceed 25% of the volume of the river in violation of in violation of IDAPA 58.01.02.060 *et seq.*

effluent flow was set equal to 3.62 mgd. Thus the authorized mixing zones for TP actually afford less dilution than proposed in the 2014 draft permit (404.4:1 from June – September and 641.6:1 from October – May instead of 798.4:1 year-round). The revised June – September TP mixing zone is equivalent to a mixing zone encompassing 30% of the stream flow used to calculate effluent limits for TP in the 2014 draft permit.

The fact that the authorized mixing zones use more than 25% of the stream flow is not a violation of Idaho's water quality standards. Idaho's mixing zone policy states that, "The Department may authorize a mixing zone that varies from the limits in Subsection 060.01.h. if it is established that...ii. A larger mixing zone is needed by the discharger and does not cause an unreasonable interference with, or danger to, beneficial uses as described in Subsection 060.01.d., and the mixing zone meets the other requirements set forth in Section 060. The discharger shall provide to the Department an analysis that demonstrates a larger mixing zone is needed given siting, technological, and managerial options." As explained in IDEQ's 401 certification, IDEQ has determined that a larger mixing zone is necessary in this case.

The State of Idaho's decision to de-list the Pend Oreille River for TP, and the EPA's decision to approve this de-listing, are beyond the scope of this permitting action. See also response to comment #1-17.

[Comment #1-26 \(Sandpoint\)](#)

The Water Quality Certification uses mixing zone criteria typically associated with toxic effects to justify better mixing within the receiving water. It appears the model results suggest a shore-hugging plume with phosphorus concentrations exceeding water quality standards. This is an unnecessary application of toxic criteria as phosphorus has no human health or aquatic life criteria. The shore-hugging plume restriction of the model is specifically to allow, for example, fish passage along the shore line. The width restriction has a similar goal. As stated in the draft NPDES permit, phosphorus is a "far field" pollutant that exerts an impact upon water quality over long distances. It would seem the phosphorus would be well mixed into the receiving water within a fairly short distance, certainly by the constriction at Dover's Rocky Point.

[Response #1-26](#)

Although the Idaho water quality standards do not have a numeric water quality criterion TP, they do have a narrative water quality criterion for excess nutrients (IDAPA 58.01.02.200.06). As explained in the response to comment #2-5, below, the State of Idaho's mixing zone policy is applicable to the State's narrative water quality criterion for nutrients as well as to water quality criteria for toxic pollutants.

For the revised draft permit, the EPA employed both near-field (Cormix) and far-field (CE-QUAL-W2) modeling techniques to evaluate the impact of the discharge of phosphorus.

[Comment #1-27 \(Sandpoint\)](#)

In general, it is not necessary to use a model to estimate effects when the system you are attempting to model exists. In this case, the WWTP has been discharging nearly the same total phosphorus load for twenty years without a loss of beneficial use, which is the effect the model is attempting to show by an excessive concentration of phosphorus in too large of an area (mixing zone). In fact, an attempt was recently made to show a loss of beneficial use from aquatic growth due to excessive phosphorus in the river (303d listed); however, the river was found to have full beneficial use after an evaluation of the

river (removed from 303d list). Therefore the river is currently not suffering a loss of beneficial use with respect to nutrients, and it is reasonable to expect that continuing to discharge phosphorus at nearly the same level would not contribute to a loss of beneficial use.

It is inappropriate to cause a significant change in the way Sandpoint treats and manages wastewater when a loss of beneficial use has not been demonstrated. We feel the proper course of action if a loss of beneficial use has been observed is to document the loss, update the integrated report, get the water body listed on the 303d list and proceed with the TMDL process. Otherwise Sandpoint will be overburdened with all the responsibility for managing phosphorus in the water body when shoreline property owners, lake users, resort operators and other sources need to share the burden, if a burden exists.

If the water body segment is listed on the 303 d list and phosphorus is identified as a pollutant of concern, an effort should be made to study phosphorus in the river rather than model the phosphorus.

There are no human health or aquatic life toxicity concerns for phosphorus in the water body; therefore, the only reason to define a mixing zone for phosphorus would be due to a loss of beneficial use due to aquatic growth (which has not been supported nor shown to exist). Causing a great expense without adequate justification is unnecessary and overly burdensome to Sandpoint. The water body is not impaired nor suffering a loss of beneficial use.

Response #1-27

It is not necessary to demonstrate that a loss of a beneficial use has occurred due to the discharge of a particular pollutant before establishing a water quality-based effluent limit for that pollutant. Federal regulations state that "Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality" (40 CFR 122.44(d)(1)(i)). It is necessary only to determine that the discharge has the reasonable potential to cause or contribute to excursions above water quality standards, including narrative criteria, in order to establish a water quality-based effluent limit.

As explained in Appendix E to both the 2014 and 2016 Fact Sheets, the EPA has determined that Sandpoint's discharge of TP has the reasonable potential to cause or contribute to excursions above Idaho's narrative water quality criterion for nutrients. Therefore, the permit includes WQBELs for phosphorus.

Comment #1-28 (Sandpoint)

The draft permit forces a large capital project to fix a questionable problem without any allowance or time to study and master plan the concern. We believe this violates DEQ's own rules against large capital projects that have not been master planned.

Alternatives that may be vetted in a master plan to address phosphorus issues in the river include, but are not limited to: removing phosphorus from the effluent, storing discharge during periods of low flow in the river, land application, and/or phosphorus pollution trading. For example, Sandpoint's long term plan is to move the WWTP away from the waterfront by constructing new wastewater treatment facilities with nutrient removal technology. The result would lower the phosphorus concentration

discharged into the lake and potentially mitigate concerns of a shore-hugging plume; however, exhausting capital to extend the outfall to address theoretical phosphorus issues in the river would delay the new facilities or negate the need and/or desire for a nutrient removal facility and therefore may not be the best solution.

If the proposed phosphorus limit is imposed, Sandpoint cannot reliably meet that limit without a longer averaging period and/or new facilities. If new facilities are required, a 10-year compliance schedule is necessary to study, fund, plan, and build the facilities necessary to meet permit conditions. A longer compliance schedule would be necessary to allow Sandpoint time to relocate the existing WWTP. Any effort exhausted at the current location would just delay the new state of the art facility.

Response #1-28

This comment was addressed by changes to the revised draft permit, which have been retained in the final permit. The final permit includes a compliance schedule for the new WQBELs for TP, for the June – September season. The compliance schedule allows time for planning.

No compliance schedule is authorized for the October – May TP limits, because the permittee can comply with these limits immediately upon the effective date of the final permit.

Comment #1-29 (Sandpoint)

Treatment plant monitoring performed six times annually for 15 years under Sandpoint's existing pretreatment requirements showed only two samples out of 66 samples above the required detection limit of 0.2 ug/L. Both of those detectable values were within the proposed maximum daily limit of 1.1 ug/L and the other 64 samples were arguably an order of magnitude below the maximum proposed limit (0.1 ug/L, half of the detection limit) and less than 20% of the proposed average monthly limit.

Continued monitoring of the influent and effluent with the proposed lower detection limits is reasonable to demonstrate the continued compliance from the treatment plant. Because of the two detectible sample results in 2008, developing and implementing a Mercury Minimization Plan within the City service area also seems reasonable to reduce the potential for the occasionally detectible discharge of mercury to the system from residential, commercial or industrial sources such as fluorescent lamp disposal, dental office amalgam, and mercury-containing equipment.

Response #1-29

Although the commenter is correct that historic effluent monitoring for mercury have shown few detections, it should be noted that the City of Sandpoint has used insensitive analytical methods for mercury. The 2002 permit required a method detection limit of 0.2 µg/L, for mercury, which is 16.6 times the chronic water column criterion for mercury which is in effect for Clean Water Act purposes in Idaho. EPA guidance now recommends the use of EPA Methods 245.7 or 1631E for analysis of mercury in water. These methods have quantitation levels of 0.005 µg/L and 0.0005 µg/L, respectively (EPA 2010). If sufficiently sensitive methods had been used, mercury may have been detected more frequently in the effluent.

The EPA agrees that a mercury minimization plan and continued monitoring for mercury, using sensitive analytical methods, are appropriate requirements.

Response to Comments Received during the Second Public Comment Period (April 19 – July 5, 2016)

Comment #2-1 (Sandpoint)

Our first concern is the timeline proposed for the necessary planning, funding, design, construction, and start-up of the improvements to meet new permit requirements. The current Facility Plan is ten years old and must be updated to reflect improvements made within our system since it was approved. The Facility Plan Update must also address the significantly more stringent requirements for TP, ammonia, and mercury proposed under this Second Draft Permit. We have received approval for Idaho Department of Environmental Quality (DEQ) matching funds to update the Facility Plan and will begin that two-year process in 2016. The Facility Plan will include significant public involvement to determine whether the existing treatment plant site can accommodate the preferred improvement alternatives. Imbedded within the decision for plant relocation is the level of desire and participation of other regional entities in a common treatment plant.

Once the Facility Plan Update is approved by DEQ, the difficult and extensive process for funding the treatment plant improvements must be achieved through voter approval or judicial confirmation. Funding approval often takes a year or more to achieve and may delay the improvement design process, since improvement alternatives are often dictated by available funding for those improvements. The improvement design process should be provided at least two years in order to allow for potential pilot testing of physical and biological process modifications. This is especially true at the existing plant site, where space constraints will significantly limit the available technologies that can be considered for ammonia and TP reduction.

