

BHC Consultants

Comments are provided in the attached document.

Preliminary Draft Puget Sound Nutrient General Permit Comments

- Can Ecology expand on the steps that will be taken and information gathered for inclusion of facilities located in watersheds? Will these facilities receive a WQBEL upon inclusion, or will there be a similar process with action levels and optimization as for the initially permitted facilities?
- The first bullet of Section II.C on page 5 states “privately-owned facilities must incorporate into a public entity such as a sewer district in the event they want to expand or make substantial modifications.” Can you please define “substantial modifications”? Would this include rehabilitation of a facility even without expansion of capacity?
- Also, at the end of the first bullet of Section II.C on page 5, it states “On a case-by-case basis, Ecology will consider appropriate action levels and monitoring requirements in the individual permits for the privately-owned facilities through permit modifications. Otherwise, Ecology will consider nutrient controls at the time of permit renewal.” So, does this mean even if the facility does not “expand or make substantial modifications” it will still see nutrient removal requirements as part of their next permit renewal?
- Section II.F does not indicate what the permit fees will be. Will this information be provided in the final draft?
- In Section III.A, second full paragraph on Page 8, there is reference to “other best-available science and monitoring data”. Can you give examples of what those might be? Also, in that same sentence it states, “Ecology must first establish a loading capacity for nutrients that will meet D.O. criteria”. Do the bounding scenarios indicate reductions from WWTPs will meet the D.O. criteria? If not, what then?
- Regarding the comment box on page 9, 99th percentile seems appropriate.
- Regarding the first comment box on page 10, the approach proposed for plants that have existing nitrogen-related limits seems reasonable.
- For the Table in Section III.E, it would be useful to see the timeframe of data used in the action levels identified.
- In Section IV.A, first paragraph on Page 14, it appears references to Tables 1-3 should instead be Tables 5-7.
- In Tables 5, 6, and 7, the description for final wastewater effluent monitoring states “The effluent total ammonia and nitrate plus nitrate samples must be taken during the same sampling event.” One of the “nitrate” words should be replaced with “nitrite”. Also, should TKN also be sampled at the same time?
- For large treatment plants, many of the influent and effluent parameters in Table 5 are indicated to be sampled and tested 4 times per week. For CBOD₅ in particular, this can be difficult without requiring weekend work. Sampling and testing 4 times a week would undoubtedly require staff to come in on the weekend to either setup for testing or do readings. Sampling and testing 3 times a week would be preferred as that could likely avoid weekend work.
- Regarding Section IV.B, is it possible for Ecology to integrate the NPDES and general permit reporting forms so there is not a duplication of entered data with increased possibility for error?
- The first sentence of Section V.A states that the permit is designed so that dischargers will “reduce nitrogen in their discharge to the greatest extent possible during the permit term.” If a

facility makes optimization improvements that results in them being comfortably below the AL₀ action level, this suggests they must invest further even at greater cost for unnecessary and perhaps inefficient returns just because they can. It does not appear from other parts of the permit that this is the intent, so perhaps reconsider “greatest”.

