BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re: Lummi Tribal Sewer and Water District Gooseberry Point Wastewater Treatment Plant NPDES Permit No. WA0025666 Sandy Point Wastewater Treatment Plant NPDES Permit No. WA0025658	NPDES Appeal No. _____

PETITION FOR REVIEW

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INTRODUCTION

Pursuant to 40 C.F.R. § 124.19(a), petitioner Northwest Environmental Advocates ("NWEA" or "Petitioner") respectfully petitions the Environmental Appeals Board for review of National Pollutant Discharge Elimination System ("NPDES") Permit Nos. WA0025666 (the "Gooseberry Point Permit") and WA0025658 (the "Sandy Point Permit"), issued by U.S. Environmental Protection Agency Region 10 (the "Region") to the Lummi Tribal Sewer and Water District on August 8, 2024. These two permits are identical in all respects material to this Petition, and are referred to below collectively as the "Lummi Permits."[1]

The Gooseberry Point Permit authorizes discharges from the Gooseberry Point Wastewater Treatment Plant ("Gooseberry Point WWTP") to Hale Passage, and the Sandy Point Permit authorizes discharges from the Sandy Point Wastewater Treatment Plant ("Sandy Point WWTP") to the Strait of Georgia. Both receiving waters are considered part of Puget Sound, a large inland estuary in the State of Washington that is connected to the Pacific Ocean. The two WWTPs are considered minor facilities by EPA, and have a similar treatment process using

[1] The issues presented in this appeal are also identical to those presented by NWEA in its Petition for Review of NPDES Permit No. WA0024805, issued by EPA Region 10 to the Tulalip Tribes of Washington Wastewater Treatment Plant. *See* Petition for Review, EAB Appeal No. NPDES 24-02 (filed Sept. 7, 2024). NWEA respectfully suggests that the Board consider consolidating the appeals in the interest of administrative convenience and efficiency.

rotating biological contactors ("RBC") to meet the Clean Water Act's secondary treatment standard.[2]

Like all municipal wastewater treatment plants the Gooseberry Point and Sandy Point WWTPs' (collectively, the "Lummi WWTPs") effluent contains the nutrients nitrogen and phosphorus, which in sufficient amounts can lead to "cultural eutrophication" or excessive algae growth, among other water quality impairments. Eutrophication of estuarine and coastal waters "can reduce overall water clarity, make waters unappealing to swimmers, interfere with fishing by fouling fishing lures and equipment, and result in a loss of diversity in aquatic organisms." *In re City of Taunton, Department of Public Works*, 17 E.A.D. 105, 116 (EAB 2016).

Puget Sound is experiencing such effects now. Washington's Department of Ecology ("Ecology")[3] has found that "wastewater discharged from sewage treatment plants" like the Lummi WWTPs is "negatively impacting water quality in Puget Sound" leading "to low dissolved oxygen, which impacts the health of aquatic life." Puget Sound has been on Washington's list of impaired waters for dissolved oxygen

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[2] *See* EPA, Fact Sheet for NPDES Permit #WA0025666, Lummi Gooseberry Point Wastewater Treatment Plant (June 16, 2021) at 9–10 ("Gooseberry Point Fact Sheet"); EPA, Fact Sheet for NPDES Permit #WA0025658, Lummi Sandy Point Wastewater Treatment Plant (June 16, 2021) at 9–10 ("Sandy Point Fact Sheet").

[3] Ecology is the state agency with EPA-delegated authority to issue NPDES permits within the State of Washington. *See Puget Soundkeeper All. v. Port of Tacoma*, 104 F.4th 95, 100 (9th Cir. 2024). Here, however, EPA Region 10 issued the Lummi Permits under review because both Lummi WWTPs are located on tribal land.

("DO") for decades, but there is no total maximum daily load ("TMDL") for DO in place for Puget Sound. The size and extent of Puget Sound's DO impairment is only expected to worsen in the years ahead due to population growth, climate change, and other causes.

As detailed below, Ecology has recently found that *all WWTPs discharging to Puget Sound* have a reasonable potential to contribute to the DO impairment, triggering the requirement under the Clean Water Act and EPA's implementing regulations to include water quality-based effluent limitations to "ensure compliance with" the DO standard. *See* 33 U.S.C. §§ 1313(b)(1)(C) and 1342(a)(1); 40 C.F.R. §§ 122.4(d) and 122.44(d)(1). Yet the Region inexplicably failed to include such a limitation in the Lummi Permits. And even though Ecology has recognized that all Puget Sound WWTPs will need to significantly reduce the amount of nitrogen they discharge in order to restore Puget Sound, here the Region chose a suite of vague narrative conditions relating to "nitrogen optimization" and future planning in lieu of a numeric nitrogen limitation. The Region's permitting decision was clear error, contrary to law, unsupported by the record, and should be reversed and remanded by the Board.

PROCEDURAL REQUIREMENTS FOR REVIEW

In considering petitions for review of NPDES permits, "the Board first evaluates whether the petitioner has met threshold procedural requirements such as timeliness, standing, issue preservation, and *specificity." In re City of Taunton,*

Department of Public Works, 17 E.A.D. 105, 110 (EAB 2016). Here, NWEA satisfies all procedural requirements for obtaining the Board's review of the Lummi Permits.

First, this petition for review is timely under 40 C.F.R. § 124.19(a)(3). The EPA Regional Administrator served notice of the issuance of the final Gooseberry Point and the Sandy Point permit decisions under 40 C.F.R. § 124.15 on August 8, 2024. *See* Letter from Mathew Martinson, EPA Region 10, to Jim Heitzman, District Manager, Lummi Tribal Sewer and Water District, *Re: Reissuance of NPDES Permit No. WA0025666 for Lummi Gooseberry Point Wastewater Treatment Plant* (Aug. 8, 2024); Letter from Mathew Martinson, EPA Region 10, to Jim Heitzman, District Manager, Lummi Tribal Sewer and Water District, *Re: Reissuance of NPDES Permit No. WA0025658 for Lummi Sandy Point Wastewater Treatment Plant* (Aug. 8, 2024). Because the 30th day after that date was Saturday, September 7, 2014, the deadline for initiating this appeal is extended to Monday, September 9, 2024 pursuant to 40 C.F.R. § 124.20(c).

Second, NWEA meets the requirements of 40 C.F.R. § 124.19(a)(2) for initiating an appeal of the Lummi Permits. NWEA submitted two sets of written comments to the Region on the issues presented herein for review for each of the Lummi Permits. *See* Letter from NWEA to Sally Goodman, NPDES Permit Section, Water Division, U.S. Environmental Protection Agency, Region 10, *Re: Draft NPDES Permit Nos. WA0025658 and WA0025666 for Lummi Sandy Point and Lummi Gooseberry Point Wastewater Treatment Plants* (July 30, 2021) ("NWEA

First Comment Letter"); Letter from NWEA to Sally Goodman, NPDES Permit Section, Water Division, U.S. Environmental Protection Agency, Region 10, *Re: Draft NPDES Permit Nos. WA0025658 for Lummi Sandy Point Wastewater Treatment Plant* (May 23, 2023) ("NWEA Second Comment Letter—Sandy Point"); Letter from NWEA to Sally Goodman, NPDES Permit Section, Water Division, U.S. Environmental Protection Agency, Region 10, *Re: Second Comment Period for Draft NPDES Permit for Gooseberry Point Wastewater Treatment Plant, Lummi Tribal Sewer and Water District* (June 15, 2023) ("NWEA Second Comment Letter—Gooseberry Point"). Those letters, written with specificity and each including numerous attachments and supporting factual and legal arguments, adequately preserved the issues for review by the Board.

FACTUAL BACKGROUND

A. Nitrogen discharges from municipal WWTPs contribute significantly to Puget Sound's dissolved oxygen impairment.

As the Region correctly recognizes, "[d]ischarges of excess nutrients, specifically nitrogen, to Puget Sound from domestic WWTPs are contributing to existing low dissolved oxygen (DO) levels in Puget Sound." EPA Region 10*, Fact Sheet Addendum for Proposal of Additional Conditions Related to PFAS and Nutrient Optimization/Reduction* (April 11, 2023) at 4 (hereinafter, "Sandy Point Fact Sheet Addendum"); EPA Region 10*, Fact Sheet Addendum for Proposal of*

Additional Conditions Related to PFAS and Nutrient Optimization/Reduction (May 16, 2023) at 4 (hereinafter, "Goosebery Point Fact Sheet Addendum").[4]

Portions of Puget Sound have been listed on Washington's "impaired waters list" for dissolved oxygen pursuant to Clean Water Act section 303(d) since at least 1998, and Washington's Department of Ecology ("Ecology") has known for decades that "anthropogenic (human) sources of nutrients lead to instances of low DO concentrations throughout Puget Sound . . . creating additional conditions (areas or duration) where water quality standards are not met." Ecology, *Fact Sheet for the Puget Sound Nutrient Draft General Permit* (Dec. 2021) at 26 (hereinafter "PSNGP Fact Sheet").[5]

Concurrently with the Region's development of the Lummi Permits, Ecology developed and issued a general NPDES permit called the Puget Sound Nutrient General Permit ("PSNGP"). The PSNGP authorizes discharges "from municipal wastewater treatment plants in the Washington waters of the Salish Sea contributing to impairments within the greater Puget Sound region." PSNGP Fact Sheet at 2. The PSNGP was issued in 2021, and "provides coverage to nearly 70

[4] The two Fact Sheet Addendums are identical with respect to the issues presented herein regarding the discharge of nutrients from the Lummi WWTPs; their potential to impact low DO levels in Puget Sound; and the Region's decision to include certain so-called "nutrient reduction conditions" in the Permits. Accordingly NWEA will use the phrase "Fact Sheet Addendum" to refer to both Addendums, collectively.