Bidding and construction of the complex electrical, mechanical, and biological wastewater improvements being contemplated to meet new permit limits will require at least two years to complete. If the selected alternative from the Facility Plan involves relocating the existing treatment plant, the construction timeline should be extended by at least two years. The additional time is needed to account for the miles of pressure pipelines that must be constructed to connect the existing common influent location to the proposed location near Baldy Mountain Road and Great Northern Road, as well as return the reclaimed water to the river outfall. Once construction is complete at either location, the biological startup and optimization sequences will still require at least a year to be confidently established for permit compliance. The bottom line is that compliance with the Second Draft Permit limits would require at least eight years at the existing treatment plant site, and ten years if the Facility Plan Update process recommends relocating the treatment facility to the new site.

Interim milestones and progress reports may be needed to assure DEQ, U. S. Environmental Protection Agency (EPA), and the public that these efforts are being made to achieve final compliance as soon as practicable. A proposed Compliance Schedule Table is attached to this letter to more easily demonstrate the timelines necessary for each treatment plant location.

Response #2-1

The final permit does not include WQBELs for ammonia, thus, the commenter's concerns about the length of the compliance schedule to meet new WQBELs for ammonia are moot. IDEQ's final Clean Water Act Section 401 certification authorizes a compliance schedule to achieve compliance with the WQBELs for total phosphorus in effect from June – September. The compliance schedule authorized by

IDEQ provides two options. Option 1 allows a 5-year compliance schedule to upgrade the existing plant, and Option 2 allows a 10-year compliance schedule to construct a new treatment plant. The certification further requires the City to notify IDEQ and the EPA which option they will be following within two years of the effective date of the permit.

If the City chooses to construct a new treatment plant, the City may need to apply for and obtain a new NPDES permit or request and obtain a modification of their existing NPDES permit before discharging pollutants from the new plant.

The EPA cannot establish a compliance schedule longer than that authorized by IDEQ in the certification (40 CFR 124.53(e), 124.55(a)(2)).

Comment #2-2 (Sandpoint)

Now that the correct design flow for the existing facility has been established at 5.0 mgd, it is also vitally important to update the Fact Sheet to accurately describe the treatment process. The description under Section II should be similar to the description in the fact sheet accompanying the January 5, 2002, permit. The following text is similar to the 2002 fact sheet, reflects recent improvement at the treatment plant, and should be included in the Fact Sheet:

The following is a description of the Sandpoint wastewater treatment plant (WWTP) process (flows are reported as maximum instantaneous). Influent wastewater enters the headworks, which consist of a screen, then flows to an aerated grit basin. Following the grit basin, flows greater than 9.8 mgd can be diverted to the storm water clarifier, followed by chlorination in the chlorine contact basin prior to discharge. Flows less than 9.8 mgd pass through two primary clarifiers. Following primary clarification, flows greater than 5.0 mgd are diverted through a detention tank to the chlorine contact basin prior to discharge. Flows less than 5.0 mgd continue through secondary treatment. Secondary treatment consists of two parallel aeration basins with fine bubble aeration, followed by two parallel secondary clarifiers, the chlorine contact basin, and discharge to the Pend Oreille River via a 36-inch diameter outfall and diffuser. Flows diverted to the storm water clarifier and the detention tank are combined with effluent from secondary treatment prior to chlorination and discharge through outfall 001. Primary solids are anaerobically digested. Secondary solids are thickened via a rotating drum screen and anaerobically digested with the primary solids. Digested biosolids are land applied. Biogas is used to heat the digester and generate electricity.

Response #2-2

The Fact Sheets are final documents that explain the conditions in the corresponding draft permits (40 CFR 124.8). The Fact Sheets will not be edited.

Bypass, meaning “the intentional diversion of waste streams from any portion of a treatment facility,” (40 CFR 122.41(m)(1)(i)), is addressed in the permit at Part IV.F. This condition applies to all NPDES permits, and must be incorporated in all NPDES permits either expressly or by reference (40 CFR 122.41).

Comment #2-3 (Sandpoint)

During our workshop/meeting on June 10, 2016, EPA communicated to the City that the proposed summer TP limit was based on the current estimated summer TP load being discharged by Sandpoint

and that the load changed from the prior permit due to a “summertime” analysis. This method is consistent with Sandpoint's stated goal of limiting our TP discharge to current values and Idaho's anti-degradation rules. However, the methodology is not well documented in the permit or fact sheet; therefore, we request that the basis for the TP discharge (current load) be firmly established in the permit and that analyses undertaken by DEQ and EPA (mixing zone, CORMIX, CE-QUAL-W2, Ecoregion II) were used to confirm that the permitted load meets water quality standards. Our goal is to document that current loads were used to establish effluent limits, beneficial uses are being met, water quality goals are being met, and future analysis should not be needed to justify the load when the permit is renewed.

Response #2-3

As stated by the commenter, the TP limits in the 2016 draft permit represent the current TP loads that are discharged by the City of Sandpoint. However, City's historic TP loading is uncertain because the 2002 permit only requires effluent monitoring for TP concentration once per quarter, and the EPA does not have concurrent effluent flow data for the days on which effluent TP samples were taken. Thus, the EPA can only estimate the City's current TP loading.

The EPA estimated the current TP loading as follows. For each quarter from 2002 through 2014, the EPA estimated the effluent TP loading by pairing the TP concentration reported for a given quarter with the maximum of the three monthly average flow rates reported for the same quarter. The loads estimated for the 1st, 2nd, and 4th calendar quarters (January – March, April – June, and October – December, respectively) were used to estimate the TP loads for the “winter” season (October – May).

For the summer season (June – September), the EPA used the estimated loads for the 3rd quarter (July – September). The EPA also estimated effluent TP loads in June by pairing the 2nd quarter TP concentrations with the monthly average effluent flows reported for June.

The estimated average effluent TP loads are:

- 67.2 lb/day for the 1st, 2nd, and 4th quarters
- 50.5 lb/day for June
- 47.8 lb/day for the 3rd quarter.

Because effluent discharges are not constant, the permittee would not be able to consistently comply with an average monthly effluent limit set equal to the estimated average loading. Effluent limits should be set at the upper bound of acceptable performance and should consider the averaging period of the limit, the variability of the effluent, and the required sampling frequency (see the TSD at Section 5.2.2).

To calculate effluent limits that are consistent with the facility's current performance, including variability, as well as the required sampling frequency, the EPA used the procedures described in Appendix E of the TSD. The resulting average monthly effluent limits are:

- 96 lb/day for the 1st, 2nd, and 4th quarters
- 61 lb/day for June
- 61 lb/day for the 3rd quarter.

Comment #2-4 (Sandpoint)

The proposed ammonia limit in the Second Draft Permit was a surprise to the City, given the limited data collected. The field study to measure river direction and velocity seemed to be the primary evidence that triggered an ammonia limit. The staff report hinted at the limited applicability of the effort, yet the effort was heavily relied upon in the Draft Permit. Two points of concern needing to be addressed are:

1. The field study is not adequate to quantify the system sufficiently. The agencies will require the City to spend a great deal of money to meet permit limits triggered by the field study; therefore, a more rigorous effort should be undertaken to adequately characterize the range of conditions in the River.
2. If there is a northeast velocity vector near the outfall, it is unlikely that 100% of the effluent flows that direction. The potential dilution of the tortuous flow should be considered.

We propose the ammonia limit be postponed through the facility planning phase while additional data is obtained by the City; specifically, temperature and pH data around the outfall area both upstream and downstream, and ammonia data around the outfall (upstream, downstream and nearshore), so toxicity (winter and summer) can be estimated. Effluent flow and ammonia concentration data will be collected when the field sampling is done, so potential correlations might be identified. We would plan for a few sampling events on days similar to DEQ's field study (gusty East wind and boat traffic) to capture a "worst case" scenario. We will have this data available before any significant facilities are designed/constructed, so we can meet with DEQ and EPA to estimate any potential ammonia limit that may be expressed in the next permit (including seasonal options) and plan the appropriate facilities, or EPA can write the permit in a way to account for this additional data. The City would like the EPA to consider a seasonal ammonia limit if toxicity issues during the colder seasons are not evident upon analysis.

Response #2-4

The EPA has re-evaluated the need for ammonia limits. Specifically, the EPA has determined that pH data collected by LPOW, which were used to calculate the value of the water quality criteria for ammonia in the 2016 Fact Sheet, were not adequately precise for this purpose. LPOW used test strips that are only accurate to within 0.5 pH units.

When pH data from LPOW are excluded from the analysis, the EPA finds that the discharge does not have the reasonable potential to cause or contribute to excursions above water quality criteria for ammonia. Thus, the final permit does not include WQBELs for ammonia.

Comment #2-5 (Sandpoint)

Mixing zones for non-toxic compounds are not required under the Clean Water Act. It seems Idaho law is written in such a way to require mixing zones for all discharge constituents rather than allowing 100% of the flow to mix with non-toxic compounds. It will be our responsibility to work at the State level to verify that the methodology is consistent with the intent with which it was passed into law.

