

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

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.

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.