[5] The PSNGP Fact Sheet is attached hereto as Exhibit 1. It was submitted to the Region as an exhibit to NWEA's First Comment Letter, and is publicly available on Ecology's website at https://ecology.wa.gov/regulations-permits/permits-certifications/nutrient-permit.

domestic WWTPs that discharge nitrogen" to Puget Sound. Fact Sheet Addendum at 4. In drafting the Lummi Permits, the Region was obviously influenced by Ecology's PSNGP, and the record makes clear that the Region's overriding goal for the Lummi Permits was to issue a permit that was consistent with the PSNGP. *See* Fact Sheet Addendum at 5; EPA Region 10, *Response to Comments, Gooseberry Point Wastewater Treatment Plant, NPDES Permit Number: WA0025666* (Aug. 8, 2024) ("Gooseberry Point Response to Comments") at 2, 5–7; EPA Region 10, *Response to Comments, Sandy Point Wastewater Treatment Plant, NPDES Permit Number: WA0025658* (Aug. 8, 2024) ("Sandy Point Response to Comments") at 2, 5–7. The Region incorporated the PSNGP "and related fact sheet and response to public comments" into the record for the Lummi Permits by citing and linking to it. Fact Sheet Addendum at 4.

The Region also expressly adopted Ecology's determination, expressed in the PSNGP Fact Sheet, that "[d]ischarges of excess nutrients, specifically nitrogen, to Puget Sound from domestic WWTPs are contributing to existing low dissolved oxygen (DO) levels in Puget Sound" as well as Ecology's finding that "*all* domestic WWTPs that discharge to Puget Sound have reasonable potential to contribute to existing impairments" for DO. Fact Sheet Addendum at 4 (emphasis in original). Based largely upon Ecology's findings, and supported by extensive modeling of Puget Sound, the Region concluded that "there is reasonable potential for" the two Lummi WWTPs to "contribute to existing impairments for dissolved oxygen (DO)" in Puget Sound, and expressly acknowledged that "nutrients have far-field effects"

on water quality in the Sound "based on Ecology's finding that all domestic WWTPs discharging to Puget Sound have reasonable potential." Response to Comments at 2.

Indeed, Ecology's permit record for the PSNGP documents the strong relationship between nutrient pollution from municipal WWTPs—nitrogen in particular—and Puget Sound's DO impairment. As Ecology explains:

> DO deficits caused by nutrient pollution in surface waters across the state of Washington have become much more pervasive. While this comes from a combination of point and non-point sources, domestic WWTPs discharging at secondary treatment levels contribute to the nutrient over enrichment. This is because the conventional secondary treatment system design does not substantially remove enough nutrients (e.g., nitrogen and phosphorus) from the effluent to avoid over enrichment of the receiving water.

PSNGP Fact Sheet at 18; *see also id*. at 23 ("This draft permit specifically regulates total inorganic nitrogen due to its impact on DO."). As Ecology has further explained, the ongoing "failure to address human nutrient loads from domestic WWTPs will increase both the number of days and the size of areas that do not meet the numeric DO standard in both high and low population estimates for 2040." *Id*. at 26. *See also id*. at 27, fig. 2 (showing the approximate doubling of noncompliant area and days by 2040).

B. The Region is well aware that aggressive reductions in the amount of nitrogen discharged by all WWTPs to Puget Sound are required to attain the DO water quality standard.

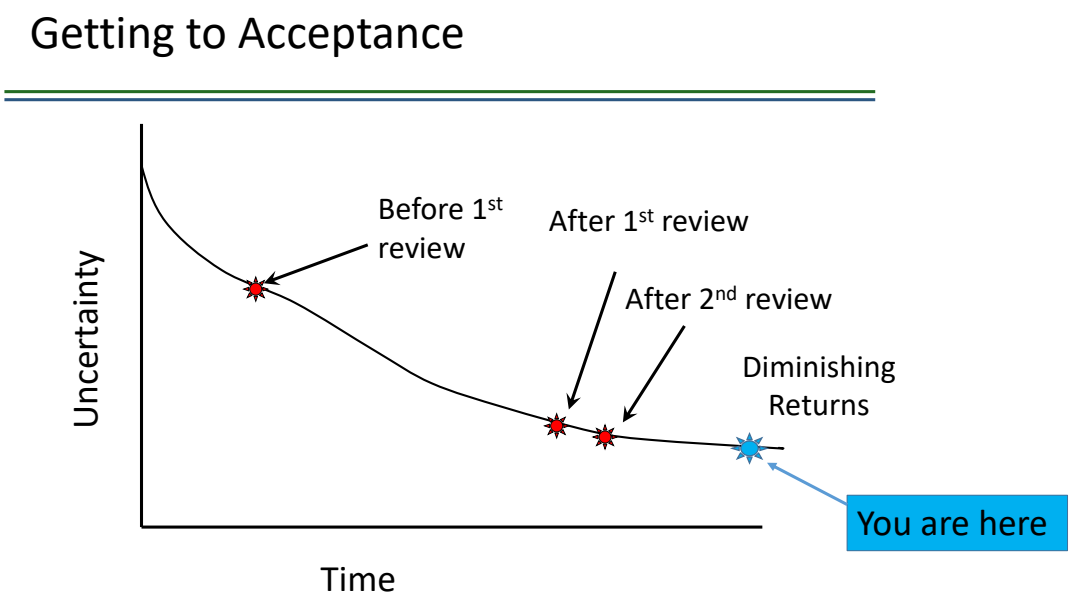
Both the Region and Ecology have long studied, modeled, and documented the effects of nitrogen pollution from regional WWTPs on Puget Sound, and in particular its contribution to the worsening DO impairment. Since at least 2018, this work has largely been organized under the auspices of Ecology's Puget Sound

Nutrient Source Reduction Project, which "aims to collaboratively address reducing point and nonpoint sources of nutrients in our region so that the DO water quality criteria and aquatic life designated uses are met by 2040." PSNGP Fact Sheet at 27.

A key tool used by both Ecology and the Region is the "state of the art" Salish Sea Model ("SSM"), a mechanistic model that provides "the ability to predict compliance with marine water quality standards and evaluate nutrient (nitrogen and organic carbon) reduction options for improving and restoring Washington waters of the Salish Sea to meet water quality goals." PSNGP Fact Sheet at 28. The SSM, along with its predecessor model called the Puget Sound Dissolved Oxygen Model, has been in development since at least 2009, and has been subjected to "[m]ore peer review and documentation that typical TMDL models" according to Region 10 staff.[6] Ecology explains that "the SSM has endured extensive internal and external peer reviews and constitutes the best available science for regulatory decisions made by Ecology." PSNGP Fact Sheet at 28. Region 10 staff recognize that

[6] Presentation by Ben Cope, EPA Region 10, Office of Environmental Review and Assessment, *Regulatory Models and Salish Sea Model Development* (2021), filed herewith as Exhibit 2 (hereinafter, "2021 Cope Presentation"). The 2021 Cope Presentation is discussed in, and listed as a reference for, the PSNGP Fact Sheet. *See* PSNGP Fact Sheet at 28–29, 63.

the SSM model refinement has reached the point of diminishing returns, as depicted on this slide from the Cope Presentation:



See Cope Presentation at 14. Analysis performed using the SSM was the basis for Ecology's finding—endorsed and adopted here by the Region—that "*all* domestic WWTPs that discharge to Puget Sound have reasonable potential to contribute to existing impairments." Fact Sheet Addendum at 4.[7]

Ecology has already used the SSM to determine the relative contributions of nitrogen to Puget Sound from point and nonpoint sources and to model the effects of varying levels of nitrogen reduction from those sources on the Sound's DO impairment. For example, in 2019 Ecology recognized that even if all WWTPs in Puget Sound were to comply with a seasonal nitrogen limit of 8 mg/L, Puget Sound

[7] Ecology stated in 2021 that, "[a]ccording to EPA, mechanistic models" such as the SSM "have a history of being used for regulatory decision making as they provide the scientific basis for quantifying impacts from pollution sources upon source identification." PSNGP Fact Sheet at 28.

would still not comply with the DO standard. *See* Ecology, *Puget Sound Nutrient Source Reduction Project, Volume 1: Model Updates and Bounding Scenarios* (January 2019) ("2019 Bounding Scenarios Report").[8] Using the SSM, Ecology modeled three hypothetical scenarios involving nitrogen reduction from the WWTPs discharging to Puget Sound; each scenario assumed the use of some degree of biological nutrient removal ("BNR"), a class of low-cost treatment technologies that Ecology has recognized can reliably achieve total nitrogen concentrations of 8 mg/L or lower at municipal WWTPs. *Id*. at 13, 18.[9] The model showed that a "[s]ignificant reduction of the total number of days of noncompliance with the DO water quality standard can be achieved" by installing "BNR at all wastewater treatment plants (WWTPs)," and yet Ecology conceded that even if "reductions are made *at all municipal wastewater treatment plants discharging into marine waters*,

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[8] Ecology's 2019 Bounding Scenarios Report was submitted by NWEA as an attachment to its First Comment Letter, and is considered by the Region to be a part of the record for the Lummi Permits. *See* Fact Sheet Addendum at 4, fn.2. (citing and providing a hyperlink to the 2019 Bounding Scenarios Report). It is attached hereto as Exhibit 3, and is found on Ecology's website at https://ecology.wa.gov/ water-shorelines/puget-sound/helping-puget-sound/reducing-puget-sound-nutrients/nutrient-pollution-studies.