Response #2-5

Mixing zones are not "required under the Clean Water Act," for any pollutant. That is to say, States and Tribes are not obligated by the Clean Water Act to allow mixing zones at all. Federal regulations state that "States **may, at their discretion**, include in their State standards, policies generally affecting their application and implementation, **such as mixing zones**, low flows and variances. Such policies are

subject to EPA review and approval” (40 CFR 131.13, emphasis added). Section 5.1.1 of the EPA’s *Water Quality Standards Handbook* states that “The EPA recommends that states and authorized tribes adopt, at a minimum, a definitive statement into their WQS specifying whether the state or tribe intends to authorize mixing zones.” Thus, a State or Tribe could state in its water quality standards that no mixing zones may be authorized for any pollutants, toxic or otherwise.

The state of Idaho’s water quality standards clearly state that the Idaho Department of Environmental Quality may authorize mixing zones on a case-by-case basis (IDAPA 58.01.02.060). The Idaho water quality standards define a “mixing zone” as “a defined area or volume of the receiving water surrounding or adjacent to a wastewater discharge where the receiving water, as a result of the discharge, may not meet *all applicable water quality criteria or standards*. It is considered a place where wastewater mixes with receiving water and not as a place where effluents are treated” (IDAPA 58.01.02.010.61, emphasis added). The State of Idaho’s mixing zone policy states that “*All water quality criteria* must be met at the boundary of any mixing zone under its design conditions” (IDAPA 58.01.02.060.01.b, emphasis added).

The phrases “all water quality criteria” (in IDAPA 58.01.02.060.01.b) and “all applicable water quality criteria or standards” (in IDAPA 58.01.02.010.61) include the State of Idaho’s narrative water quality criterion for nutrients, which is the basis for the TP limits in the permit. Nothing in federal regulations, the *Water Quality Standards Handbook*, or the State of Idaho’s mixing policy states that mixing zones should be authorized exclusively for toxic pollutants.

Comment #2-6 (Sandpoint)

The January 28, 2015, letter comments to EPA remain valid today: Fish tissue sampling is supposed to be conducted by responsible states and tribes at least every five years under EPA (and DEQ) guidance. It is not reasonable or necessary to shift this responsibility to Sandpoint based on existing data.

1. Mercury monitoring requirements in the Pend Oreille River are not reasonable because they are proposed based on upstream fish tissue methyl-mercury concentrations in Lake Pend Oreille. DEQ acknowledges that methylation of mercury in the lake environment is very different than in the river environment where Sandpoint discharges. Those upstream sources and processes are not the responsibility of, nor can they be reduced or eliminated by, Sandpoint discharge or monitoring proposed in this Second Draft Permit. In fact, Pend Oreille River fish tissue may very well meet state and federal requirements. This is directly supported by the downstream fish tissue sampling in the river, where only a single sample out of 12 exceeded DEQ and EPA standards of 0.3 mg/kg and, at 0.492 mg/kg; it was within Washington's standards. We strenuously reassert that the fish tissue sampling requirements should be removed because they are not consistent with either the treatment plant monitoring data that has been occurring under the current permit or the downstream fish tissue sampling performed by the State of Washington, EPA, and the Kalispel Tribe.
2. The method detection limit required in Sandpoint's current permit was higher than desirable for DEQ's and EPA's current concerns, because there was no indication of a mercury concern at the time. Although Sandpoint detected mercury twice out of 66 samples, both detections occurred within a week of each other, which indicates a likelihood of sampling or laboratory error or a temporary excursion from the influent. Although both reported values are within the proposed

permit limits today, they do not provide an adequate representation of actual mercury discharge potential from the Sandpoint WWTP. Therefore, the first step proposed in the Second Draft Permit is appropriate for Sandpoint to collect monthly effluent data using the lower detection limit (proposed almost 1,000 times lower than the current permit). This additional data will allow EPA to recalculate whether Sandpoint has a reasonable potential to exceed the water quality concentration at the edge of the mixing zone based upon reported laboratory values. At the same time, the proposed permit requires the City to develop and implement a Mercury Minimization Plan (MMP). The MMP will educate sewer system users about the sources of mercury within their homes and businesses, along with the dangers of disposing of mercury down the drain. It will also provide information for proper disposal locations. The MMP and improved sampling methodology is reasonable and will provide the agencies and the public reasonable assurance that Sandpoint is protective of receiving water quality for mercury.

3. The proposed permit requirements are a costly burden for Sandpoint. In addition, the fish tissue sampling likely cannot be undertaken without highly specialized consulting expertise and/or agency personnel allowed to obtain fish for sampling. For instance, the City of Boise has employed the U.S. Geological Survey (USGS) for sampling and fish tissue analysis and received 40% cooperative funding for their efforts. Boise and the surrounding communities obviously have significantly more extensive community resources (almost an order of magnitude larger) and discharge into a river that is almost an order of magnitude smaller. Similarly, PCB sampling for fish in the Spokane River has not been forced onto the Idaho or Washington dischargers. The sampling is conducted by agency personnel consistent with DEQ and EPA existing guidance for such sampling.

In summary, Sandpoint should not be burdened with the State and Federal fish sampling programs based on upstream fish tissue concerns when downstream fish tissue concentration do not exceed standards. Under the proposed permit, Sandpoint will be sampling at a frequency and laboratory minimum value that will provide the agencies sufficient data to more accurately develop mercury limits to protect Pend Oreille River water quality and beneficial uses. In addition, Sandpoint will be reducing the potential for mercury contamination by educating its citizens and providing resources for proper disposal of mercury-containing products like fluorescent light bulbs.

Response 2-6:

As explained in the response to comment #1-3, in the final permit, the EPA has addressed concerns about the burden of the fish tissue monitoring requirements by making fish tissue monitoring conditional.

The EPA disagrees that the two detections of mercury in the effluent were likely to be sampling or laboratory errors. The results of influent samples taken during the week that mercury was detected in the effluent (November 2 – 8, 2008) were about 5 times higher than the effluent (Van Dyk 2009). This suggests that there was, in fact, a discharge of mercury to the treatment plant (and that the treatment plant removed about 80% of the influent mercury).

Comment #2-7 (Sandpoint)

Polychlorinated biphenyl concentrations in the Pend Oreille River system are largely unknown. However, the Ponderay Newsprint Company's paper mill downstream from Sandpoint was required to

obtain river water quality and effluent data for their National Pollutant Discharge Elimination System (NPDES) permit (WDOE, 2012, Fact Sheet for NPDES Permit WA-0045628). The two river sample results were below the detection limits of 50 pg/L and indicate that the river meets both Idaho and Washington water quality standards. Therefore, Sandpoint should not be required to perform monitoring for a water body that apparently meets water quality standards.

Response #2-7

The monitoring requirements for PCB congeners, including the receiving water monitoring requirements, are explained in the 2014 Fact Sheet at Page 16. The receiving water monitoring requirements were reduced in the revised draft permit, as explained in the 2016 Fact Sheet at Pages 14 and 15.

The EPA disagrees that the Pend Oreille River “apparently meets water quality standards” for PCBs in the State of Washington. Three segments of the Pend Oreille River in Washington are listed as impaired for PCBs, and sampling performed by the Kalispel Tribe and the Washington Department of Ecology in 2011 and 2012 found concentrations of PCBs in several species of fish that exceeded the State’s “fish tissue equivalent concentration” of 5.3 ppb, which is the concentration of PCBs in edible fish tissue that equated to Washington’s PCB water quality criterion for the protection of human health (170 pg/L), which was in effect under the National Toxics Rule at the time the this fish tissue monitoring was performed (Seiders et al. 2014).

In addition, on November 28, 2016, the EPA promulgated for the State of Washington a water quality criterion of 7 pg/L for PCBs (81 FR 85431), which is a 96% reduction from the prior criterion.

Comment #2-8 (Sandpoint)

River sampling required as part of this permit should be adjusted to reflect the fact that the river may be unpredictably inaccessible due to ice during the months of December, January, and February. In addition, at more than a mile wide and with the nearest year-round boat launch about 10 miles away, obtaining river samples in low/fluctuating water periods from November through March is expensive, time consuming, and/or hazardous for treatment plant owners and operators. It would be safer and more reliable to provide Sandpoint with flexibility to collect the required number of samples over several years, while avoiding dangerous and very difficult river conditions for collecting those samples.

Response #2-8

With the exception of monitoring for mercury in fish tissue, all of the receiving water monitoring required by the permit is required upstream of the discharge. See the permit at Table 3.

Upstream samples can be taken from the US Highway 95 bridge, which will simplify access to the receiving water relative to sampling by boat. However, the EPA understands that the Pend Oreille River may freeze in the winter, and the pedestrian portion of the US Highway 95 bridge may be hazardous in the winter, e.g., due to plowed snow from the vehicle lanes. Thus, the EPA has changed the sampling schedule for total mercury, conductivity, dissolved copper, dissolved organic carbon, dissolved lead, total ammonia as N, temperature, pH, and total hardness in the receiving water from once per month during the final full calendar year of the permit term to quarterly during the final three full calendar years of the permit term. The final permit also allows sampling for these parameters to be discontinued after collecting at least 12 samples spaced at least 1 month apart. This will ensure that the same

number of samples (12) are collected during the term of the permit as the schedule proposed in the draft permit, but will give the permittee more flexibility to avoid hazardous conditions.

The draft permit also stated that sites must be selected so as to provide spatial integration across the width of the receiving water. This language had been carried over from the 2002 permit (see Page 6). This language is vague and inconsistent with the draft permit's requirement to use grab samples for the receiving water (which was also carried over from the 2002 permit). Thus, the EPA has replaced this language, as described below.

