Response to Comments

City of Horseshoe Bend Wastewater Treatment Plant
NPDES Permit Number: ID0021024
March 1, 2018

On November 6, 2017, the U.S. Environmental Protection Agency Region 10 (EPA) issued a public notice for the proposed reissuance of the City of Horseshoe Bend Wastewater Treatment Plant National Pollutant Discharge Elimination System (NPDES) Permit No. ID0021024. The public comment period closed on December 6, 2017.

During the public comment period, the EPA received comments from the following:

- Idaho Conservation League (ICL)

This document presents the comments received and provides corresponding responses to those comments. No changes were made as a result of the comments.

Comment 1. Temperature and Total Nitrogen Limits

Designated uses for the Payette River include cold-water aquatic life and salmonid spawning. According to Idaho's most recent Integrated Report (2014), both of these beneficial uses are currently fully supported; therefore water quality must be maintained pursuant to Idaho's Antidegradation Rules (IDAPA 58.01.01.051).

This NPDES permit includes effluent limits for a number of pollutants that could degrade water quality, however there remains three pollutants without effluent limits in the proposed NPDES permit. These pollutants are total nitrogen (TN), temperature, and ammonia. With regards to the impact these pollutants could have on water quality, IDEQ's accompanying 401 Certification states: "With respect to TN, temperature, and ammonia, there is no reason to believe these pollutants will be discharged in quantities greater than those discharged under the current permit."

We are concerned with this statement because the previous permit had no effluent limits or monitoring and reporting requirements for TN and temperature, so it is unclear what data IDEQ is basing this assumption on and the robustness of said data. According to the effluent characterization data presented in Table 2 of EPA's Fact Sheet, at times this facility's discharge reached a temperature of 22.4 °C, exceeding Idaho's ambient cold water temperature standard by 0.4 °C and the daily maximum temperature standard by 3.4 °C (IDAPA 58.01.02.250.02.b). Based on Table 2 alone we are not able to discern the timing of these thermal discharges, but if thermal discharges of this magnitude occurred during a salmonid spawning period then Idaho's ambient spawning temperature standard would have been exceeded by 9.4 °C and the daily average maximum temperature standard by 13.4 °C (IDAPA 58.01.02.250.02.f.ii).

In addition to temperature, Table 2 shows that this facility discharged up to 23.3 mg/L of ammonia (as N) and 25.2 mg/L of nitrate plus nitrite nitrogen. Again, the timing of these discharges is unclear, however there is potential for up to 48.5 mg/L of nitrogen to be discharged from this system. Further, this value only represents inorganic nitrogen and thus could be even larger if organic nitrogen were considered. Idaho's Water Quality Rules include the following narrative standards for excess nutrients such as nitrogen: "Surface waters of the state shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses."

This narrative standard compels EPA and IDEQ to set regulations based on the best available science. For salmonids, studies have shown that acute toxicity to NH3-N has been documented in the range from 0.08 to 1.1 mg/l. Further, properly regulating discharges of nutrients is not only vital for the local fish population but also for downstream entities. The Payette River is a tributary to the Snake River and Brownlee Reservoir, a reservoir that experienced harmful algal blooms this past summer do in part to an excessive amount of nutrients in the water.

Pursuant to 40 CFR 122.44(d)(1)(i), the EPA is obligated to control all pollutants or pollutant parameters that 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. As presented, this NPDES permit lacks a reasonable potential analysis (RPA) for temperature and TN. These analyses should be performed in order to comply with 40 CFR 122.44(d)(1)(i). After completing RPAs for temperature and TN, the EPA should incorporate any findings into this NPDES permit, such as numeric effluent limits for TN and temperature.

In the absence of data, the EPA should include an end-of-pipe effluent limit for temperature consistent with all criteria applicable to any potential beneficial uses present. Inclusion of this provision in the proposed NPDES permit ensures that any aquatic life uses are not unduly harmed due to a lack of knowledge regarding the current status of the water body. Excluding such a provision from the proposed permit could create a scenario where Horseshoe Bend's effluent is degrading habitat for aquatic life and thereby negatively influencing any beneficial use surveys that may occur throughout the duration of this permit.

Response.

The permit includes water quality based effluent limits for all pollutants with reasonable potential to cause, or contribute to an excursion above any state water quality standard in accordance with 40 CFR 122.44(d)(1). The EPA concluded that the discharge would not have reasonable potential to exceed the water quality criteria for temperature or total nitrogen therefore, the permit does not include effluent limits for those parameters.

Temperature

Page 20 of the Fact Sheet discusses the temperature reasonable potential analysis. Assuming a mixing zone based on 25% of the 7Q10 flow and the design flow of the facility, there is a dilution factor of 474:1. The analysis was mistakenly noted as being based on 70 effluent samples. In order to take a conservative approach, EPA used the maximum value of 150 effluent samples as reported on the City's renewal application (shown in Table 2 of the fact sheet) in determining reasonable potential.