- Regarding the comment box on page 19, perhaps estimating \$/lb of nitrogen removed, where the cost considers both capital and O&M, would be an appropriate measure for evaluating potential optimization actions. Also, the evaluation should consider how and if the potential optimization strategy will result in reduced capacity due to change in operations, repurposing tank volume, etc. If the optimization strategy does effectively reduce capacity such that the plant would be operating at 85%+ of the recalculated capacity, would this trigger planning for improvements at that time if that would not have been the case without the optimization? Additionally, the optimization strategy must consider how optimizing for nitrogen removal might yield suboptimal results for other permitted effluent parameter (e.g., phosphorus), where applicable.
- Regarding the first comment box on page 20, the definition of reasonable investment should be left to the facility to decide based on the cost, available funds, likely benefit, and how that investment might help with meeting future limits, or if that would result in an abandoned investment. Also, for facilities already achieving < 10 mg/L TIN, that threshold could be lower as they do not know what their final limits might be and as effluent TIN gets lower the cost to achieve incremental reductions increases exponentially.
- Regarding the second comment box on page 20, some additional Tier 1 optimization actions might include primary treatment modifications (CEPT, more or less clarifiers online) to modify carbon load to the secondary process. Either more carbon to improve denitrification or perhaps less carbon to provide more aeration for nitrification. Also, maybe cycle of mixers in anoxic zones. Turning off mixers during low flow periods and allowing some fermentation and generation of soluble COD for helping denitrification.
- Regarding the second comment box on page 21, the tiers seem to be appropriately broken out for most facilities, but maybe not for smaller facilities. Tier 1 seems appropriate for smaller facilities, but Tier 2 and 3 may not be practical for these facilities without knowing a limit. These facilities have very limited funds to invest and investing in Tier 2 or 3 without knowing a limit may result in stranded assets or suboptimal use of very limited funds. For small facilities that account for a very limited amount of the nitrogen load to Puget Sound, only requiring Tier 1 until limits are known might be a better approach for use of very limited funds.
- Under Section V.C, second bullet for Tier 3 actions on page 22, would the process upgrades only be implemented if they were able to achieve at least less than 10 mg/L TIN? Otherwise, would it make more sense to not invest the money and instead go with the third bullet and plan for a full upgrade to achieve that level?
- Could effluent polishing (e.g., constructed wetlands) or alternate disposal methods also be considered a Tier 2 or 3 optimization action if those options are available?
- Regarding the second comment box on page 22, a standardized form for the annual optimization report would be helpful and provide clear direction as to what is expected and needs to be covered. This will also help make the process more efficient, as otherwise more work and information than is necessary might be undertaken because there is not a clearly prescribed format and content.

- Regarding the optimization plan referenced in Section V.D, please make sure sufficient time is given for sampling and testing of the last months data, data compilation and analysis, and preparation of the document before the it is due based on the time period of the data to be included in the plan.
- The second bullet from the bottom of page 25 in Section VI.B references a 30-year planning horizon. Almost all entities use a 20-year planning horizon, which also matches up with most county target population projections. Often even with a 20-year horizon the projections change substantially during that time period. It would likely be even more so for a 30-year period. Therefore, a 20-year period may be more practical.
- The third main bullet on page 26 under Section VI.B references evaluating “outside the fence opportunities”. Would that be necessary if it is shown limits can be met just by upgrading the plant? Also, the “outside the fence opportunities” identified are all wastewater related. Would stormwater treatment also be considered and could credit be given towards the wastewater discharge for investments and improvements in stormwater treatment that also reduce nitrogen loading?
- The last paragraph of Section VI.B on page 26 states that the “Nutrient Removal Evaluation is not intended to be an engineering report”. However, the required information meets most of the main requirements for such a report. Rather than doing another engineering report later, can this report instead be submitted as an engineering report if desired? Realistically for many facilities, when planning for improvements, a thorough enough evaluation is going to be undertaken so that there is confidence in the evaluation, and as a result the effort will be much the same as what would go into an engineering report.
- Regarding Section VI.C, would responsibility for how the regional participants organize and fund their efforts and who prepares and submits the report be left to the participants to decide?
- Regarding the first and second comment boxes on page 27, it would seem consideration of a nutrient trading framework to develop the most cost-effective method for meeting limits through a regional approach would be an important consideration. Nutrient trading could not only include trading between facilities, but might that also include other mitigation efforts by the same entity with regards to say stormwater treatment? If nutrient trading were not a consideration, there would seem to be much less point to a regional approach to nutrient reduction and the only real benefit to a regional effort might be the second option of collaboration on exploration of technologies. Also, a regional approach to nutrient reduction would only make sense if most or all regional facilities engaged in this approach, whereas collaboration on technology assessment need not even be limited to a defined region.
- It appears the planning option for exceeding AL_1 also would fulfill the Nutrient Reduction Evaluation requirement. However, Section VI.E only includes the first two bullets from Section V.C for Tier 3 options and does not mention the planning option. Please clarify. Also, in that case it would seem preparing the evaluation as an engineering report would be necessary to allow proceeding into design during the second permit term as indicated in Section V.C.