For dissolved copper, dissolved organic carbon, dissolved lead, total ammonia as N, and total hardness, the final permit requires the permittee to analyze a discharge-weighted composite of at least four samples taken across the width of the river. Increments must be chosen using the equal discharge increment method described in Section 4.1.3 of the *USGS National Field Manual for the Collection of Water Quality Data* (USGS 2015). Samples need not be isokinetic. If the permittee demonstrates and documents that the cross-section is well-mixed, one sample may be taken at the centroid of flow. Only one analysis is required.

For temperature and pH, which cannot be composited, and for conductivity, a minimum of four in-situ measurements must be taken across the width of the river. Increments must be chosen using the equal discharge increment method described in Section 4.1.3 of the *USGS National Field Manual for the Collection of Water Quality Data*. If the permittee demonstrates and documents that the cross-section is well-mixed, one in-situ measurement be taken at the centroid of flow. Measurements must be taken from the photic zone. In-situ measurement is the recommended method of collecting data for conductivity, temperature and pH in Section 3.3.4 of the State of Idaho's *Beneficial Use Reconnaissance Program Field Manual for Streams* (IDEQ 2016).

For total mercury and PCB congeners, at least one grab sample must be taken at the centroid of flow. Samples need not be isokinetic or depth-integrated. Only one grab sample is required for total mercury and PCB congeners, in order to minimize the potential for sample contamination.

Fish tissue monitoring for mercury is required downstream of the discharge, but it is required at most once every two years. Nothing in the permit requires fish tissue sampling to be performed from November through March.

Comment #2-9 (Kalispel Tribe)

The fact sheet states that the permit limit for mercury will preserve assimilative capacity for mercury in the river by applying the existing mercury discharge concentrations. When fish are already not safe to consume upstream and downstream of the discharge, it is clearly apparent that the assimilative capacity for mercury of the lake and river has already been exceeded. Applying a performance-based limit for mercury will not achieve compliance with water quality necessary to protect the health of people who eat fish from the river. A WQBEL should be derived and applied without delay.

Response #2-9

The mercury effluent limits in the permit are WQBELs, not performance-based effluent limits. The mercury effluent limits are derived from, and ensure compliance with, the Clean Water Act effective numeric acute and chronic water quality criteria for mercury as well as the State of Idaho's antidegradation policy. See the 2016 fact sheet at Table D-2, on Page D-7. As discussed on Pages D-6

and D-7 of the 2016 fact sheet, effluent limits for mercury based solely on the numeric criteria and the authorized mixing zones (shown in Table F-2 of the 2016 Fact Sheet) would be less stringent than the proposed effluent limits. In addition, the mass limits for mercury are calculated based on the previously-permitted design flow of 3 mgd as opposed to the current design flow of 5 mgd.

The EPA agrees that the discharge has the reasonable potential to cause or contribute to excursions above the State of Idaho's criterion for methylmercury in fish tissue, in addition to the Clean Water Act effective numeric acute and chronic water quality criteria for mercury. See the 2014 Fact Sheet at Pages 17-18.

A numeric WQBEL for mercury cannot be derived from the fish tissue criterion at this time, because it is not feasible to translate the fish tissue criterion to a water column concentration. Therefore, consistent with Section 7.5.2.1 of the EPA's *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion*, the permit requires the City to develop and implement a mercury minimization plan.

Comment #2-10 (Kalispel Tribe)

Dioxin monitoring should include all Dioxin-like compounds commonly evaluated for toxicity equivalents of Dioxin, not just 2,3,7,8 TCDD.

Response #2-10

The only dioxin compound for which water quality standards have been established by the State of Idaho, the State of Washington or the Kalispel Tribe of Indians is 2,3,7,8 TCDD. Section 308(a) of the Clean Water Act authorizes the EPA to establish monitoring requirements to "(develop) or (assist) in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance." Federal regulations state that, "when the permitting authority determines...that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the allowable ambient concentration of a State numeric criteria within a State water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant" (40 CFR 122.44(d)(1)(iii)). If a dioxin WQBEL were to be developed for the City of Sandpoint, it would be a WQBEL for 2,3,7,8 TCDD. Thus, pursuant to section 308(a) of the Clean Water Act, monitoring requirements for 2,3,7,8 TCDD are required in the permit.

The permit also requires effluent and receiving water monitoring for PCB congeners, including the dioxin-like PCB congeners.

Comment #2-11 (Kalispel Tribe)

Monitoring river and wastewater concentrations for PCB and Dioxin-like compounds using analytical methods that are not sensitive enough such as proposed in the permit should be substantiated by also monitoring fish tissue. This is needed to confirm that harmful concentrations of persistent pollutants such as PCB and Dioxin-like compounds are not accumulating excessively in fish living in the vicinity of, and downstream of the wastewater discharge.

Response #2-11

The permit requires the use of EPA Method 1668C for PCB congeners and EPA Method 1613B for 2,3,7,8 TCDD. These are the most sensitive methods available.

The water quality criteria for total PCBs and 2,3,7,8 TCDD for the State of Idaho, State of Washington, and the Kalispel Tribe of Indians are water column criteria. Unlike the State of Washington, the State of Idaho generally does not assess compliance with its water column water quality criteria using fish tissue. Therefore, it would not be appropriate for the EPA to require monitoring of PCB congeners or dioxin-like compounds in fish tissue, in this permit.

It should be noted that the permit requires fish tissue monitoring for mercury because the State of Idaho's methylmercury water quality criterion is a fish tissue criterion, and fish tissue monitoring is recommended by both State and EPA guidance for implementing this criterion.

Comment #2-12 (Kalispel Tribe)

The sensitivity of analytical methods used for PCB and Dioxin are inadequate, and if they are detected above the Method Detection Limits (MDL), then the pollutant is known to be present at levels at least as high as the MDL with 99% confidence. If detected concentrations are present, they are many fold higher than what is needed to prevent excessively contaminated fish and therefore is informative in its self. No monitoring should be dropped if PCB or Dioxin-like compounds are detected in the effluent.

Response #2-12

The permit requires the use of EPA Method 1668C for PCB congeners and EPA Method 1613B for 2,3,7,8 TCDD. These are the most sensitive methods available.

The permit language regarding analytical results less than detection or quantification limits (Parts I.B.7 and I.B.8) is consistent with EPA Region 10's policy regarding such results, which is based on Section 5.7.3 of the EPA's TSD. As explained in Section 5.7.3 of the TSD, quantitation at the MDL is not as precise as at the ML.

The conditional monitoring requirements for PCBs and dioxin are intended to address the need to characterize the effluent and (for PCBs) ambient concentrations of these pollutants, while recognizing that there is a significant cost associated with monitoring these pollutants, and that they may not be present at quantifiable concentrations. If the pollutants are not present at quantifiable concentrations, then, consistent with the EPA's policy on results below quantification limits, the EPA would not conclude that the discharge has the reasonable potential to cause or contribute to excursions above water quality standards. Thus, continued monitoring would not yield useful information and the monitoring should be discontinued.

Comment #2-13 (Kalispel Tribe)

The Sandpoint discharge is within an arm of Lake Pend Oreille that is an impoundment created by Albeni Falls Dam. It is incorrect to apply the EPA Ecoregion guidance for river TP to a discharge in a lake and then calculate an allowable TP load.

Response #2-13

As explained in the 2016 Fact Sheet at Pages E-1 and E-2, the 10 µg/L ecoregional criterion for rivers and streams is a reasonable interpretation of Idaho's narrative criterion for nutrients in this case.

As stated in the 2016 Fact Sheet at Page E-8, in addition to the mass balance using the ecoregional criterion, the EPA has also evaluated the cumulative impact of wastewater discharges the CE-QUAL-W2 model. Modeling showed that the City of Sandpoint's discharge of TP, as authorized by the permit,

combined with the discharges from other point sources to the Pend Oreille River (the City of Priest River and the City of Dover), would not cause violations of the State of Idaho's water quality criteria for DO or pH, and that periphyton accumulations and water column chlorophyll a concentrations are below nuisance thresholds (Cope 2015).

Comment #2-14 (Kalispel Tribe)

It is also important to control the TP load beginning before June to prevent degradation of downstream waters. Primary productivity responds rapidly to additional nutrients as soon as days begin to lengthen and waters warm. TP discharge limitations should begin in April, so they do not contribute a large pulse of primary productivity and degradation of river pH during lower-than-normal flows with rapidly warming river conditions.

Response #2-14

The permit includes WQBELs for TP for all times of the year. However, the limits for June – September are more stringent than the limits for October – May.

The limits proposed in the draft permit are adequately stringent to meet water quality standards. It is not necessary to establish more stringent limits for TP beginning in April. As stated in the 2016 Fact Sheet at Page E-8, the EPA has evaluated the cumulative impact of wastewater discharges the CE-QUAL-W2 model. Modeling showed that the City of Sandpoint's discharge of TP, as authorized by the permit, combined with the discharges from other point sources to the Pend Oreille River (the City of Priest River and the City of Dover), would not cause violations of the State of Idaho's water quality criteria for DO or pH, and that periphyton accumulations and water column chlorophyll a concentrations are below nuisance thresholds (Cope 2015).

Comment #2-15 (Kalispel Tribe)

It is not apparent in the information provided how the ammonia criterion was calculated in the mixing zone taking into account the effluent pH while deriving ammonia limits. The maximum permitted effluent pH limit should be consistent with the pH used to calculate the ammonia criteria at the edge of the mixing zone.