[9] The 2019 Bounding Scenarios Report cites a 2011 report prepared by Tetra Tech, Inc. for Ecology called *Technical and Economic Evaluation of Nitrogen and Phosphorus Removal at Municipal Wastewater Treatment Facilities* (June 2011), *available at* https://fortress.wa.gov/ecy/publications/documents/1110060.pdf. *See* 2019 Bounding Scenarios Report at 18, 38, and 92. This Tetra Tech report is a part of the record for both the Lummi Permits and Ecology's PSNGP. For its part, EPA has described BNR as a treatment process that "removes total nitrogen (TN) and total phosphorus (TP) from wastewater through the use of microorganisms under different environmental conditions in the treatment process." EPA, Biological Nutrient Removal Processes and Costs (June 2007), available on EPA's website at https://www.epa.gov/sites/default/files/documents/ criteria_nutrient_bioremoval.pdf.

approximately 10% of the greater Puget Sound would not meet the standards." *Id* at 84 (emphasis added).[10] In other words, a nitrogen limitation of 8 mg/L—while plainly "feasible" for all WWTPs including the Lummi WWTPs—is not enough to "ensure compliance" with the DO standard as required by 40 C.F.R. § 122.44(d).[11]

A later and more granular Ecology analysis, published in September 2021 (and cited as "currently in publication" in the PSNGP Fact Sheet at 26), found that compliance with the DO standard in Puget Sound "could be almost achieved" by requiring a more advanced level of BNR—one capable of achieving total nitrogen effluent concentrations of 3 mg/L—when "applied to all WWTPs" discharging to Puget Sound in combination with other reductions of anthropogenic nitrogen and organic carbon to the Sound. Ecology, *Technical Memorandum: Puget Sound Nutrient Source Reduction Project Phase II - Optimization Scenarios (Year 1)* (September 9, 2021) at 44 (hereinafter, "2021 Technical Memo").[12] Not surprisingly,

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[10] More specifically, Ecology found that even under a scenario in which *all WWTPs discharging to Puget Sound* seasonally employ BNR to achieve an 8 mg/L total nitrogen limit, the area of DO noncompliance within Puget Sound was only reduced by 42% to 51%. 2019 Bounding Scenarios Report at 72–74.

[11] Discharges from the Lummi WWTPs and other EPA-permitted facilities have long been a part of the SSM model. *See* 2019 Bounding Scenarios Report at 25 (explaining that "99 marine point source inputs are included in the SSM" including "WWTPs under U.S. federal government and Canadian jurisdiction"); *id*. at 26 ("Data for WWTPs under federal jurisdiction were obtained through the EPA Region 10 NPDES Program").

[12] The 2021 Technical Memo is attached hereto as Exhibit 4, and is available on Ecology's website at https://ecology.wa.gov/water-shorelines/puget-sound/helping-puget-sound/reducing-puget-sound-nutrients/nutrient-pollution-studies.

the 2021 Technical Memo reports that under the modeled scenarios, "greater predicted DO compliance improvements were achieved with progressively larger load reductions" from both WWTPs and other sources. *Id*.

The most effective scenario modeled by Ecology in 2021, called Scenario 5e, predicted a "95% and 97% reduction in total cumulative noncompliant days and areas, respectively," and assumes a combination of (a) annual limits of 3mg/L of dissolved inorganic nitrogen "applied to all WWTPs" along with (b) a "65% anthropogenic nitrogen and organic carbon load reductions in the watersheds" draining into Puget Sound. *Id*. The figure below, taken from the 2021 Technical Memo, shows that Scenario 5e produces the smallest "noncompliant area" in Puget Sound of all optimization scenarios modeled using the SSM, followed closely by several other scenarios that also assume a limit of 3mg/L of dissolved inorganic nitrogen applied to all WWTPs. In all modeled scenarios, use of BNR to achieve a nitrogen concentration of 3 mg/L outperformed a nitrogen concentration of 8 mg/L and brought Puget Sound closer to compliance with the DO water quality standard. But regardless of the exact numbers modeled, according to Ecology the "SSM predicts that large [nutrient] reductions are needed to meet DO standards in WA waters." *Id*. at 45.

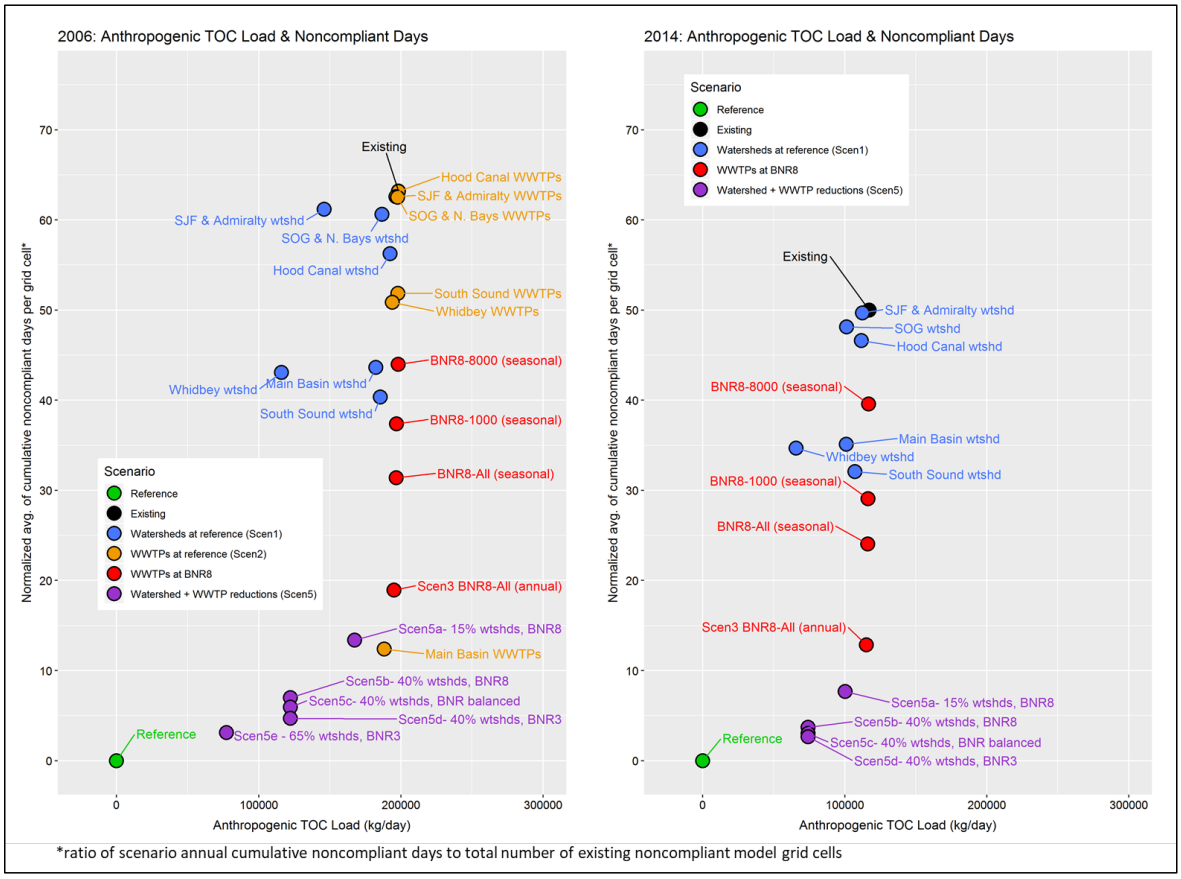

Figure 11. Comparison of normalized average predicted noncompliant days per model grid cell in WA waters of the Salish Sea resulting from all Optimization Scenarios and BNR8 Scenarios, with each scenario's associated anthropogenic total organic carbon loading in 2006 (left) and 2014 (right).

See 2021 Technical Memo at 20.[13]

Ecology has continued its work using the SSM and other data to "find the nutrient reduction scenario . . . that results in the highest predicted compliance with Dissolved Oxygen (DO) standards" in Puget Sound. Ecology, Nutrient Forum

[13] In these charts, Scenarios 5d and 5e—scenarios in which Puget Sound WWTPs are assumed to achieve "BNR3," an effluent concentration of 3 mg/l Total Inorganic Nitrogen using BNR technology—are shown in purple, towards the bottom of each chart. Scenario 5e results in the lowest anthropogenic nitrogen load to Puget Sound as well as the smallest area of noncompliance with the DO standard of all the modeled scenarios.

Meeting Packet (February 2022) at 3.[14] Ecology has, once again, confirmed "that large nitrogen reductions from both WWTP and watershed human sources are necessary to meet DO standards throughout all of the marine waters of Puget Sound." *Id*. Ecology has effectively determined that, *at a minimum*, "[r]educing existing TN loads from WWTPs . . . by 56% - 72%" is required to significantly reduce the size of Puget Sound areas that do not comply with the DO water quality standard. *Id*. Each of Ecology's chosen scenarios for future modeling analysis assume the use of BNR at all WWTPs in Puget Sound, with monthly average nitrogen limits ranging from 8 mg/L to 3 mg/L. *Id*. at 2, 5–6.

More recently but still prior to issuance of the Lummi Permits, Ecology's lead staffer for the Puget Sound Nutrient Source Reduction Project delivered a presentation to the Region summarizing what Ecology has "learned from the SSM to date[.]"[15] Among other findings, Ecology has concluded that "[i]f all WWTPs achieved 8 mg TN/L seasonally we still wouldn't fully meet standards"; that "[b]oth WWTP and Watershed [i.e., point and nonpoint source] reductions are necessary to meet standards"; and that "[b]ig reductions from both WWTPs and watersheds

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[14] The 2022 Nutrient Forum Meeting Packet is filed herewith as Exhibit 5; it is also available on Ecology's website at https://www.ezview.wa.gov/Portals/_1962/Documents/PSNSRP/Year%202%20Optimization%20Scenario%20Proposal%20Forum%20Packet.pdf.

[15] Dustin Bilhimer, Ecology, *Puget Sound Nutrient Reduction Project: Marine DO Alternative Restoration Plan, Presentation for the EPA Region 10 Nutrients Roundtable Meeting* (May 3, 2022) (hereinafter "2022 Nutrients Presentation"). This presentation is attached hereto as Exhibit 6, and is found on EPA's website at https://gaftp.epa.gov/Region10/HABs/ R10VirtNutrients2022/ (select linked file: "03 PSNSRP Presentation").

substantially improves DO" in Puget Sound, according to the model data. 2022 Nutrients Presentation at 5–6. These statements are consistent with both the 2019 Bounding Scenarios Report and the 2021 Technical Memo describing Ecology's SSM model results to date.

What these efforts have confirmed is this: imposing at least a seasonal numeric nitrogen limit of 3 mg/L *on all WWTPs in Puget Sound*—which is achievable with widely available BNR treatment technology—brings the Sound closest to compliance with the DO water quality standard, even if it isn't enough to fully resolve the impairment. There is no scenario under which mere "optimization" of existing secondary treatment systems will ensure compliance with that standard.

