NORTHWEST ENVIRONMENTAL ADVOCATES

July 6, 2023

Tricia Miller, Permit Administrator
WA State Dept of Ecology - NWRO
PO Box 330316
Shoreline, WA 98133-9716 *Via online*: https://wq.ecology.commentinput.com/?id=Ka9ES

Re: **Proposed Permit for West Point Wastewater Treatment Plant and Combined Sewer Overflows**

Dear Ms. Miller:

The following comments are submitted by Northwest Environmental Advocates on the aforementioned permit.

I. NPDES PERMITS ARE PROHIBITED FROM CAUSING OR CONTRIBUTING TO VIOLATIONS OF WATER QUALITY STANDARDS

A. Discharges are Prohibited from Causing or Contributing to Violations of Water Quality Standards; Reasonable Potential Findings Required

If the technology-based limits required by the statute and regulations are not sufficient to ensure that a discharge will not cause or contribute to violations of water quality standards, permits must include water quality-based effluent limits (WQBEL). 33 U.S.C. §§ 1311(b)(1)(C), 1342(a)(2) ("[T]here shall be achieved . . . any more stringent limitation, including those necessary to meet water quality standards . . . established pursuant to any State law or regulations [.]"); *see also, id.* §§ 1311(e), 1312(a), 1313(d)(1)(A), (d)(2), (e)(3)(A); 40 C.F.R. §§ 122.4(a), (d). (The federal regulations are made applicable to states by 40 C.F.R. § 123.25(a).) The agency issuing an NPDES permit "is under a specific obligation to require that level of effluent control which is needed to implement existing water quality standards without regard to the limits of practicability." S. Rep. No. 92-414, at 43 (1971). Because WQBELs are set irrespective of costs and technology availability, they further the technology-forcing policy of the CWA. *See NRDC v. U.S. E.P.A.*, 859 F.2d 156, 208 (D.C. Cir. 1987) ("A technology-based standard discards its fundamental premise when it ignores the limits inherent in the technology. By contrast, a water quality-based permit limit begins with the premise that a certain level of water quality will be maintained, come what may, and places upon the permittee the responsibility for realizing that goal."); *see also Riverkeeper, Inc. v. U.S. E.P.A.*, 475 F.3d 83,

108 (2d Cir. 2007) (Sotomayor, J.) (referencing the Act's "technology-forcing imperative"), *rev'd sub nom by Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208 (2009).

WQBELs must be set at a level that achieves water quality standards developed by the states for waters within their boundaries. *See* 33 U.S.C. §§ 1313(a)(3), (c)(2)(a); 40 C.F.R. Part 131; *PUD No. 1 of Jefferson Cnty. v. Wash. Dept. of Ecology*, 511 U.S. 700, 704–707 (1994); WAC 173-220-130(1)(b)(i) and (iii), (2), (3)(b); *Port of Seattle v. Pollution Control*, 90 Pd.3d 659, 677 (Wash. 2004) ("NPDES permits may be issued only where the discharge in question will comply with state water quality standards."); *Defenders of Wildlife v. Browner*, 191 F.3d 1159, 1163 (9th Cir. 1999). Such water quality standards consist of designated uses for waters and water quality criteria (both numeric and narrative) necessary to protect those uses. 33 U.S.C. § 1313(c)(2)(a); 40 C.F.R. §§ 131.10–.11. Under the CWA's "antidegradation policy," state standards must also protect existing uses of waters and prevent their further degradation. 40 C.F.R. § 131.12; *see also* WAC 173-201A-010(1)(a) ("All surface waters are protected by numeric and narrative criteria, designated uses, and an antidegradation policy.").

EPA's permitting regulations mirror the statutory requirement for WQBELs. 40 C.F.R. § 122.44(d). NPDES effluent limitations must control all pollutants that are or may be discharged at a level "which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." 40 C.F.R. § 122.44(d)(1)(i). Accordingly, WQBELs in NPDES permits must be "derived from" and comply with all applicable water quality standards. 40 C.F.R. § 122.44(d)(1)(vii). WQBELs are typically expressed numerically, but when "numeric effluent limitations are infeasible," a permit may instead require "[b]est management practices (BMPs) to control or abate the discharge of pollutants." 40 C.F.R. § 122.44(k)(3). However, "[n]o permit may be issued: . . . [w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States." 40 C.F.R. § 122.4(d).