Response #2-15

The ammonia effluent limits proposed in the 2016 Draft Permit were based on ambient pH. The pH value used to calculate the proposed ammonia limits was 9.0 standard units. LPOW measured a pH of 9.0 standard units in the river near the City of Sandpoint outfall in June, July and August of 2013.

However, as stated in the response to comments 1-8 and 2-3, the EPA has determined that pH data collected by LPOW were not adequately precise for the purpose of calculating the value of the water quality criteria for ammonia. The EPA has re-calculated the value of the pH criteria using data collected by the Idaho Department of Environmental Quality, the Tri-State Water Quality Council and the City of Sandpoint, between 2002 and 2015. The 95th percentile ambient pH is 8.71 standard units.

When pH data from LPOW are excluded from the analysis, the EPA finds that the discharge does not have the reasonable potential to cause or contribute to excursions above water quality criteria for ammonia. Thus the final permit does not include WQBELs for ammonia.

The maximum effluent pH reported by the City of Sandpoint between 2010 and 2015 is 7.7 standard units. Because the maximum effluent pH of 7.7 standard units is less than the 95th percentile ambient pH of 8.71 standard units, and because the values of the ammonia criteria decrease with increasing pH, it is more conservative in this case to use the ambient pH (without considering the influence of the effluent pH) to establish the values of the ammonia criteria for the reasonable potential analysis.

Comment #2-16 (ICL)

It is not clear to us what the justification is for a TP mixing zone that utilizes greater than 25% of the receiving flow. Idaho's most recent mixing zone rule¹¹ provides for the following:

060. MIXING ZONE POLICY.

01. Mixing Zones for Point Source Discharges.

...

c. The size of mixing zone(s) and the concentration of pollutant(s) present shall be evaluated based on the permitted design flow. The Department shall not authorize a mixing zone that is determined to be larger than is necessary considering siting, technological, and managerial options available to the discharger. (4-11-15)

d. Mixing zones, individually or in combination with other mixing zones, shall not cause unreasonable interference with, or danger to, beneficial uses. Unreasonable interference with, or danger to, beneficial uses includes, but is not limited to, the following:

...

h. Mixing zones shall meet the following restrictions; provided, however, that the Department may authorize mixing zones that vary from the restrictions under the circumstances set forth in Subsection 060.01.i. below: (4-11-15)

i. For flowing waters: (4-11-15)

(1) The width of a mixing zone is not to exceed twenty-five percent (25%) of the stream width; and (4-11-15)

(2) The mixing zone shall not include more than twenty-five percent (25%) of the low flow design discharge conditions as set forth in Subsection 210.03.b. of these rules. (4-11-15)

...

i. The Department may authorize a mixing zone that varies from the limits in Subsection 060.01.h. if it is established that: (4-11-15)

...

¹¹ It is not clear to us that these rules have been approved by the EPA. As such, it is not appropriate for the DEQ to be utilizing them for the development of mixing zones in Idaho. Nor is it appropriate for the EPA to be incorporating these rules into an EPA NPDES permit.

ii. A larger mixing zone is needed by the discharger and does not cause an unreasonable interference with, or danger to, beneficial uses as described in Subsection 060.01.d., and the mixing zone meets the other requirements set forth in Section 060. The discharger shall provide to the Department an analysis that demonstrates a larger mixing zone is needed given siting, technological, and managerial options.

We interpret all of this to mean that the DEQ can, under certain circumstances, authorize a mixing zone larger than 25% of the receiving flow. However, doing so requires that the DEQ undertake significant analysis to justify this action.

Support documents included in DEQ's 401 Cert provide analysis of the proposed mixing zone. However, this analysis does not demonstrate that this larger mixing zone does not "cause an unreasonable interference with, or danger to, beneficial uses." On the contrary, the analysis demonstrates that the expanded mixing zone causes these impacts.

Further, DEQ's review concludes that the existing outfall is poorly located and discharges to slack water. This in turn hinders mixing. DEQ's rules direct that "The Department shall not authorize a mixing zone that is determined to be larger than is necessary considering siting, technological, and managerial options available to the discharger." DEQ seems to have failed to consider whether or not there are modifications that could be made to the outfall which would eliminate the need for a mixing zone that exceed 25%. No analysis of relocating the outfall is presented. As a result, the DEQ analysis fails to comply with the agency's own rules and fails to provide adequate water quality protections for the receiving water.

The lack of review discussed above makes it inappropriate for the DEQ or the EPA to authorize a mixing zone of the extreme size proposed in the 401 Cert and the draft NPDES permit. Absent additional review and justification, the agencies are precluded from utilizing a mixing zone that is greater than 25%.

[Response #2-16](#)

Refer to the response to comment #1-8.

[Comment #2-17 \(ICL\)](#)

As noted in our previous comments, we believe that this NPDES needs to incorporate discharge limits for temperature.

[Response #2-17](#)

Refer to the response to comment #1-5.

[Comment #2-18](#)

As noted in our previous comments, we believe that DEQ has erred in determining that the receiving water a Tier I water for aquatic life. We ask the agencies to review our prior comments and reconsider their conclusions.

Further, because this waterbody is a Tier II water for aquatic life, we do not agree with DEQ's determination that the increased TP discharges are appropriate at the level authorized. The proposed discharge limits would utilize greater than 10% of the remaining assimilative capacity of the receiving water. Indeed, it appears that the support materials provided as Appendix D in the 401 cert reach this same conclusion. As such, it appears that this permit will cause significant degradation.

Response #2-18

As explained in the response to comment numbers 1-6 and 1-7, IDEQ has properly identified the Pend Oreille River as a Tier I waterbody for aquatic life uses.

Although IDEQ provided only Tier I antidegradation protection for aquatic life uses, IDEQ provided Tier II antidegradation protection for recreation uses (see the draft certification dated February 23, 2016 at Page 2). Nutrients, including TP, are among the pollutants that IDEQ evaluated in its Tier II antidegradation review. IDEQ found that there would be no degradation of water quality as it relates to recreational beneficial uses. The prior permit has no effluent limits for TP, and the TP limits in the reissued permit ensure that the receiving water concentration of TP will be lower than that which could result from the maximum effluent concentration measured between June 2010 and August 2015 (see the draft certification dated February 23, 2016 at Appendix B).

Comment #2-19 (ICL)

The final TP limits that are proposed in this NPDES are far too lax, made ‘justifiable’ only by the extremely large mixing zone authorized by the permit and errors in determining the appropriate antidegradation tier for this waterbody. As discussed above, we believe that the agencies need to take certain steps that would decrease the size of the mixing zones – and correspondingly, the TP limits need to be reduced accordingly.

Response #2-19

As explained in this response to comments and in Appendix E to the 2016 fact sheet, the final TP limits in the permit ensure compliance with Idaho water quality standards. This is evidenced not only by compliance with the narrative criteria (interpreted using the EPA’s ecoregional criteria) at the edges of the authorized mixing zones, but also by the results of modeling the discharge with CE-QUAL-W2. As stated in the 2016 Fact Sheet at Page E-8, modeling showed that the City of Sandpoint’s discharge of TP, as authorized by the permit, combined with the discharges from other point sources to the Pend Oreille River (the City of Priest River and the City of Dover), would not cause violations of the State of Idaho’s water quality criteria for DO or pH, and that periphyton accumulations and water column chlorophyll a concentrations are below nuisance thresholds (Cope 2015).

As explained in the response to comment #2-18, IDEQ applied Tier II antidegradation protection to the City of Sandpoint’s discharge of TP and found that there would be no degradation of water quality.

Comment #2-20 (ICL)

While recognizing that it is the limits stated in the permit that govern discharges, we would still point out that the AWL for TP is stated in the Maximum Daily Limit column on page D-7 and D-8. The public often refers to the fact sheets for a permit when they have questions. And, since these materials are archived on the web, it might be worth correcting this error.

Response #2-20

The 2016 Fact Sheet is a final document that explains the conditions in the revised draft permit (40 CFR 124.8). The Fact Sheet will not be edited.

Comment #2-21 (LPOW)

The Pend Oreille River is an important waterbody adjacent to the City of Sandpoint, Idaho. Its designated uses are cold water aquatic life, domestic water supply, primary contact recreation, agricultural and industrial water supply, wildlife habitat and aesthetics. Of these uses, cold water aquatic life and primary contact recreation are the most sensitive and unique. The River is relied upon and used heavily by the local populace, fishermen, and seasonal vacationers; unfortunately, some effects of its use – and neglect – are becoming increasingly apparent.

The segment of the Pend Oreille River from Lake Pend Oreille to Priest River is listed as impaired for dissolved gas (nitrogen) supersaturation and temperature in DEQ's 2012 Integrated Report. The likely cause of dissolved gas supersaturation is the operation of Avista's upstream Cabinet Gorge Dam on the Clark Fork River. The likely cause of temperature impairment is the removal of riparian shade trees, unhealthy turbidity related to erosion and sedimentation, and excessive discharges of TSS from wastewater and stormwater runoff from impervious surfaces.

In 2008 DEQ listed the Pend Oreille River as impaired for TP on its Integrated Report. The agency made this decision based on data collected by the Tri-State Water Quality Council ("TSWQC") showing excessive levels of TP in the river. The EPA subsequently approved this report. In reevaluating this issue for its 2010 Integrated Report, DEQ shifted its reasoning and methods of data interpretation. Despite indications that TP concentrations were exceeding thresholds key to supporting beneficial uses, DEQ took exception to the previously accepted TSWQC data and found it to be insufficient. This finding was based on an alleged lack of quality assurance analysis and validity of comparing TP concentrations in the river to the Pend Oreille Lake Nearshore TMDL for TP.