C. The Region issued NPDES permits for the Lummi WWTPs that lack numeric effluent limitations for nitrogen.

Against this backdrop of robust science and a growing understanding of the urgent need for significant reductions in nitrogen discharges from WWTPs throughout Puget Sound, the Region released draft NPDES permits and related Fact Sheets for both Lummi WWTPs on June 16, 2021. Neither draft permit contained any narrative or numeric effluent limitations or best management practices for nitrogen, but did contain monthly monitoring requirements for several forms of nitrogen. Gooseberry Point Fact Sheet at 10–11; Sandy Point Fact Sheet at 10. At that time, the Region explained its proposed monitoring requirements as follows:

> On January 30, 2020, Ecology announced plans to develop a draft Puget Sound Nutrient General Permit (PSNGP), which will apply to nearly 70 domestic WWTPs. **The permit will focus on limiting discharges of**

> **excess nutrients, which have been a significant contributor to low oxygen levels in Puget Sound.** A pre-draft of the PSNGP was issued on January 27, 2021. The first term of the PSNGP will not include numerical limits, but instead will be focused on monitoring and treatment optimization. It includes action levels that trigger additional nutrient reduction actions by the covered facilities. A future study evaluating data collected during the first term will determine waste load allocations for these state regulated WWTPs.
>
> The 2011 Permit required quarterly monitoring for nitrate plus nitrite and TKN for a single year. To align better with the goals of the PSNGP and to collect additional data to inform future permitting decisions, the draft permit proposes to increase the sampling frequency for both nitrate plus nitrite and TKN to monthly for the entire permit term. Additionally, action levels to trigger optimization efforts are not proposed during this permit term. During the next permit issuance process, EPA will evaluate if permit limits and potential nutrient reduction steps for these parameters are necessary.

Gooseberry Point Fact Sheet at 26–26 (emphasis added); Sandy Point Fact Sheet at 25 (emphasis added). The Region did not perform a reasonable potential analysis for nitrogen prior to releasing either of the Lummi draft permits in 2021. *See* Gooseberry Point Fact Sheet at 53–61, Appx. D; Sandy Point Fact Sheet at 50–57, Appx. D.

On August 10, 2021, Ecology certified pursuant to Clean Water Act section 401 that the draft Lummi Permits, if issued as written, would "comply with applicable water quality standards or other appropriate requirements of State law." Ecology, *In the Matter of Granting a Water Quality Certification, Lummi Gooseberry Point Wastewater Treatment Plant*, Order #20327 (Aug. 10, 2021) ("Gooseberry Point 401 Certification"); Ecology, *In the Matter of Granting a Water Quality Certification, Lummi Sandy Point Wastewater Treatment Plant*, Order #20326 (Aug. 10, 2021) ("Sandy Point 401 Certification").

But the Lummi Permits were not finalized in 2021. Nearly two years later, in April (for Sandy Point) and May (for Gooseberry Point) of 2023, the Region revised and re-released the Lummi Permits for additional public comment, along with the Fact Sheet Addendums. The permits as revised in 2023, which later became the final Lummi Permit issued in 2024, still do not include numeric nitrogen limitations, but the Region added two narrative provisions, one requiring the Lummi WWTPs to submit a "Nitrogen Optimization Plan and Report" and the other requiring the WWTPs to perform a "Nutrient Reduction Evaluation." Gooseberry Point Permit at 11–15; Sandy Point Permit at 11–16.

In its Fact Sheet Addendum, the Region conceded that "[e]xcess nitrogen is the main pollutant causing low dissolved oxygen levels in Puget Sound." *Id*. at 3. As the Region further explained:

> **Discharges of excess nutrients, specifically nitrogen, to Puget Sound from domestic WWTPs are contributing to existing low dissolved oxygen (DO) levels in Puget Sound**. Through use of the Salish Sea Model, Ecology concluded that ***all*** **domestic WWTPs that discharge to Puget Sound have reasonable potential to contribute to existing impairments. . . .**
>
> **Ecology's reasonable potential determination and the existing DO impairments within the Washington waters of the Salish Sea require nitrogen reduction from domestic POTWs (and other sources) in order to meet surface water quality standards.** Further, the findings showed that excess nutrients discharged from domestic WWTPs in one location cumulatively contribute to DO impairments in other locations due to the exchange of water that occurs between basins.
>
> While the specific part of Puget Sound where the [Lummi WWTPs discharge] is not impaired for DO, **limited data that have been collected indicate that the ambient DO falls below the criterion.**

> **Furthermore, as described above, Puget Sound as a whole has a DO impairment driven by discharges to all portions.**

Id. at 4 (bold emphasis added).[16] To the best of NWEA's knowledge, Ecology did not revise or reissue its 401 Certifications after the draft Lummi permits were revised and re-released for public comment in 2023, or after Ecology made its own independent determination that all WWTPs discharging to Puget Sound contribute to the Sound's DO impairment. *See* PSNGP Fact Sheet at 10 (Ecology explaining that it made its reasonable potential determination for all WWTPs based upon the 2019 Bounding Scenarios Report).

The only explanation in the permit record for the Region's decision to include the two additional narrative conditions relating to nitrogen but not a numeric nitrogen limitation in the Lummi Permits is the following, written in response to NWEA's second public comment letter:

> **Response #3**
> As stated in Response to Comment #1, the revised draft permit acknowledges that there is reasonable potential for all WWTPs discharging to Puget Sound to contribute to existing impairments for DO. However, it is impracticable to develop facility specific numeric nutrient WQBELs[17] based on a far-field DO impact because the EPA

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[16] Even though the 2021 draft permit (and the record basis therefore) had languished and grown stale for nearly two years, and even though Ecology had developed new data and information regarding the need for nitrogen limits at all WWTPs in Puget Sound as discussed above, the Region restricted public comment to the addition of the nitrogen-related conditions and changes to nutrient monitoring frequency (and one other unrelated change) during the second public comment period after the draft permit was revised and re-released in 2023. *See* Fact Sheet Addendum at 1.

[17] A "WQBEL" is a water quality-based effluent limitation—an effluent limitation intended to "to attain and maintain applicable water quality standards." *In re Springfield Water and Sewer Commission*, 18 E.A.D. 430, 441 (EAB 2021).

> has insufficient effluent nutrient data to use in modeling of Puget Sound-wide impacts to DO. The Salish Sea Model is still being refined in order to develop appropriate facility-specific WQBELs. The EPA also has insufficient data to determine whether nutrients in this discharge have the reasonable potential to cause or contribute to excursions above WQS for deleterious material that causes adverse effects or impairment of aesthetic values. . . .
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> ***
>
> **Response #7**
> The EPA cannot choose a limit like 3.0 mg/L as a matter of policy. Instead, NPDES permits must contain TBELs or any more stringent WQBELs. See 40 CFR 122.44(d). The EPA has established secondary treatment regulations for POTWs, which are the TBELs that apply to the facility. Further, as described in Response to Comment #3, aside from a lack of TMDL, it is impracticable to develop facility specific numeric nutrient WQBELs based on a far-field DO impact because the EPA has insufficient effluent nutrient data to use in modeling Puget Sound-wide impacts to DO.
>
> In addition, as described in Ecology's latest Puget Sound Nutrient Source Reduction Project Report—referred to as the Bounding Scenarios Report—modeling has confirmed that implementing nutrient reduction at WWTPs would achieve significant improvements toward meeting the DO WQS; however, the appropriate limits for different facilities are still unknown. Ecology continues to refine the Salish Sea Model to develop appropriate effluent limits. . . .

Gooseberry Point Response to Comments at 3, 5–6; *see also* Sandy Point Response to Comments at 3, 5–6. In its Fact Sheet Addendum the Region summarily states that best management practices ("BMPs") "may be established to control the discharge of pollutants when numeric WQBELs are infeasible" (citing 40 CFR 122.44(k)(3)), but it provides no factual basis, reasoning, or explanation as to *why* the Region thinks numeric nitrogen limits are not feasible at the Lummi WWTPs.

D. EPA has a long and successful track record of calculating numeric nitrogen WQBELs for inclusion in permits issued to municipal WWTPs.

EPA is no stranger to the facility-specific calculation of numeric WQBELs for nitrogen. As of February 2016, there were 600 major and 564 non-major WWTPs around the country with numeric effluent limits for nitrogen.[18] Other EPA regions have routinely issued NPDES permits to WWTPs containing site-specific numeric effluent limitations for nitrogen, often without a TMDL or a sophisticated model like the SSM to guide them. *See generally City of Taunton,* 17 E.A.D. 105; *In re Upper Blackstone Water Pollution Abatement District*, 14 E.A.D. 577 (EAB 2010) (both reviewing the nitrogen effluent limitations included in NPDES permits issued by Region 1).

Ecology states that some facilities discharging "to rivers that feed into Puget Sound at locations currently outside of the SSM grid" currently have "wasteload allocations for nutrients based on DO TMDLs in their respective watersheds." PSNGP Fact Sheet at 39. Even for WWTPs discharging directly to Puget Sound there is agency precedent for calculating and including numeric nitrogen WQBELs in NPDES permits. One such facility, the LOTT WWTP,[19] "already has an effluent

[18] *See* EPA, NPDES Nutrient Data Tables (2016), *available at* https://www.epa.gov/ npdes/npdes-nutrient-data-tables. A PDF of the tables described on that website as "Status of Nutrient Requirements for NPDES-Permitted Facilities" was included as an attachment to NWEA's Second Comment Letter to the Region for both the draft Gooseberry Point and Sandy Point Permits.

[19] LOTT is "is a regional wastewater utility serving the communities of Lacey, Olympia, and Tumwater in Thurston County, Washington." It operates a

limit below 3 mg/L [for Total Inorganic Nitrogen] in their individual NPDES permit . . . during the critical season of April through October." PSNGP Fact Sheet at 48. Indeed, the recently-approved Budd Inlet Dissolved Oxygen TMDL assigns aggressive wasteload allocations for dissolved inorganic nitrogen to four contributing WWTPs.[20] Future NPDES permits issued to those facilities must include WQBELs that are "consistent with the assumptions and requirements" of those wasteload allocations. 40 C.F.R. § 122.44(d)(vii)(B), and may well require aggressive nitrogen WQBELs.