When EPA or states establish WQBELs, they must translate applicable water quality standards into permit limitations. *See Trustees for Alaska v. U.S. E.P.A.*, 749 F.2d 549, 556–57 (9th Cir. 1984) (holding that a permit must do more than merely incorporate state water quality standards—it must translate state water quality standards into the end-of-pipe effluent limitations necessary to achieve those standards). As the D.C. Circuit put it, "the rubber hits the road when the state-created standards are used as the basis for specific effluent limitations in NPDES permits." *American Paper Inst., Inc. v. U.S. E.P.A*, 996 F.2d 346, 350 (D.C. Cir. 1993). NPDES "permits authorizing the discharge of pollutants may issue only where such permits *ensure* that every discharge of pollutants will comply with all applicable effluent limitations and standards[.]" *Waterkeeper Alliance, Inc. v. EPA*, 399 F.3d 486, 498 (2d Cir. 2005) (emphasis in original).

Although numeric criteria may be easier to translate into a permit limitation, permit writers must also translate state narrative standards. *See id.* EPA regulations clearly specify that narrative criteria must be evaluated and must be met, and that limits must be established to ensure they are met. *See* 40 C.F.R. §§ 122.44(d)(1) (limits must be included to "[a]chieve water quality standards established under section 303 of the CWA, *including State narrative criteria* for water

quality"); 122.44(d)(1)(i) (limitations must include all parameters "*including State narrative criteria* for water quality"); 122.44(d)(1)(ii) (reasonable potential must be evaluated for "in-stream excursion *above a narrative* or numeric criteria"); 122.44(d)(1)(v) (WET tests required where reasonable potential exists to cause or contribute to a narrative criterion excursion unless chemical-specific pollutants are "sufficient to attain and maintain applicable numeric and *narrative State water quality standards*"); 122.44(d)(1)(vi) (options for establishing limitations where reasonable potential exists for a discharge to cause or contribute to an excursion *above a narrative criterion*) (emphases added). As the court in *American Paper* found, when it upheld EPA's permitting regulations pertaining to narrative criteria, faced with the conundrum of narrative criteria "some permit writers threw up their hands and, *contrary to the Act*, simply ignored water quality standards including narrative criteria altogether when deciding upon permit limitations. *Id*. at 350 (emphasis added); *see also id.* at 353 ("[EPA's] initiative seems a preeminent example of gap-filling in the interest of a continuous and cohesive regulatory regime[.]"); *City of Taunton, Massachusetts v. U.S. Environmental Protection Agency*, 895 F. 3d 120, 133 (1st Cir. 2018) ("When issuing NPDES permits for states that employ narrative criteria, the EPA must translate those criteria into a 'calculated numeric water quality criterion.'").

EPA has explained that a WQBEL is "[a]n effluent limitation determined by selecting the most stringent of the effluent limits calculated using all applicable water quality criteria (e.g., aquatic life, human health, wildlife, translation of narrative criteria) for a specific point source to a specific receiving water." EPA, *NPDES Permit Writers' Manual*, Appendix A at A-17 (Sept. 2010) (hereinafter "EPA Manual").[1] The first step in establishing a WQBEL is determining if one is required. 40 C.F.R. § 122.44(d)(1) ("Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."). Because one requirement in issuing a WQBEL is both to determine if the discharge, collectively with other sources of the same pollutant, are causing or contributing to violations of water quality standards, and to limit that discharge accordingly, the federal regulations require the permit writer to assess the role of other sources in causing the violation. *Id.* at § (d)(1)(ii) ("When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water."). If, having conducted this evaluation, the permit writer determines that a discharge "causes, has the reasonable potential to cause, or contributes to an instream excursion above the allowable above the allowable ambient concentration of a State numeric criteria within a State water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant." *Id.* at § (d)(1)(iii). Where a state finds a reasonable potential to cause or contribute to a violation of narrative criteria for which the state has no numeric criteria, the federal regulations establish methods for establishing effluent limits. *Id*. at § (d)(1)(vi)(A)-(C).

[1] *Available at* http://www.epa.gov/npdes/pubs/pwm_app-a.pdf .

The matter of determining whether a discharge is causing or contributing to a violation of standards is not resolved by the permit writer's merely looking at the point of discharge and whether it is on the state's 303(d) list for a parameter or pollutant discharged or affected by a parameter or pollutant in the discharge. The process begins with a determination of reasonable potential:

> NPDES permits "must control all pollutants or pollutant parameters" that the EPA "determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." 40 C.F.R. § 122.44(d)(1)(i). The EPA has interpreted "reasonable potential" to mean "some degree of certainty greater than a mere possibility." *In re Upper Blackstone Water Pollution Abatement Dist*., 14 E.A.B 577, 599 n. 29 (EAB 2010).