DEQ performed its own analysis of TP concentrations in the Pend Oreille River during the 2009 field season. A total of 38 grab samples were collected from 10 locations from June through September. In that instance, DEQ ironically used the Pend Oreille Lake Nearshore TMDL secondary target of 0.012 mg/L (instantaneous concentration at any one location) as a benchmark for "exceedance" since Idaho does not possess numeric criteria for nutrient loading to waterways. According to DEQ's study, four samples exceeded the selected benchmark in certain locations. However, those sampling locations with exceedances were deemed "not representative of the Pend Oreille River" and therefore excluded from consideration as to whether the Pend Oreille River was in fact impaired.

The allegedly suspect locations included shoreline areas that are not flushed at the same rate as deeper portions of the river. Even discounting those near-shore samples, an additional four samples collected from areas that were considered representative of the river measured just shy or at the 0.012 mg/L benchmark. This is relevant as the totality of ambient, representative monitoring essentially showed the main channel of the river – and without question the near-shore areas of river – were at threshold limits of impairment in 2010.

Since 2010, data collected by Lake Pend Oreille Waterkeeper's Water Quality Monitoring Program (WQMP)¹² demonstrates TP impairment of the Pend Oreille River outside of the perceived mixing zone of Sandpoint's Wastewater Treatment Facility (WWTW) (Table 1). Bolded values indicate samples that exceeded 0.010 mg/L (10 µg/L), the interpreted narrative criteria for TP applicable in permitting here,

¹² 2012-2015 sampling data available online at: <http://www.lakependoreillewaterkeeper.org/lake-pend-oreille-wqm-interactive-map.html>

for the Sandpoint WWTF. Put another way, only 2 out of 19 samples exhibited concentrations of TP below 0.010 mg/L (10 µg/L), which is to say the vast majority of best available science consistently shows ambient river water quality is already exceeding benchmark levels that EPA and DEQ have deemed representative of impairment.

Table 2-1. TP data collected by the Lake Pend Oreille Waterkeeper Water Quality Monitoring Program

Total Phosphorus – Sandpoint WWTP (mg/L)				
	2012	2013	2014	2015
June	No data	0.306	0.0097	0.0592
July	0.0084	0.0184	0.021	0.0679
Aug.	0.037	0.0903	0.0564	0.0448
Sept.	0.0352	0.0287	0.0163	0.0136
Oct.	0.0232	0.778	0.0374	0.0191

In addition to the numeric sampling data showing existing impairment of the Pend Oreille River today, Lake Pend Oreille Waterkeeper has previously submitted narrative evidence of the Pend Oreille River’s impairment. Specifically, we submitted four photographs to DEQ as comments on the draft 2010 Integrated Report to show readily available evidence of the river’s failure to maintain its designated uses, and in turn to argue against the propriety of delisting of the Pend Oreille River. Those photographs contained the following description:

Shoreline photographs reveal visible sludge. The photographs show high levels of visible slime and other nuisance aquatic growths on the River. As evidenced in the pictures, the oxygen-demanding aquatic growths inhabit bays and shorelines that could otherwise be used for Primary Contact Recreation and scenic viewing. These growths inhibit the River’s designated beneficial uses because residents and visitors will not swim in these and other similar areas. It is therefore evident that high levels of TP are creating nuisance aquatic growths that impair the River’s beneficial use. Lake Pend Oreille Waterkeeper referred to DEQ’s 2009 TP monitoring results as well as their own TP monitoring results for three locations along the river.

Response #2-21

This comment is nearly identical to comment #1-17, which LPOW submitted during the first public comment period. Refer to the response to comment #1-17.

Comment #2-22 (LPOW)

40 CFR §122.44(a)(1) requires that NPDES permits include applicable technology-based limitations and standards (“TBELs”).

Legal Standard

Clean Water Act Section 301 requires that NPDES permits “shall require application of” Best Available Technology (“BAT”) to reduce pollutant discharges to the maximum extent “technologically and economically achievable,” including “elimination of discharges of all pollutants” if it is achievable. 33 U.S.C. § 1311(b)(2)(A)(i); see also id. § 1362(6) (defining “pollutant” to include “heat”); U.S. Steel Corp. v. Train, 556 F.2d 822, 840 n.27 (7th Cir. 1977) (noting that Section 301(b) of the Act requires effluent limitations on thermal discharges). Federal regulations promulgated by U.S. EPA also require that

“[t]echnology-based treatment requirements under Section 301(b) of the [Clean Water Act] represent the minimum level of control that *must be imposed*” in a NPDES permit. 40 C.F.R. § 125.3(a) (emphasis added); see also Mich. Admin. C. R 323.2189(2) (incorporating federal regulations). BAT is a stringent treatment standard that has been held to represent “a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges.” EPA v. Nat’l Crushed Stone Ass’n, 449 U.S. 64, 74 (1980).

Technology-based effluent limitations (“TBELs”) are a necessary minimum requirement for a permit “regardless of a discharge’s effect on water quality.” Am. Petroleum Inst. v. EPA, 661 F.2d 340, 344 (5th Cir. 1981); see also PUD No. 1 Jefferson County v. Wash. Dep’t of Ecology, 511 U.S. 700, 704 (1994) (state water quality standards are “supplementary” to required individual TBELs) (citing EPA v. Calif. ex. rel. Water Res. Control Bd., 426 U.S. 200, 205 n.12 (1976)); Hooker Chems. & Plastics Corp. v. Train, 537 F.2d 620, 623 (2d Cir. 1976) (Clean Water Act “predicate[s] pollution control on the application of control technology on the plants themselves rather than on the measurement of water quality.”). Federal regulations require state permitting authorities to establish BAT effluent limits in individual NPDES permits on a case-by-case basis, using Best Professional Judgment (“BPJ”), “to the extent that EPA- promulgated effluent limitations are inapplicable.” 40 C.F.R. § 125.3(c)(2), (d)

Amendments to the federal Clean Water Act stand for the proposition that publicly owned wastewater treatment facilities – like the Sandpoint WWTF – have a baseline TBEL requirement of secondary treatment. Currently, the Sandpoint WWTF possesses and implements secondary treatment, and therefore there is in compliance with applicable TBEL requirements.

Response #2-22

This comment is nearly identical to comment #1-18, which LPOW submitted during the first public comment period. Refer to the response to comment #1-18.

Comment #2-23

LPOW acknowledges the addition of compliance schedules to the revised draft permit, which solidifies the requirement of either on-site upgrades (5 year schedule) or the creation of a new treatment plant (10 year schedule). However, the allowance of a year after the effective date of the final permit for the City to notify EPA and DEQ of their preferred compliance option is excessive. Given that the interim effluent limits for phosphorous will cause or contribute to water quality standard (WQS) violations, allowing an entire year to decide which option is more palatable is unwarranted and should be reduced.

Drawing an analogy to the stormwater context, the importance of EPA requiring further implementation of technology-based pollution controls – including at minimum further optimization - at the POTW is particularly evident given the current 7,500+ resident population of Sandpoint. This figure approaches the threshold for implementation of a municipal separate storm sewer system permit (MS4) as best available science has proven, time and again, that populations reaching 10,000 residents often cause or contribute to local waterway pollution. Whereas in the stormwater context, the City of Sandpoint is likely discharging stormwater pollution containing sediment and nutrients that cause or contribute to the River’s impairment, a streamlined timetable to select a compliance schedule is needed to proactively address impairment to local waterways.

Furthermore, DEQ’s initial Water Quality Certification stated that the poor mixing conditions that currently exist could be improved upon by extending the outfall further into the main channel of the

River since the current position of the outfall discharges treated wastewater to a slack water location. There is no such suggestion or, more importantly, requirement in the revised certification. A combination of improved mixing and reduced effluent concentrations for phosphorous (as discussed below) would substantially reduce the potential to cause or contribute to WQS violations. If the City of Sandpoint decides to pursue upgrades at the existing POTW, then relocating the outfall should be included as part of the planned upgrades.

Response #2-23

The compliance schedules in the State of Idaho's final Clean Water Act Section 401 certification of this permit allows two years for the City to choose a preferred compliance schedule option. The EPA believes two years is a reasonable amount of time for Sandpoint to decide whether to comply with the final WQBELs for TP by upgrading the existing plant (Option 1) or by building a new treatment plant (Option 2).

The EPA does not have the authority to require the City to relocate its outfall. The water quality-based analysis performed for this permit is based on the outfall's current location and considers the mixing properties that exist at this location.

Comment #2-24 (LPOW)

40 CFR § 125.3(a) requires additional or more stringent effluent limitations and conditions, such as WQBELs, be imposed when TBELs are not sufficient to protect water quality. Further enunciating this concept, § 122.44(d)(1)(i) provides that "[l]imitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level that will *cause*, have the *reasonable potential to cause*, or *contribute* to an excursion above any State water quality standard, including State narrative criteria for water quality" [emphasis added].

Legal Standard

WQBELs help meet the CWA objective of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters and the goal of water quality that provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water (e.g. the fishable/swimmable goals of the CWA). WQBELs are designed to protect water quality by ensuring that water quality standards are met in the receiving water.