ARGUMENT

A. The Board should review the documents filed with NWEA's Petition and consider them as part of the administrative record for the Lummi Permits.

NWEA submits with this Petition several documents that may not be a part of what the Region considers to be the administrative record for the Lummi Permits. Each of the documents proffered by NWEA were (a) prepared by either EPA or Ecology, or by contractors working under their direction and supervision; (b) relate directly to EPA and Ecology's ongoing effort, as part of the Puget Sound Nutrient Source Reduction Project, to address nutrient pollution and the ongoing

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WWTP in Olympia, Washington, that discharges to Budd Inlet, a marine bay that is a tributary to Puget Sound. *See* https://www.lottcleanwater.org/what-is-lott/.

[20] Ecology, *Budd Inlet Dissolved Oxygen Total Maximum Daily Load* (October 2022) at 20–26, 45, 49. The Budd Inlet TMDL is attached hereto as Exhibit 7; it may also be found on Ecology's website at https://apps.ecology.wa.gov/publications/SummaryPages/2210012.html.

DO impairment in the Sound; (c) pre-date permit issuance; and (d) were readily available to, and should be deemed to have been at least indirectly considered by, the Region in making its permitting decision here because they comprise part of the record and basis for Ecology's PSNGP, upon which the Lummi Permits were modeled. If they are not a part of the Region's certified record, then Board should supplement that record with NWEA's proffered documents.

NWEA submits these documents for the specific purpose of rebutting the Region's assertions—stated for the first time in its Response to Comments—that it "has insufficient effluent nutrient data to use in modeling of Puget Sound-wide impacts to DO" and that "the appropriate limits for different facilities are still unknown." Response to Comments at 3, 6.[21] The documents are introduced to show that the Region's conclusion that "it is impracticable to develop facility specific numeric nutrient WQBELs" for the Lummi WWTPs—which was publicly disclosed for the first time in EPA's Response to Comments—is flawed. *Id.* at 6. The Board has considered it "appropriate" to consider similarly proffered documents. *See, e.g., In re Stonehaven Energy Management, LLC*, 15 E.A.D. 817, 832 (EAB 2013) (considering several news articles proffered by petitioner "specifically to rebut" the Region's conclusions made for the first time in its response to comments); *In re*

[21] The Region's Fact Sheet Addendum was too vague to inform NWEA or the public of the factual basis for the Region's apparent contention that a numeric nitrogen WQBEL was "infeasible" for the Lummi WWTPs specifically. The Addendum included only a single sentence paraphrasing 40 CFR § 122.44(k)(3) in the abstract; it cites no facts or data in support, and sheds no light on the Region's "feasibility" determination—if it even made one at all. Fact Sheet Addendum at 5.

Dominion Energy Brayton Point, LLC, 13 E.A.D. 407, 418 (EAB 2007) (explaining that "it seems logical if not necessary" to consider petitioner's documents submitted to rebut "materials added to the record by the Region in response to comments").

The Board may also "take official notice of relevant extra-record material that is 'incontrovertible and publicly available, such as statutes, regulations, judicial proceedings, public records, and Agency documents.'" *In re General Electric Company*, 18 E.A.D. 575, 609–610 (EAB 2022) (quoting *In re City of Ruidoso Downs*, 17 E.A.D. 697, 716 n.22 (EAB 2019)). Each of NWEA's proffered documents fall under this exception because they are both "public records" and "agency documents." Accordingly, the Board should supplement the permit record with NWEA's proffered documents and should consider them in deciding the instant Petition.

B. The Region committed clear error by failing to include a numeric nitrogen WQBEL in the Lummi Permits.

Table 1 at pages 5–6 of the Gooseberry Point Permit, and Table 1 at pages 6–7 of the Sandy Point Permit, include the effluent limitations and monitoring requirements applicable to each WWTP's discharges to Puget Sound. Although Table 1 requires monthly monitoring for Total Ammonia, Nitrate + Nitrite, and Total Kjeldahl Nitrogen, there are no numeric effluent limitations for nitrogen in any form.[22] Instead, as noted above, the permit contains a pair of what the Region

[22] NWEA submitted extensive and specific written comments to the Region on this issue. *See* NWEA First Comment Letter at 2–28; NWEA Second Comment Letter–Sandy Point at 2–6; NWEA Second Comment Letter–Gooseberry Point at 1

has described as "nutrient reduction conditions"—narrative permit conditions that require a Nitrogen Optimization Plan and Nutrient Reduction Evaluation. Fact Sheet Addendum at 4–6. This decision was contrary to 40 C.F.R. §§ 122.4(d), 122.44(d)(1), and 122.44(k)(3), and was clear error.

1. The Region may only issue NPDES permits if they contain limitations and other conditions that are sufficient to *ensure compliance with* applicable water quality standards.

The Clean Water Act expressly states that "there shall be achieved . . . any more stringent limitation, including those necessary to meet water quality standards . . . or required to implement any applicable water quality standard established pursuant to this chapter." 33 U.S.C. § 1311(b)(1)(C). Accordingly, EPA is prohibited from issuing an NPDES permit if "the imposition of conditions cannot *ensure* compliance with the applicable water quality requirements of all affected States[.]" 40 C.F.R. § 122.4(d) (emphasis added). Permits must include permit conditions or limitations "necessary to . . . [a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality." *Id.* § 122.44(d)(1); *see also In re Government of the District of Columbia Municipal Separate Storm Sewer System*, 10 E.A.D. 323, 329 (EAB 2002) (construing 40 C.F.R. § 122.44(d)(1)).

This Board has held that the availability of only imperfect or incomplete data does not excuse the agency from the requirement of 40 C.F.R. §§ 122.4(d) and

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(incorporating by reference and adopting NWEA's Second Comment Letter–Sandy Point).

122.44(d)(1). For example, in *Upper Blackstone* the Board upheld Region 1's inclusion of a numeric nitrogen limit in an NPDES permit issued to a WWTP that was based on Rhode Island's narrative water quality criteria. The Board explained that EPA's regulation

> requires water quality-based effluent limits even when there is some degree of uncertainty regarding both the precise pollutant discharge levels and the potential causal effects of those discharges, so long as the record is sufficient to establish that there is a "reasonable potential" for that discharge to cause or contribute to a violation of water quality standards.

14 E.A.D. at 599; *see also id.* at 606 (holding that "scientific uncertainty is not a basis for delay in issuing an NPDES permit."). This Board does not "demand certainty where there is none" and will generally "uphold the agency's choice of a numerical standard if it is within a 'zone of reasonableness.'" *Id.*

Indeed, federal case law makes clear that "[s]cientific uncertainty does not allow EPA to avoid responsibility for regulating discharges." *Nat. Res. Def. Council v. U.S. Envtl. Protection Agency*, 808 F.3d 556, 578 (2d Cir. 2015) ("*NRDC II*") (citing *Massachusetts v. U.S. Envtl. Protection Agency*, 549 U.S. 497, 534 (2007), which held that "EPA [cannot] avoid its statutory obligation by noting the uncertainty surrounding various features of climate change and concluding that it would therefore be better not to regulate at this time."). Accordingly, even if "determining the proper standard is difficult, EPA cannot simply give up and refuse to issue more specific guidelines." *Id. See also Am. Paper Inst., Inc. v. U.S. Envtl. Protection Agency*, 996 F.2d 346, 350 (D.C. Cir. 1993) (remarking that permit writers cannot simply "thr[o]w up their hands and, contrary to the Act, simply

ignore[] water quality standards including narrative criteria altogether when deciding upon permit limitations."); *Nat. Res. Def. Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977) ("*NRDC I*") (remarking that the Clean Water Act is "not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.").

The Board has similarly explained that the "ensure compliance with" language of 40 C.F.R. § 122.44(d)(1) is mandatory, and that a permit record establishing only "a mere possibility of compliance" falls short of what the regulation requires. *In re City of Marlborough, Massachusetts, Easterly Wastewater Treatment Facility*, 12 E.A.D. 235, 250 (EAB 2005). The Board was unpersuaded in that case by the Region's statement that, "upon Permit expiration, it will determine whether additional treatment is needed to attain water quality standards," remanding the permit because "it is simply unclear from the record before us whether this Permit will ensure compliance with water quality standards." *Id.* at 251.

In short, both the Clean Water Act and EPA's implementing regulations prohibit the Region from issuing NPDES permits that cannot ensure compliance with applicable water quality standards, even in the face of scientific uncertainty or where the determination of the requisite WQBELs is technically complex.

2. The Region correctly found that the Lummi WWTPs' nitrogen discharges contribute to exceedances of the DO water quality standard in Puget Sound, triggering the obligation to include a nitrogen WQBEL under 40 C.F.R. § 122.44(d)(1).

The Region is well aware that the Lummi WWTPs' discharges of nutrients, and nitrogen in particular, cause or contribute to exceedances of the dissolved oxygen criterion in Puget Sound. Although the Region did not undertake its own reasonable potential analysis, it explicitly adopted Ecology's findings that "[e]xcess nitrogen is the main pollutant causing low dissolved oxygen levels in Puget Sound" and that "*all* domestic WWTPs that discharge to Puget Sound"—including both Lummi WWTPs—"have reasonable potential to contribute to existing impairments." Fact Sheet Addendum at 3–4 (emphasis in original).[23] Moreover, the Region agreed that Ecology's reasonable potential determination "require[s] nitrogen reduction from domestic POTWs (and other sources) to meet surface water quality standards" for DO in Puget Sound. *Id*. at 4. *See also* Gooseberry Point Response to Comments at 2 (concluding that "there is reasonable potential for the Gooseberry Point WWTP to contribute to existing impairments for dissolved oxygen (DO)" in Puget Sound); Sandy Point Response to Comments at 2 (same finding for the Sandy Point WWTP).