City of Taunton, 895 F. 3d at 133.

First, there is a question of the nature of the parameter or pollutant discharged and how it is anticipated to affect water quality. Nitrogen discharges are among those pollutants that have a far-field effect, creating impacts on dissolved oxygen and algal growth—which can be both deleterious by itself and contribute to lowered dissolved oxygen—far away from the point of discharge. *See, e.g.*, EPA Manual at 176 ("Nutrients are another class of pollutants which would be examined for impacts at some point away from the discharge. The special concern is for those water bodies quiescent enough to produce strong algae blooms. The algae blooms create nuisance conditions, dissolved oxygen depletion, and toxicity problems (i.e., red tides or blue-green algae); *id*. at 198 ("[pollutants] such as BOD may not reach full effect on dissolved oxygen until several days travel time down-river.").

For pollutants such as nutrients, the Environmental Appeals Board (EAB) has held that:

> The plain language of the regulatory requirement (that a permit issuer determine whether a source has the "reasonable potential to cause or contribute" to an exceedance of a water quality standard) does not require a conclusive demonstration of "cause and effect." *See In re Upper Blackstone Water Pollution Abatement Dist*., NPDES Appeal Nos. 08-11 through 08-18 & 09-06, slip op. at 31-34 & n.29 (EAB May 28, 2010), 14 E.A.D. ___.

In re Town of Newmarket, NPDES Appeal No. 12-05, slip op. at 54 n. 23 (EAB Dec. 2, 2013) (emphasis added); *see also City of Taunton*, 895 F. 3d at 136 ("the EPA did not need to show causation . . . to support its conclusion that the Taunton Estuary was nutrient impaired. Rather, the EPA needed only to conclude that the further discharge of nitrogen had the 'reasonable potential to cause, or contribute to an excursion above any State water quality standard.'"). In other words, the fact of a source's contributing to loading of a pollutant that has been identified to be causing a water quality impairment is sufficient to support a reasonable potential determination.

Second, there is a question as to whether a waterbody must actually be impaired in order for a discharge to present a reasonable potential to cause or contribute to violations of water quality standards. Again, the EAB provides assistance on the plain meaning of the permitting regulations and the policy rationale behind them:

> NPDES regulations do not support the City's contention that a permit authority must include effluent limits only for the pollutants discharged into receiving waters that are identified as impaired on the state's 303(d) list.
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> NPDES permitting under CWA section 301 applies to individual discharges and represents a more preventative component of the regulatory scheme [than 303(d)] in that, under section 301, no discharge is allowed except in accordance with a permit. Moreover, the CWA's implementing regulations require the Region to include effluent limits in discharge permits based on the reasonable potential of a discharge facility to cause or contribute to exceedances of water quality standards, even if the receiving water body is not yet on a state's 303(d) list. *See* 40 *C.F.*R. § 122.44(d)(1)(i). Although a 303(d) listing could presumably establish that water quality standards are being exceeded, necessitating an appropriate permit limit, the Region is not constrained from acting where a water body has not yet been placed on the 303(d) list. *Id.; see also In re Upper Blackstone Water Pollution Abatement Dist., 14* E.A.D. 577, 599 (EAB 2010) (explaining that the NPDES regulations require a "precautionary" approach to determining whether the permit must contain a water quality-based effluent limit for a particular pollutant), aff'd. 690 F.3d 9 (1st Cir. 2012), *cert. denied*, 133 S. Ct. 2382 (2013).

In re: City of Taunton Department of Public Works, NPDES Appeal No. 15-08, slip op. at 38-39 (EAB May 3, 2016), *aff'd*. 895 F.3d 120 (1st Cir. 2018); *see also City of Taunton*, 895 F. 3d at 137 ("we hold that the EPA did not act arbitrarily or capriciously in determining that the Taunton Estuary and Mount Hope Bay were already nutrient impaired, such that further nitrogen discharges would have at least a 'reasonable potential' to give rise to violations of state water quality standards.").