40 CFR § 122.44(d)(1) requires that permits include limits for all pollutants or parameters which are or may be discharged at levels which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including narrative criteria for water quality. Discharge must be stringent enough to ensure that water quality standards are met, and must be consistent with any applicable wasteload allocation.

The Final POTW Permit Needs Stronger WQBELs for TP to Protect the Pend Oreille River

The Sandpoint POTW discharges wastewater effluent to the Pend Oreille River, which is part of the Clark Fork/Pend Oreille watershed. The Pend Oreille River is protected by Idaho water quality standards for cold water aquatic life, primary contact recreation, and domestic water supply.¹³ Additionally, the Pend

¹³ See IDAPA 58.01.02.110.05.

Oreille River is protected for industrial and agricultural water supply, wildlife habitats and aesthetics.¹⁴ As discussed above, Lake Pend Oreille Waterkeeper has provided best available science, including narrative and numeric data, showing the river is failing to maintain its designated uses of cold water fisheries and primary contact recreation.

The revised draft permit would authorize a POTW interim and final seasonal discharges as follows:

- Interim June-September - 96 lbs/day (avg. monthly limit); 125 lbs/day (avg. weekly limit).
- Final June-September – 61 lbs/day (avg. monthly limit); 79 lbs/day (avg. weekly limit)
- October-May – 96 lbs/day (avg. monthly limit); 125 lbs/day avg. weekly limit).

The final average monthly mass limit and average weekly mass limit were calculated using a dilution factor that was based on a 47.2% mixing zone (June-September) and a 60% mixing zone (October-May) as opposed to a 25% mixing zone, which is outlined in the provisions of the Idaho WQS for mixing zones (IDAPA 58.01.02.060). If wasteload allocation calculations were completed with a dilution factor based on a 25% mixing zone, then the average monthly mass limit and average weekly mass limit would be 33.6 lbs/day and 43.4 lbs/day respectively as opposed to what is currently specified in the revised draft permit.

EPA's own analysis to determine if TP discharges have the reasonable potential to cause or contribute to WQS violations (using exceedingly large mixing zones authorized by DEQ) demonstrated that concentrations of TP at the edge of the mixing zone are greater than the interpreted narrative TP criteria of 10 µg/L (20.5 µg/L June-September; 15.6 µg/L October-May). Indeed, coupled with the fact that effluent TP loading is approximately 25% of TP loading upstream, EPA concluded that TP discharge has the potential to cause or contribute to excursions above Idaho's narrative water quality criterion for excess nutrients. It is undeniable that discharges of TP based on 47% and 60% mixing zones will exceed 10 µg/L, and that – as shown above - ambient concentrations of TP in receiving water already exceed 10 µg/L.

Response #2-24

As explained in Appendix E to the 2016 Fact Sheet, the final water quality-based TP effluent limits in the revised draft permit are derived from and ensure compliance with the State of Idaho's narrative water quality criterion for nutrients. That is to say, the final effluent limits will ensure that the TP concentration at the edges of the authorized mixing zones will not exceed 10 µg/L.

The commenter's statement that "concentrations at the edge of the mixing zone are greater than the interpreted narrative TP criteria of 10 µg/L (20.5 µg/L June-September; 15.6 µg/L October-May)" is based on the reasonable potential analysis in Appendix E to the 2016 Fact Sheet. In this analysis, the EPA calculated the concentrations of TP that would be observed at the edge of the mixing zone if Sandpoint discharged at the maximum reported effluent TP concentration of 5.33 mg/L and at its design flow of 5.0 mgd. A discharge of TP at this concentration and flow is equivalent to 222 lb/day, which is more than twice the least-stringent average monthly WQBEL in the permit (96 lb/day). Thus, the permit does not authorize discharges of TP at this level, and therefore the calculated edge-of-mixing zone TP

¹⁴ See IDAPA 58.01.02.100.03.b and c, 100.04 and 100.5.

concentrations referenced by the commenter will not occur if the permittee complies with the TP effluent limits in the revised permit.

Although, similar to the TP limits proposed in the 2014 draft permit, the revised June – September TP limit is based on a mixing zone larger than 25% of the stream flow volume, it is also based on a more conservative stream flow statistic. Specifically, the June – September TP limit is based on a mixing zone encompassing 47% of the 30-day, 10-year low flow rate of the Pend Oreille River, which is 6,640 CFS. The TP limits in the 2014 draft permit were based on a mixing zone encompassing 43.5% of the 10th percentile 365-day rolling harmonic mean flow of 10,259 CFS. The revised June – September TP mixing zone is equivalent to a mixing zone encompassing 30% of the stream flow used to calculate effluent limits for TP in the 2014 draft permit.

Comment #2-25 (LPOW)

While the draft permit presumes to limit discharge volumes to 5.0 mgd, limitations on flow are not specified in Table 2, Proposed Effluent Limits. We therefore request that the EPA specify the maximum daily limit in Table 2 alongside applicable effluent limits.

Response #2-25

“Table 2” in this case refers to Table 2 of the Revised Fact Sheet. Effluent limits are listed in Table 1 of the revised draft permit.

LPOW made a similar comment during the first public comment period. Refer to the response to comment #1-21.

Comment #2-26 (LPOW)

It’s clear that the proposed interim limits from June-September, which are the same as the final limits from October-May, will cause or contribute to WQS violations. According to the proposed compliance schedule outlined in the DEQ Water Quality Certification, interim limits will be in effect for up to 6 years including the 1 year grace period where the City decides which compliance schedule option they have selected. Considering that the current level of phosphorous loading already greatly exceeds the miniscule assimilatory capacity that may or may not remain, the interim limits must be substantially reduced to prevent further impairment to the River.

DEQ and EPA may not authorize TP discharge limits that will cause or contribute to violations of water quality standards; therefore the permit must be further revised to incorporate a more stringent interim and final TP WQBELs.

Response #2-26

The commenter is correct that the *interim* TP effluent limits for June – September will not ensure compliance with water quality standards. However, they are not intended to do so, nor are they required to do so under federal regulations (40 CFR 122.47).

The final effluent limits for TP are derived from and ensure compliance with Idaho’s narrative water quality criterion for nutrients. As explained on Page 12 of the revised Fact Sheet, “the EPA has determined that the City cannot consistently comply with...the proposed TP limits for the season of June – September.” Therefore, the State of Idaho has authorized a compliance schedule which allows the permittee time to phase in compliance with the new WQBELs over time. During the term of the

compliance schedule, the permittee is temporarily authorized to discharge more TP than allowed by the final limits.

The interim limits are included to ensure compliance with the State of Idaho's draft Clean Water Act 401 certification and are consistent with federal regulations regarding interim requirements in compliance schedules longer than 1 year (40 CFR 122.47(a)(3)).

Comment #2-27 (LPOW)

There is sufficient narrative and numeric data and science showing the Pend Oreille River is unable to meet, at minimum, its recreational contact and cold water aquatic life designated uses, and therefore is impaired and requires a TMDL. As EPA recognizes in its Fact Sheet, when a waterway does not possess a TMDL, permits can still contain Wasteload Allocations (WLAs) for specific point source dischargers. In turn, EPA has given the Sandpoint POTW a WLA.

However, the WLA for the POTW would sanction excessive loading based on, as discussed above, expanded mixing zoned, and therefore is inappropriate and must be revised. Indeed, the proposed TP WQBEL for the Pend Oreille River is insufficient to ensure that water quality standards downstream of the discharge will be protected because the permit implicitly assumes that TP concentrations in the main channel are an appropriate indicator of acceptable TP concentrations constituting adequate protection of water quality standards.

Rather, the permit should possess a TP WLA of less than a minimum of 61 lbs/day (as suggested above) because its designated uses, particularly contact recreation and cold water aquatic life, are tied specifically to near-shore use, not main channel river use. Near-shore water below the POTW discharge circulates and dilutes less than in the main channel of the river, meaning it is more sensitive to TP concentrations, and therefore requires more stringent effluent limits to protect its designated uses. The revised draft permit's proposed TP WQBEL is thus arbitrary, on one hand, because there is zero explanation of how TP dischargers from the POTW – in combination with other sources of TP in the river – will not violate water quality standards in the near-shore area.

Further, the POTW's TP concentrations from discharges bioaccumulate in receiving water, with the potential to become much more potent in shallower near-shore water with less dilution capacity. The studies shown in DEQ's Water Quality Certification prove that the effluent plume from the POTW is significant and far greater than any allowable mixing zone. Although the permit's documentation notes this fact, it does not then take the logical step in applying the near-shore's diminished capacity to dilute TP and require more stringent effluent limitations. Instead, it applies inappropriately lax WQBELs; this decision is arbitrary and capricious. EPA cannot sanction unabated pollution that causes or contributes to persistent violations of water quality standards in the river beyond the mixing zone.

Response #2-27

This comment is nearly identical to comment #1-23, which LPOW submitted during the first public comment period. Refer to the response to comment #1-23.

Comment #2-28 (LPOW)

The proposed TP WQBEL for the Pend Oreille River is insufficient to ensure that water quality standards downstream of the discharge will be protected because the permit does not account for a safety factor, contributions from other point and nonpoint sources.

Likewise, the revised draft permit does not model or account for TP discharges to the river below the discharge point. The river below the POTW receives TP loading from other point and nonpoint sources including but not limited to effluent from wastewater treatment facilities located in Dover and Priest River that discharge to the Pend Oreille River as well as stormwater discharges. These additional TP discharges compound the impact of TP discharges from the POTW, particularly in near-shore areas for the aforementioned reasons.