[23] The Region also knew that continued WWTP discharges *without* nitrogen reduction will make the Puget Sound dissolved oxygen impairment both worse and more difficult to clean up. *See* PSNGP Fact Sheet at 26 ("Eutrophication will continue to worsen as the regional population increases if actions to reduce human nutrient sources from domestic wastewater, agricultural runoff and other land-use activities are not taken[.]"); 2021 Technical Memo at 45 (projecting increases "in both predicted total cumulative number of days and noncompliant area" in the future).

These findings and conclusions are more than sufficient to trigger the Region's independent obligation to include WQBELs in the Lummi Permits. *See, e.g., In re Arizona Public Service Co.*, 18 E.A.D. 245, 253 (EAB 2020) ("If a discharge is found to cause, have the reasonable potential to cause, or contribute to exceedances of numeric or narrative state water quality criteria, the permit must contain water quality-based effluent limitations for the relevant pollutants.").

3. The Region did not make a sufficiently adequate finding on the record as to the feasibility of a numeric nitrogen WQBEL for the Lummi WWTPs.

Even though it correctly found that the Lummi WWTPs' discharges of nitrogen have a reasonable potential to contribute to Puget Sound's DO impairment, the Region declined to include a numeric nitrogen WQBEL in the Lummi Permits, opting instead for a suite of purported best management practices ("BMPs") for nitrogen reduction and a requirement that the WWTPs "assess strategies for optimizing nitrogen removal within the current treatment process." Fact Sheet Addendum at 5. The Region contends that "it is infeasible to establish numeric WQBELs for nitrogen at this time," Response to Comments at 7 (citing 40 CFR 122.44(k)), but the record does not support that contention.

Once it determines that additional limits are needed to ensure compliance with applicable water quality standards, EPA ordinarily calculates one or more facility-specific numeric WQBELs for inclusion in the permit. As EPA notes, often "criteria for dissolved oxygen are addressed by modeling and limiting discharges of oxygen-demanding pollutants such as . . . nutrients (phosphorus and nitrogen),"

EPA, NPDES Permit Writers' Manual (Sept. 2010) at 6–6, and the agency has a well-defined methodology for characterizing both the facility's effluent and the receiving water's assimilative capacity, and then calculating an appropriate numeric WQBEL for nutrients and other pollutants. *See id*. Ch. 6.[24] EPA has even issued guidance specifically for "the development of nutrient criteria for use in managing estuarine and coastal waters" that this Board has found may be used to support the development of facility-specific nutrient WQBELs. *City of Taunton,* 17 E.A.D. at 136 (citing Office of Water, U.S. EPA, EPA-822-B-01-003, *Nutrient Criteria Technical Guidance Manual: Estuarine and Coastal Marine Waters* 6-3 (Oct. 2001)) ("Nutrient Criteria Guidance").

In limited circumstances, EPA may include "[b]est management practices (BMPs) to control or abate the discharge of pollutants" in lieu of a numeric WQBEL—including, for example, if numeric effluent limitations are "infeasible." 40 C.F.R. § 122.44(k)(3).[25] *See District of Columbia,* 10 E.A.D. at 337 (noting that EPA's regulations "specifically authorize the use of BMPs in two potentially

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[24] EPA's NPDES Permit Writer's Manual is available at https://www.epa.gov/npdes/npdes-permit-writers-manual.

[25] This Board has upheld a region's decision to include BMPs instead of numeric WQBSLs in NPDES permits for discharges of stormwater, in part because "the high degree of variability in pollutants, volumes of discharge and impacts of discharge depending on land uses, storm events and receiving waters" present uniquely "difficult challenges" in calculating numeric WQBELs for such discharges. *In re Arizona Municipal Storm Water NPDES Permits*, 7 E.A.D. 646, 657 (EAB 1998)*; see also District of Columbia*, 13 E.A.D. at 336–338. Those concerns are irrelevant to municipal WWTP discharges, and NWEA has found no EAB or federal court decision upholding the use of BMPs in lieu of numeric nutrient WQBELs in an individual NPDES permit issued to a WWTP on alleged "infeasibility" grounds.

applicable circumstances" including where numeric WQBELs are "infeasible"); *NRDC II*, 808 F.3d at 565 (WQBELs may be narrative where the calculation of numeric limits is "infeasible."). While the word "infeasible" is not defined in EPA's regulation, this Board's decisions make clear that it does not extend to situations where "cost and technical considerations" may pose barriers to compliance. *See In re Town of Milford, Massachusetts Board of Sewer Commissioners*, NPDES Appeal No. 00-30 (EAB, July 9, 2001), slip op. at 13 ("it is settled law that cost and technological considerations are not a factor in setting water quality-based effluent limits."); *In re New England Plating Co.*, 9 E.A.D. 726, 738 (EAB 2001) ("In requiring compliance with applicable water quality standards, the CWA simply does not make any exceptions for cost or technological feasibility.").

If the Region does indeed contend that numeric WQBELs are "infeasible" under 40 C.F.R. § 122.44(k)(3), it must support that finding in the permit record. Although "the Board traditionally assigns a heavy burden to petitioners seeking review of issues that are essentially technical in nature," it nonetheless must determine "whether the record demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately adopted by the Region is rational in light of the information in the record." *City of Marlborough,* 12 E.A.D. at 251 (remanding an NPDES permit where the Region "failed to demonstrate, in response to specific comments on this issue, that the Permit will 'ensure' compliance with applicable Massachusetts water quality standards" for phosphorus).

Here, the Region performed no analysis and made no actual finding with respect to the feasibility of a numeric nitrogen WQBEL for the Lummi WWTPs, as required by 40 C.F.R. § 122.44(k)(3). Nothing in the record suggests that the Region reviewed, considered, or applied either the Permit Writer's Manual or the Nutrient Criteria Guidance when deciding whether to include a numeric nitrogen WQBEL in the Lummi Permits. While the Fact Sheet Addendum cites to the regulation for the basic proposition that "BMPs may be established to control the discharge of pollutants when numeric WQBELs are infeasible" (Fact Sheet Addendum at 5), it does not actually reflect any independent analysis of the feasibility of a numeric nitrogen WQBEL for the Lummi WWTPs specifically. And although the Region's Response to Comments states briefly that "it is infeasible to establish numeric WQBELs for nitrogen at this time," the purported basis for that conclusion is so poorly explained that it frustrates effective administrative review. Gooseberry Point Response to Comments at 7; Sandy Point Response to Comments at 7.[26] For this reason alone, remand of both Lummi Permits is warranted.

[26] The Region twice stated that it considered it "impracticable" to develop numeric nutrient limits, *see* Gooseberry Point Response to Comments at 3, 6; Sandy Point Response to Comments at 3, 6, but "practicability" is not the standard under 40 C.F.R. § 122-44(k)(3)—*feasibility* is. "Practicable" is a term of art under the Clean Water Act; it implies that something (like a technology-based effluent limitation) is cost-effective under the circumstances. *See, e.g.*, 33 U.S.C. § 1314(b)(1) (defining "best practicable control technology"). As noted above, however, "feasibility" provides no allowance for costs or technical complexity.

4. The Region's cursory reasons for why a numeric nitrogen WQBEL is infeasible for the Lummi WWTPs are inconsistent with EPA regulations and are not supported by the record.

Even if the Region's grounds for concluding that a numeric nitrogen WQBEL is infeasible for the Lummi WWTPs were sufficiently stated so as to allow for the Board's review, they are simply not supported by the record.

As previously mentioned, the Region's Fact Sheet Addendum for each WWTP does not explain its conclusion, but merely parrots the language of 40 C.F.R. § 122.44(k)(3). *See* Fact Sheet Addendum at 5. The Region contends in its Response to Comments that it is "impracticable to develop facility specific numeric nutrient WQBELs" for the Lummi WWTPs for three reasons: (1) a "lack of [a] TMDL"; (2) a purported lack of sufficient "effluent nutrient data to use in modeling of Puget Sound-wide impacts to DO"; and (3) the fact that "appropriate limits for different facilities are still unknown" and that "Ecology continues to refine the Salish Sea Model to develop appropriate effluent limits." Gooseberry Point Response to Comments at 6; Sandy Point Response to Comments at 6. These cursory excuses are belied by the permit record and fall short of the analysis required by EPA's regulations.

First, it is well established that the lack of a TMDL cannot excuse the Region from using its best professional judgment to calculate a numeric WQBEL for the Lummi WWTPs or from complying with 40 C.F.R. § 122.44(d)(1). *See City of Taunton*, 17 E.A.D. at 144 (EPA's regulations "contemplate that permit issuers will establish numeric permit limits, even when there are no TMDL or wasteload

allocations available."); *Upper Blackstone*, 14 E.A.D. at 605 ("effluent limits must be established without waiting for a TMDL or wasteload allocation."). In any event, the continued lack of a Puget Sound DO TMDL is the result of the Region's own failure to act in the face of decades of little progress by Ecology towards completing a TMDL.[27]

Second, nothing prevents the Region from calculating a site-specific WQBEL for the Lummi WWTPs even in the face of purportedly insufficient nutrient data for modeling Puget Sound-wide impacts to DO. It may be true that the determination of a numeric nitrogen WQBEL based on the Lummi WWTPs' far-field impacts to Puget Sound poses a technical challenge to the Region, but this cannot provide excuse for the Region to throw up its hands and ignore the problem. *See Am. Paper Inst.*, 996 F.2d at 350. The Puget Sound DO water quality standard is numeric, and as the D.C. Circuit explained in *American Paper Institute*, "[w]hen the standard includes numeric criteria, the process is fairly straightforward: the permit merely adopts a limitation on a point source's effluent discharge necessary to keep the concentration of a pollutant in a waterway at or below the numeric benchmark." *Id.* In any event, the Region supports its statement not with its own independent analysis, but by referencing "Ecology's latest Puget Sound Nutrient Source

[27] Ecology has long used—with the Region's blessing, unfortunately—what it calls "the Puget Sound Nutrient Reduction Plan" instead of a "a formal Total Maximum Daily Load (TMDL) to address the impairments" in Puget Sound; an approach Ecology incorrectly thinks will lead to "cleaner water more quickly than a traditional TMDL." PSNGP Fact Sheet at 31.