Third, there is the question of whether a permit writer can simply not include an effluent limit because to do so is challenging. Clearly the statute and regulations demonstrate that the answer is "no." Federal courts agree. The Second Circuit cited with approval its decision in *Waterkeeper All., Inc. v. EPA,* 399 F.3d 486, 498 (2d Cir. 2005) for the proposition that "NPDES permits 'may issue only where such permits *ensure* that every discharge of pollutants will comply with all applicable effluent limitations and standards.'" *N.R.D.C. v. U.S. EPA* 808 F.3d 556, 578 (2d Cir. 2015) (emphasis in original). Moreover:

> Even if determining the proper standard is difficult, EPA cannot simply give up and refuse to issue more specific guidelines. *See Am. Paper Inst., Inc. v. EPA*, 996 F.2d 346, 350 (D.C. Cir. 1993) (articulating that, even if creating permit limits is difficult, permit writers cannot just "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"). Scientific uncertainty does not allow EPA to avoid responsibility for regulating discharges. *See Massachusetts v. EPA*, 549 U.S. 497, 534 (2007) ("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.").

Id.. The First Circuit and EAB have agreed that uncertainty does not excuse the permit writer from its obligation to set permit limits. *Upper Blackstone Water Pollution Abatement Dist. v. U.S. EPA*, 690 F.3d 9 (1st Cir. 2012), *cert. denied*, 133 S. Ct. 2382 (2013); *In re City of Taunton* at 61-62; *City of Taunton*, 895 F. 3d at 140 (citing *Massachusetts v. EPA*, 549 U.S. 497, 534, 127 S.Ct. 1438, 167 L.Ed. 2d 248 (2007) (explaining that the EPA cannot avoid its statutory obligation to regulate greenhouse gases by "noting the uncertainty surrounding various features of climate change" when "sufficient information exists to make an endangerment finding").

Fourth, there is a question as to whether in the absence of a TMDL a permit must comply with the statute and regulations that require compliance with water quality standards. There is no question that it must; the lack of a TMDL is no defense for a failure to find reasonable potential and to establish a WQBEL. As the First Circuit has explained,

> TMDLs take time and resources to develop and have proven to be difficult to get just right; thus, under EPA regulations, permitting authorities must adopt interim measures to bring water bodies into compliance with water quality standards. *Id*. § 1313(e)(3); 40 C.F.R. § 122.44(d); *see also, e.g.*, 43 Fed. Reg. 60,662, 60,665 (Dec. 28, 1978) ("EPA recognizes that State development of TMDL's and wasteload allocations for all water quality limited segments will be a lengthy process. Water quality standards will continue to be enforced during this process. Development of TMDL's . . . is not a necessary prerequisite to adoption or enforcement of water quality standards . . . .").

Upper Blackstone Dist., 690 F.3d at 14, n. 8. The First Circuit also explained that waiting for the completion of exhaustive studies is equally unacceptable:

> [N]either 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. . . . The Act's goal of "eliminat[ing]" the discharge of pollutants by 1985 underscores the importance of making progress on the available data. 33 U.S.C. § 1251(a)(1).

Id. Likewise, the EAB recently held the same:

> Where TMDLs have not been established, water quality-based effluent limitations in NPDES permits must nonetheless comply with applicable water quality standards. In discussing the relationship between NPDES permitting and

> TMDLs, EPA has explained that the applicable NPDES rules require the permitting authority to establish necessary effluent limits, even if 303(d) listing determinations and subsequent TMDLs lag behind. 54 Fed. Reg. 23,868, 23,878, 23,879 (June 2, 1989); *see also In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 604-05 (EAB 2010) (expressly rejecting the idea that the permitting authority cannot proceed to determine permit effluent limits where a TMDL has yet to be established), *aff'd*. 690 F.3d 9 (1st Cir. 2012), *cert. denied*, 133 S. Ct. 2382 (2013).

In re City of Taunton at 11; *see also id.* at 40-41 (citing, *inter alia*, 54 Fed. Reg. 23,868, 23,879 (June 2, 1989) (clarifying in the preamble to 40 C.F.R. § 122.44 that subsection (d)(1)(vii) "do[es] not allow the permitting authority to delay developing and issuing a permit if a wasteload allocation has not already been developed and approved"); *see also* Ecology, *Water Quality Program Permit Writer's Manual* (Revised July 2018) (hereinafter "Ecology Manual") at 195 ("In the absence of a basin TMDL and the resultant WLA, the permit writer must develop an individual WLA.").[2]

In its Permit Writer's Manual, Ecology misstates the law by creating an exemption that is not justified or supported by the statute, federal or state regulations, or case law:

> If the pollutant is a far-field pollutant, is present in the discharge and is the subject of a TMDL in progress, the permit writer may defer any water quality-based limits on the pollutant until the TMDL is completed and a WLA is assigned. When the WLA is assigned the permit writer may modify the permit or incorporate the WLA at the next reissuance, depending on timing.