Response #2-28

This comment is nearly identical to comment #1-22, which LPOW submitted during the first public comment period. Refer to the response to comment #1-22.

Comment #2-29 (LPOW)

In its Water Quality Certification, DEQ explains that it is proposing to authorize a 47.2% mixing zone (June-September) and a 60% mixing zone (October-May) as opposed to a 25% mixing zone for TP. EPA's Fact Sheet admits that, even with its generous effluent limits and receiving water criterion, projected concentration of TP at the edge of the authorized mixing zones will exceed its proposed limits (20.5 µg/L June-September and 15.6 µg/L October-May vs. 10 µg/L). Yet instead of, accordingly, concluding the POTW must possess a more stringent WQBEL, the permit creates proposed effluent limits based on larger mixing zones to justify not further restricting TP effluent concentrations. This logic is self-defeating and arbitrary: the only way decision-makers can rationalize the proposed WQBEL for the POTW is by creating exorbitant, unreasonably large mixing zones constituting 42.7% (June-September) and 60% (October-May) of the flow of the river.

A mixing zone study was conducted by DEQ to determine whether such a mixing zone would comply with applicable rules. We find it troubling that the study unequivocally found that even authorizing 47.2% and 60% mixing zones would violate water quality standards, yet the permit still reflects this exorbitant mixing zones. On the basis of the study alone, the proposed mixing zones are arbitrary and capricious. The proposed mixing zones are also arbitrary and capricious because, during low-flows, the existing mixing zones create a significant effluent plume that spreads across the river rather than moving rapidly downstream, and therefore by its plain language will cause or contribute to violating receiving water quality standards. In fact, the IDAPA prohibits such expansive mixing zones undoubtedly because they do not adequately protect receiving water quality.¹⁵

The revised draft WQS states that "DEQ may authorize a mixing zone that varies above the rules, however it must not cause an unreasonable interference with, or danger to, beneficial uses and must meet certain other rules. To obtain a larger mixing zone, the discharger must provide DEQ with an analysis that demonstrates a larger mixing zone is needed given, siting, technological, and managerial options...The City of Sandpoint's justification is available from DEQ upon request."

LPOW reviewed the City of Sandpoint's justification which included a series of brief emails between JUB engineering (representing the City) and DEQ. The prevailing argument for approving larger mixing zones was the purported expensive nature of the upgrades that would be required to meet reasonable effluent limits for phosphorous. While we do agree that a practical compliance schedule is necessary in

¹⁵ In the certification's discussion of CORMIX and CE-QUAL-W2 modeling of TP discharges from the POTW, under all scenarios – including the ultimately proposed seasonal effluent limits, the TP mixing zones from the POTW will result in unfavorable mixing and increased periphyton conditions down-river.

order to complete upgrades, which includes securing the necessary funds, we question DEQ's decision to authorize seasonal mixing zones that will still violate water quality standards after upgrades are complete.

According to the DEQ, these conditions are contrary to the WQS mixing zone rules (IDAPA 58.01.02.060). Yet DEQ attempts to then rationalize the permissibility of larger mixing zones by referencing the river's previous delisting from the Integrated Report in 2010. However larger mixing zones will, in turn, encompass more of the river's breadth in violation of IDAPA rules. Thus the proposed expansion of the POTW's mixing zones, like the Permit's WQBEL for TP, lacks supporting science, logic, or law and is arbitrary and capricious.

Furthermore, the agencies' reliance on the River's previous delisting as evidence that sanctioning increased pollution is acceptable is counterintuitive as DEQ itself concluded that the Pend Oreille River has little or no remaining assimilative capacity for phosphorous (as of 2010) and the previous delisting action was a questionable decision at best. DEQ stated that the remaining assimilatory capacity as of 2010 was a mere 0.027 µg/L, not considering any of the three municipal discharges to the Pend Oreille River. The EPA determined through the revised draft permit that the relative contribution to in-stream loading of TP today by the Sandpoint POTW is 65.3 lbs/day. This is equivalent to 1,570 µg/L of phosphorous, approximately 58,148X the estimated remaining assimilatory capacity 6 years ago.

Likewise, the proposed mixing zones are arbitrary and capricious because it is predicated on the unproven assumption that beneficial uses will be protected by 10 µg/L criterion, where that limit does not account for the difference in more sensitive designated uses of the River in near-shore areas, downstream pollutant loading, and best available sampling data. Last, the proposed mixing zones are arbitrary and capricious because it assumes a fact - that the POTW's proposed effluent limit for TP is protective - with no evidence in support.

Indeed, this post-hoc rationalization is particularly suspect logically and legally. Here, the revised draft permit contemplates conducting studies necessary to justify the proposed effluent limit while it sanctions discharge concentrations of TP that exceed the interpreted narrative criteria of 10 µg/L of TP. DEQ cannot rely on future actions of the permittee and unknown science to justify its newly expanded mixing zones and EPA's lax TP limits because, meanwhile, both will cause or contribute to violations of water quality standards, an action Idaho and federal law prohibit. As discussed above, protecting designated uses in receiving waters necessitates more representative, stringent, standards. Likewise, it is just as likely that the expanded mixing zones – which in essence represents unabated TP pollution arising from unacceptably high TP discharges by the POTW– will cause or contribute to degrading beneficial uses as it will protect them.

Response #2-28

The commenter's statement that the "projected concentration of TP at the edge of the authorized mixing zones will exceed its proposed limits (20.5 µg/L June-September and 15.6 µg/L October-May vs. 10 µg/L)" is based on the reasonable potential analysis in Appendix E to the 2016 Fact Sheet. In this analysis, the EPA calculated the concentrations of TP that would be observed at the edge of the mixing zone if Sandpoint discharged at the maximum effluent TP concentration of 5.33 mg/L and at its design flow of 5.0 mgd. A discharge of TP at this concentration and flow is equivalent to 222 lb/day, which is more than twice the least-stringent average monthly WQBEL in the permit (96 lb/day). Thus, the permit

does not authorize discharges of TP at this level. Thus, the calculated edge-of-mixing zone TP concentrations referenced by the commenter will not occur as long as the permittee complies with the TP effluent limits in the permit. As explained in Appendix E to the 2016 Fact Sheet, the final WQBELs for TP will, in fact, ensure compliance with the State of Idaho’s narrative criterion for nutrients.

The fact that the authorized mixing zones use more than 25% of the stream flow is not a violation of Idaho’s water quality standards. Idaho’s mixing zone policy states that, “The Department may authorize a mixing zone that varies from the limits in Subsection 060.01.h. if it is established that...ii. A larger mixing zone is needed by the discharger and does not cause an unreasonable interference with, or danger to, beneficial uses as described in Subsection 060.01.d., and the mixing zone meets the other requirements set forth in Section 060. The discharger shall provide to the Department an analysis that demonstrates a larger mixing zone is needed given siting, technological, and managerial options.” IDEQ has determined that a larger mixing zone is necessary in this case.

The commenter did not cite a source for the statement that “DEQ stated that the remaining assimilatory capacity as of 2010 was a mere 0.027 µg/L.” The EPA describes the assimilative capacity in Appendix E to the 2016 Fact Sheet. The assimilative capacity is the 10 µg/L interpreted narrative criterion less the upstream concentration of 7.3 µg/L, which is 2.7 µg/L.

In any event, it is not appropriate to compare the assimilative capacity of the river (in terms of concentration) to the effluent concentration, since the effluent flow rate is a small fraction of the receiving water flow rate. The commenter is correct that, in Appendix E to the 2016 Fact Sheet, the EPA estimated the average TP loading from the City of Sandpoint to be 65.3 lb/day. The commenter is also correct that this equates to 1,570 µg/L at the design flow of the City’s POTW. However, as also explained in Appendix E to the 2016 Fact Sheet, due to the large flow rate of the Pend Oreille River, the effluent loading of TP is 25% of the TP loading in the Pend Oreille River upstream from the discharge from June – September and 20% from October – May.

The assimilative capacity of 2.7 µg/L equates to the following loads:

June – September

$$0.0027 \text{ ppm} \times 4,291 \text{ mgd} \times 8.34 \text{ lb/gallon} = 97 \text{ lb/day}$$

October – May

$$0.0027 \text{ ppm} \times 5,338 \text{ mgd} \times 8.34 \text{ lb/gallon} = 120 \text{ lb/day}$$

The final water quality-based average monthly limits are 61 lb/day from June – September and 96 lb/day from October – May. Thus, the discharge of phosphorus authorized by the permit is less than the remaining assimilative capacity.

Comment #2-30 (LPOW)

The revised draft permit incorrectly calculates ultimate mass limits for TP. The permit should express the TP WQBEL in terms of concentration, not mass. The revised draft permit incorrectly assumes that, because TP is a nutrient that affects impacts on water over long-distances, and because its mixing zone calculations provide more than 100-fold dilution, that mass concentrations alone are sufficient. This conclusion is arbitrary and capricious and, for the reasons described, the proposed WQBEL of 61 lbs/day (June-September final limit) and 96 lbs/day (October-May final limit) of TP are insufficient to ensure discharges from the POTW will not cause or contribute to violations of water quality standards.

Response #2-30

This comment is nearly identical to comment #1-24, which LPOW submitted during the first public comment period. Refer to the response to comment #1-24.

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