Reduction Project Report" (Gooseberry Point Response to Comments at 6)—the obvious implication being that the Region intends to defer to Ecology's future determination of "the appropriate limits" for the scores of WWTPs that discharge nitrogen into Puget Sound instead of doing the work itself.[28]

Third, Ecology's ongoing effort to "refine" the SSM and to determine appropriate nutrient WQBELs for the other point sources it regulates does not excuse the Region's inaction here. The Region remarks, without a trace of irony, that "the appropriate limits for different facilities are still unknown." Gooseberry Point Response to Comments at 6. The Region ignores that it is the permit writer's job to calculate or determine the "appropriate limits" for the facility receiving the permit in the first place. It may be true that "[t]he Salish Sea Model is still being refined in order to develop appropriate facility-specific WQBELs" for other facilities discharging to Puget Sound, Gooseberry Point Response to Comments at 3, but the Region points to no flaws in the model that preclude its use now, nor to any other gaps in the factual record that prevent the Region's use of its best professional judgement to calculate a site-specific numeric nitrogen WQBEL for the Lummi WWTPs.

[28] The Region's description of the five-year old 2019 Bounding Scenarios Report as being "Ecology's latest Puget Sound Nutrient Source Reduction Project Report" is disingenuous. *See* Response to Comments at 6 (emphasis added). The Region is well aware of the 2021 Technical Memo, issued in September 2021, which was cited (as a draft) in the PSNGP Fact Sheet at 62 and has been available on Ecology's website since its publication. *See* https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Helping-Puget-Sound/Reducing-Puget-Sound-nutrients/Nutrient-pollution-studies

Moreover, the Region's efforts to discount the present utility of the SSM fall flat; indeed, its own staff recognize that SSM model refinement has reached the point of "diminishing returns." Cope Presentation at 14. Ecology has already determined that "the SSM constitutes the best available science for determining the suite of point and non-point source reductions necessary to meet numeric water quality standards for DO." PSNGP Fact Sheet at 29. The model provides Ecology and the Region with "the ability to predict compliance with marine water quality standards and evaluate nutrient (nitrogen and organic carbon) reduction options" for Puget Sound dischargers. *Id* at 28. According to Ecology, mechanistic models like the SSM "form the basis of wasteload allocations and load allocations for point and non-point sources" that, "in turn, inform water quality based effluent limits for point sources." *Id*. at 29. And as discussed above, Ecology has already used the SSM to conclude that even if all WWTPs discharging to Puget Sound install BNR technology sufficient to meet a 3 mg/L limitation for total nitrogen, it still may not be enough to bring the Sound into compliance with the DO water quality standard. *See supra* at 9–14.

Even if the SSM (and other Ecology-derived data and models) are incomplete and imperfect, the Region must still use its best professional judgment and the data available to it to calculate a numeric nitrogen WQBEL. As the First Circuit has noted, "neither the CWA nor EPA regulations permit the EPA to delay issuance of a new permit indefinitely until better science can be developed, even where there is some uncertainty in the existing data." *Upper Blackstone Water Pollution*

Abatement Dist. v. U.S. Envtl. Protection Agency, 690 F.3d 9, 22 (1st Cir. 2012). To the contrary, "EPA is compelled to exercise its judgment in the face of scientific uncertainty unless that uncertainty is so profound that it precludes any reasoned judgment." *Miami-Dade Cnty. v. U.S. Envtl. Protection Agency*, 529 F.3d 1049, 1065 (11th Cir. 2008).

5. This Board has upheld EPA's inclusion of numeric nutrient WQBELs in permits issued to municipal WWTPs even where data are imperfect and no TMDL exists.

EPA has vast experience, built upon reliable and long-proven methodologies, for calculating facility-specific nutrient WQBELs to ensure compliance with state water quality standards, even where a TMDL is lacking; where multiple point and nonpoint sources may be contributing to the water quality impairment; where imperfect data exist; or even where the relevant standard is narrative in form. In a trio of decisions this Board has upheld EPA Region 1's inclusion of numeric WQBELs for nitrogen in permits issued to a WWTP that were based on comparable or even less robust scientific data than are available for Puget Sound. Collectively, these decisions make clear that Region 10 cannot avoid determining a WQBEL in the face of imperfect data, but instead must apply its expertise and best professional judgment to calculate a numeric nitrogen limit for the Lummi WWTPs.

First, in *Upper Blackstone*, the Board upheld Region 1's inclusion of a numeric nitrogen WQBEL for a WWTP in Massachusetts.[29] Region 1 based the

[29] In *Upper Blackstone*, Region 1 had included in the WWTP's permit "a numeric limit for total nitrogen discharges of 5.0 mg/l monthly average for the

nitrogen WQBEL for the Upper Blackstone WWTP largely upon a state agency report that conceded the lack of "a computer-based numerical model" for the receiving waters, instead relying on "a physical model experiment conducted in the early 1980s" that had studied "the relationship between nitrogen and phosphorus loading and various response variables in a tank system structured to model the Narragansett Bay system." 14 E.A.D. at 602. While acknowledging "that there are uncertainties in its analysis," Region 1 stated that "[t]here is no realistic likelihood . . . that water quality standards could be met with a less stringent nitrogen limit than the one proposed." *Id*. at 603.

Similarly, in *City of Taunton*, the Board upheld Region 1's inclusion of a numeric nitrogen WQBEL in an NPDES permit that was intended to ensure compliance with Massachusetts' narrative water quality standard for nutrients.[30] To determine the numeric nitrogen limit for the Taunton WWTP, Region 1 "first determined a threshold nitrogen concentration in the receiving waters that would be consistent with unimpaired conditions." 17 E.A.D. at 167. In so doing, the Region applied EPA's Nutrient Criteria Guidance and used available monitoring data to identify a reference location within the estuary "where water quality standards

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months of May through October and a narrative limit specifying treatment optimization for November through April." 14 E.A.D. at 14–15.

[30] In *City of Taunton*, Region 1 had included in the WWTP's permit "a nitrogen limit of 3.0 mg/l as a rolling seasonal average in effect from May to October," expressed in the permit as a mass load limit of 210 pounds per day, along with a requirement that the WWTP reduce nitrogen discharges "to the maximum extent possible" during the months of November through April. 17 E.A.D. at 119–120.

were not violated." *Id*. The Region then used available monitoring data "to identify a nitrogen concentration of .45 mg/l as representing a threshold level that would be protective of the minimum dissolved oxygen water quality standard of 5.0 mg/l and the nutrient water quality standard." *Id*. at 168. Next the Region "determined the allowable nitrogen load" for the receiving waters and, from there, "the nitrogen limit for the City's Plant." *Id*. at 169. The Region even determined "an equitable allocation" of the nitrogen load reduction required by "all wastewater treatment facilities with significant contributions to the Taunton Estuary" by assigning different numeric limits to WWTPs of different sizes. *Id*. at 170.

As the Board recognized in *City of Taunton*, "there was no need for the Region to model for the variability of tides, weather, and stream flows" because it had used a "steady state assumption . . . based on long-term average conditions." *Id*. at 169. The Board upheld the nitrogen limit in the Taunton permit as within the "zone of reasonableness," praising Region 1 for choosing "a greater reduction in pollutant discharge over a more finely tuned numerical limit" when faced with "a difficult choice between scientific certainty and the obligation to eliminate water quality impairments[.]" *Id*. at 177.

Most recently, in *Springfield Water and Sewer Commission*, the Board upheld the inclusion of a nitrogen limit in a municipal WWTP permit that was based upon the Region 1 permit drafter's "best professional judgment and information reasonably available to the permit writer at the time of permit issuance" where the Region had used a "tiering approach" that was "aimed at balancing the burden of

[total nitrogen] treatment among" the 29 municipal WWTPs discharging to Long Island Sound. 18 E.A.D. at 455–56.[31] The Board described Region's 1 rational approach as follows:

> [T]he Region derived POTW effluent limits by: (1) identifying the aggregate TN load from all contributing POTWs in a state; (2) capping that load to prevent further contributions to nitrogen impairment of Long Island Sound, even as local populations or development increase; and (3) allocating the TN load among POTWs in each state to achieve water quality standards in the Sound and fulfill the CWA's objectives.

Id. at 458. Region 1 did not merely assume that Springfield's WWTP could meet the 5 mg/L total nitrogen limit simply "by optimizing its existing technology," but recognized the limit could be met by "using readily available treatment technology"—namely, "low-cost BNR retrofits of existing sewage treatment plants[.]" *Id*. at 461.

In each of these instances Region 1 calculated a numeric WQBEL for nitrogen in the context of issuing an individual NPDES permit to a WWTP, without a TMDL or a robust regional model like the SSM to guide it. Here, unfortunately, Region 10 has taken the opposite and unlawful approach of ignoring and avoiding the problem.[32] The Region's failure to include numeric nitrogen WQBELs in the Lummi

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[31] In *Springfield Water and Sewer Commission*, Region 1 had included in the WWTP's permit a mass-based effluent limit of 2,794 lbs/day for total nitrogen. 18 E.A.D. at 454, fn. 9.

[32] NWEA does not propose specific numeric nitrogen WQBELs for the Lummi WWTPs that will ensure compliance with the DO standard in Puget Sound; that is for the Region to determine in the first instance. But as discussed above, the available SSM model data suggest it will need to be on the order of 3 mg/L. *See supra* at 9–13. As the Region itself recognizes, a total inorganic nitrogen ("TIN") level "of about 3 mg/L" was estimated by Ecology to represent the "lower limit of

Permits was clear error, contrary to the Clean Water Act and its implementing regulations, and unsupported by the record, and the Permits should be remanded to the Region.

C. The conditions included in the Lummi Permits in lieu of a numeric nitrogen WQBEL fail to ensure compliance with water quality standards as required by 40 C.F.R. § 122.44(d)(1).