Since receiving ICL's comments, the City provided the EPA with daily maximum effluent temperatures from 2016 and 2017 as recorded by its continuous monitoring system. The maximum temperature was 25.2 ºC, and using either that value or the maximum reported effluent temperature of 22.4ºC from its renewal application, the discharge from Horseshoe Bend will not result in a measurable change in the temperature at the edge of the mixing zone. Based on this analysis, and as explained in the fact sheet, the EPA concludes that the discharge does not have reasonable potential to exceed the water quality criteria for temperature.

Total Nitrogen

With regard to the reasonable potential analysis for total nitrogen, the EPA evaluated the reasonable potential to cause or contribute to an exceedance of the nutrient narrative criteria based on phosphorus. The EPA used phosphorus because the Snake River-Hells Canyon TMDL identifies phosphorus as the limiting nutrient and cause of the downstream nutrient impairment in the Snake River.

Ammonia

With regards to the commenter's statement about ammonia toxicity studies and that the "narrative standard compels EPA and IDEQ to set regulations based on the best available science," the EPA used site-specific pH and temperature data, along with the EPA-approved state numeric standard to conduct the reasonable potential analysis for ammonia. These are the criteria applicable for Clean Water Act purposes (*See* Page 19 of the Fact Sheet). Based on this analysis, and as explained in the fact sheet, the EPA concludes that the discharge does not have reasonable potential to exceed the water quality criteria for ammonia. The EPA cannot set regulations for water quality standards in the permit. IDEQ based its 401 certification on the same EPA-approved ammonia criteria.

No changes resulted from this comment.

Comment 2. Total Phosphorus TMDL and Nutrient Reduction Study

Page 12 of the EPA's Fact Sheet mentions that IDEQ was planning to create and implement a total phosphorus (TP) TMDL for the entirety of the Payette River. We are curious over the status of this TMDL and whether the EPA is coordinating with IDEQ on preparing said TMDL. In addition, we ask that the EPA provide details on how they plan

to incorporate the findings of a TMDL once completed.

Somewhat related, we are curious as to how the EPA plans to incorporate the findings of the required Nutrient Reduction Study (NRS) into this permit. Permit condition II.C requires that the facility submit the NRS to the EPA and IDEQ within 3 years after issuance of this permit. At such time EPA and IDEQ will review the findings, and theoretically incorporate those findings in the new permit that would be issued no later then 2 years after the submittal of the NRS. However, the issuance of this draft permit is now nine (9) years overdue. It would therefore be prudent to include stipulations in this permit requiring that nutrient reduction strategies be adopted as soon as possible in the event that such a long delay in permit reissuance occurs again.

Response.

The Fact Sheet reference to IDEQ creating a TP TMDL for the Payette River was based on a statement in the 2004 Snake River – Hells Canyon TMDL on p. 439 which stated, "Point sources that discharge to the tributaries will be accounted for in the tributary TMDL processes…..In the case where a TMDL for other pollutants is already in place (Payette and Boise Rivers), IDEQ will prepare a tributary-specific TMDL through the existing tributary TMDL process as part of the Implementation Plan for the approved TMDL. This TMDL will be written as an extension of the SR-HC TMDL process, but will utilize the WAG and other technical and stakeholder groups that participated in the preparation of the tributary TMDL."

At this time, the EPA is unaware of the status of the potential TMDL. If a TMDL is completed for the Payette River, any associated wasteload allocation (WLA) for Horseshoe Bend will be incorporated into the NPDES permit pursuant to 40 CFR 122.44(d)(1)(vii)(B).

As discussed on page 21 of the Fact Sheet, the nutrient reduction potential varies by facility. Part VII.C. of the Fact Sheet discusses that the study should evaluate options for using existing infrastructure and other cost-effective methods of achieving nutrient load reductions. Given the unknown nature of the findings and that the study is intended to consider multiple options, the EPA has not included any stipulations in this permit that are dependent on the results of the study.

No changes resulted from this comment.

Comment 3. Revisions to Mixing Zone

The EPA's Fact Sheet states, "If IDEQ revises the allowable mixing zone in its final certification of this permit, reasonable potential analysis and WQBEL calculations will be revised accordingly." This statement should also include language stating that if IDEQ revises the allowable mixing zone, thus requiring a new reasonable potential analysis, then this proposed permit must go out again for a public comment period.

Response.

IDEQ has not changed the mixing zone, therefore, there is no need for an additional public comment period. Also, the EPA does not revise the Fact Sheet after the public comment period. Any clarifications or additional rationale are identified in the Response to Comments Document, which is part of the permit record.

No changes resulted from this comment.