Even if the Region correctly determined that it is infeasible to include a numeric nitrogen WQBEL in the Lummi Permits at this time, its chosen replacement conditions—which require the Lummi WWTPs to prepare a Nitrogen Optimization Plan ("NOP") as well as a Nutrient Reduction Evaluation ("NRE")—will not "ensure compliance with" the DO water quality standard in Puget Sound, in violation of the Clean Water Act and 40 C.F.R. § 122.44(d)(1).[33]

As an initial matter, the record for the Lummi Permits reveals that the Region made no effort to determine *whether* the NOP and NRE conditions will ensure compliance with the DO water quality standard in Puget Sound. If such an effort was made, it is not documented anywhere. The Fact Sheet Addendum summarily describes the two conditions but lacks any discussion of their relevance to—or their ability to ensure compliance with—the DO water quality standard in

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technology for nitrogen removal" and is "the concentration that Permittees (under the PSNGP) may expect if required to meet a numeric WQBEL for TIN." Fact Sheet Addendum at 5.

[33] NWEA submitted extensive comments on this issue to the Region during the second public comment period for the Lummi Permits. *See* NWEA Second Comment Letter–Sandy Point at 7–10; NWEA Second Comment Letter–Gooseberry Point at 1 (incorporating and adopting NWEA's Second Comment Letter for Sandy Point).

Puget Sound. Fact Sheet Addendum at 4–6. The Region's Response to Comments fares no better; while it describes what the two conditions are intended to accomplish, it says nothing about the likelihood that they will ensure compliance with the DO or other water quality standards.[34] *See* Gooseberry Point Response to Comments at 3, 7. These failures alone warrant remand of the Permit. *See City of Marlborough,* 12 E.A.D. at 251 (remanding NPDES permit where the Region "failed to demonstrate" on the record that the permit "will ensure compliance with" applicable water quality standards); *District of Columbia*, 10 E.A.D. at 342–43 (remanding a permit that used BMPs in lieu of numeric WQBELs where the record lacked "an articulation by the permit writer of his analysis" and where the Board found "nothing in the record . . . that supports the conclusion that the Permit would, in fact, achieve water quality standards.").[35]

[34] According to the Region, the Lummi WWTPs' Nitrogen Optimization Plans "will require the permittee to assess and implement strategies for optimizing the operation of the facility to reduce nitrogen in the effluent," and the Nitrogen Reduction Evaluations "will require the permittee to assess future practices that will further reduce nutrient discharges and help inform future permits." Response to Comments at 7.

[35] The District of Columbia's 401 certification was part of the permit record in that case, but the Board found that the certification, without more, was insufficient to support a conclusion that the BMPs would ensure compliance with water quality standards. *District of Columbia*, 10 E.A.D. at 343 ("Moreover, Petitioners argue, and the Region does not dispute, that the Region cannot rely exclusively on District's section 401 certification, at least in a circumstance like this one in which there is a body of information drawing the certification into question."). Similarly here, Ecology's 401 Certification—issued in 2021 and based on an outdated draft permit—has been fatally undermined by Ecology's more recent determination that all WWTPs discharging to Puget Sound contribute to the Sound's DO impairment.

Even if the Region had made—and expressed in writing—the requisite finding under 40 C.F.R. § 122.44(d)(1) that the NOP and NRE conditions it imposed in lieu of a numeric nitrogen WQBEL would ensure compliance with the DO water quality standard in Puget Sound, that finding is unsupported on the present record. The Region incorrectly states that the NOP condition requires the Lummi WWTPs to "immediately begin reducing nitrogen in the effluent[.]" Gooseberry Point Response to Comments at 3; Sandy Point Response to Comments at 3. This is false; as written, the Lummi Permits do not require the WWTPs to implement any particular optimization strategy by any date certain, so long as it submits periodic reports on things like the "anticipated and unanticipated challenges" of implementing the optimization strategy. *See* Gooseberry Point Permit and Sandy Point Permit at 2 (compliance schedule, lacking any firm date for implementation of the chosen optimization strategy); Gooseberry Point Permit and 12, and Sandy Point Permit at 12–13 (implementation of any particular optimization strategy not required). Instead, the Permit leaves the Lummi WWTPs in a potentially endless cycle of "adaptive management" whereby it can "re-evaluate the optimization strategies" for nutrient removal over and over again so long as it submits a report to the Region each time. Gooseberry Point Permit at 12.[36]

[36] It is plausible under the Lummi Permits that the NOP will achieve no nitrogen reductions at all. The Lummi WWTPs may very well complete the required assessment, concluding that no optimization strategy exists for the facility that would reduce nitrogen discharges beyond those "found to exceed a reasonable implementation cost or timeframe that exceeds one year," and report as much to the Region in its NOP. *See* Gooseberry Point Permit at 11. The Lummi Permits

Moreover, the requirement to prepare a NOP bears no relationship to water quality standards compliance in Puget Sound. The plan will instead focus entirely on optimizing the Lummi WWTPs' existing *technology*. *See* Gooseberry Point Permit at 11–12. Similarly, the record makes clear that the Region considers the NRE to be more akin to a *technology-based* condition, wholly unrelated to the DO water quality standard in Puget Sound, because it requires the Lummi WWTPs to "evaluate treatment alternatives for meeting a lower limit of technology for nitrogen removal." Fact Sheet Addendum at 5.

Indeed, the NOP and NRE conditions in the Lummi Permits are not even effluent limitations or BMPs within the meaning of 40 C.F.R. § 122.2. That regulation defines an "effluent limitation" as a restriction "on quantities, discharge rates, and concentrations of pollutants" discharged by a point source, and defines BMPs as "schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to *prevent or reduce . . . pollution*." *Id*. (emphasis added). The NOP and NRE conditions in the Lummi Permits do not satisfy either of these definitions.

Federal courts have upheld the use of BMPs in NPDES permits, but only where they require concrete, pollution-reducing actions by the permittee. *See NRDC I*, 568 F.2d at 1380 ("when numerical effluent limitations are infeasible, EPA may issue permits with conditions designed to r*educe the level of effluent discharges to*

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contemplates that the WWTPs may not meet or "exceeded the pre-optimization empirical TIN removal rate" even after the NOP is completed. *Id*. at 13.

acceptable levels. This may well mean opting for a gross reduction in pollutant discharge rather than the fine-tuning suggested by numerical limitations.") (emphasis added); *NRDC II*, 808 F.3d at 579 (noting that something that "is neither a practice nor a procedure" does "not quality as a BMP").[37] As noted above, no such reductions in nitrogen pollution are required under the NOP and NRE conditions, and thus the conditions do not ensure compliance with water quality standards as mandated by 40 C.F.R. §§ 122.4(d) and 122.44(d)(1).

In short, the NOP and NRE conditions that the Region included in the Lummi Permits in lieu of numeric nitrogen WQBELs will not, and are not capable of, ensuring compliance with the DO water quality standard in Puget Sound as required by the Clean Water Act and EPA's implementing regulations. Both Lummi Permits should accordingly be set aside and remanded to the Region.

CONCLUSION

For the foregoing reasons, NWEA respectfully seeks review by the Board of the Gooseberry Point and the Sandy Point Permits as discussed herein. After such review, the Board should find that the Region committed clear error in issuing the Permits; find that the Permits fail to ensure compliance with water quality

[37] The Second Circuit in *NRDC II* provided several examples of "BMPs that have been accepted as substitutes for effluent limits"—each of which involved concrete practices intended to reduce or eliminate pollution discharges to surface waters. 808 F.3d at 579.

standards as required by the Clean Water Act and 40 C.F.R. §§ 122.4(d) and 122.44(d); and should set aside and remand the Permits to the Region.

Dated: September 9, 2024.

s/ James N. Saul
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CERTIFICATION OF COMPLIANCE WITH WORD LIMITATION

In accordance with 40 C.F.R §§ 124.19(d)(1)(iv) and (d)(3), I hereby certify that this petition does not exceed 14,000 words. Not including the cover page, the table of contents, and the table of authorities, this petition contains 12,223 words (including footnotes), as counted by Microsoft Word. This petition is written in Century Schoolbook, 12 point font.

s/ James N. Saul

CERTIFICATE OF SERVICE

I hereby certify that on September 9, 2024, I caused to be served a true and correct copy of the foregoing Petition for Review upon the following by First Class U.S. Mail:

Casey Sixkiller
Regional Administrator
U.S. EPA, Region 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101

Mr. Jim Heitzman
District Manager
Lummi Tribal Sewer and Water District
2156 Lummi View Drive
Bellingham, WA 98226

s/ James N. Saul

INDEX OF ATTACHMENTS AND EXHIBITS

The following documents are provided by petitioner Northwest Environmental Advocates as attachments and exhibits to its foregoing Petition for Review of NPDES Permit Nos. WA0025666 (Gooseberry Point WWTP) and WA0025658 (Sandy Point WWTP), issued by EPA Region 10 to the Lummi Tribal Sewer and Water District:

Exhibit No.	**Beginning Bates No.**	**Description**
1	NWEA001	Wash. Dept. of Ecology, *Fact Sheet for the Puget Sound Nutrient Draft General Permit* (December 1, 2021)
2	NWEA086	Ben Cope, EPA Region 10, Office of Environmental Review and Assessment, *Regulatory Models and Salish Sea Model Development* (2021)
3	NWEA103	Wash. Dept. of Ecology, *Puget Sound Nutrient Reduction Project, Volume 1: Model Updates and Bounding Scenarios* (Jan. 2019)
4	NWEA205	Wash. Dept. of Ecology, *Technical Memorandum: Puget Sound Nutrient Source Reduction Project, Phase II – Optimization Scenarios (Year 1)* (Sept. 9, 2021)
5	NWEA258	Wash. Dept. of Ecology, *Nutrient Forum Meeting Packet* (February 2022)
6	NWEA281	Dustin Bilhimer, Wash. Dept. of Ecology, *Puget Sound Nutrient Source Reduction Project: Marine DO Alternative Restoration Plan* (May 3, 2022)
7	NWEA299	Wash. Dept. of Ecology, *Budd Inlet Dissolved Oxygen Total Maximum Daily Load* (Oct. 2022)