Id. at 198.[3] Similarly, the guidance states that if a TMDL has not been started yet, the permit writer may ask the question: "Can the effluent be treated or can the effluent or pollutant(s) be removed seasonally at a cost which is economically achievable or reasonable"? *Id*. at 199 fig. 23. This question and the options that flow from its answers are not supported in federal law.

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[2] This statement is immediately contradicted on the next page in the Ecology Manual, which incorrectly asserts that a "basic principle" of permitting is that:

> A point source discharging to a water body with multiple sources (point and nonpoint) of impairment, which is a minor source of the impairment, and may gain relief from a TMDL is not required to have a final limitation as the numeric water quality criteria before a TMDL is completed.

Id. at 196. In fact, there is no such exemption for minor sources in the statute or the regulations nor is there any provision for a permit writer to determine whether a TMDL may provide "relief" to a discharger. Ecology cites no law to support its principle.

[3] *See also, id.* at 179 ("Suspected water quality problems due to nutrients are best handled by a TMDL process conducted by the EA Program.") While this may very well be true, if Ecology does not develop TMDLs its permit writers must still meet federal and state regulatory requirements when issuing NPDES permits.

There is no provision in the statute or regulations for deferring needed WQBELs based on TMDLs' being in progress. In fact, delaying an effluent limit due to the time needed to develop a TMDL is parallel to allowing a compliance schedule to meet an effluent limit due to the time needed to develop a TMDL—an approach EPA has determined is prohibited.[4]

Fifth, in the absence of a TMDL, is the permit writer obligated to assess the individual discharger's responsibility to cease contributing to violations of water quality standards? Not only do the federal regulations explain that the answer is clearly "yes," as discussed above, but so has the First Circuit:[5]

> The Act's TMDL and interim planning process both contemplate pollution control where multiple point sources cause or contribute to water quality standard violations. 33 U.S.C. § 1313(d), (e). Under earlier legislation, including the 1965 Federal Water Pollution Control Act, when a water body failed to meet its state-designated water quality standards, pollution limits could not be strengthened against any one polluter unless it could be shown that the polluter's discharge had caused the violation of quality standards. *See EPA v. California ex rel. State Water Res. Control Bd.*, 426 U.S. 200, 202-03 (1976). This standard was ill-suited to the multifarious nature of modern water pollution and prevented the imposition of effective controls. *Id.* In 1972, Congress declared that the system was "inadequate in every vital aspect," and had left the country's waterways "severely polluted" and "unfit for most purposes." S. Rep. No. 92-414, at 3674 (1971). The CWA rejected the earlier approach and, among other things, introduced individual pollution discharge limits for all point sources. 33 U.S.C. 1311(b). To maintain state water quality standards, the Act establishes the TMDL and continuing planning processes, which target pollution from multiple sources. *Id*. § 1313(d), (e). . . . We thus reject the notion that in order to strengthen the District's discharge limits, the EPA must show that the new limits, in and of themselves, will cure any water quality problems.

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[4] *See* Memorandum from James A. Hanlon, Director, Office of Wastewater Management, EPA, to Alexis Strauss, Director, Water Division, EPA Region 9 Re: *Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits* (May 10, 2007) at 3 ("A compliance schedule based solely on time needed to develop a Total Maximum Daily Load is not appropriate, consistent with EPA's letter of October 23, 2006 to Celeste Cantu, Executive Director of the California State Water Resources Control Board, in which EPA disapproved a provision of the Policy for Implementation of Toxic Standards for Inland Waters, Enclosed Bays, and Estuaries for California.").

[5] Ecology has not even committed to using its modeling results for Puget Sound to develop a TMDL that would lead to wasteload allocations for dischargers such as this. *See, e.g.*, Ecology, *South Puget Sound Dissolved Oxygen Study Water Quality Model Calibration and Scenarios* (March 2014) at 22 ("Ecology may not conduct a TMDL if alternative management approaches are used to address violations."). The agency cannot simultaneously refuse to develop a TMDL and claim that it is waiting to complete a TMDL before it develops wasteload allocations for specific dischargers' NPDES permits.

Upper Blackstone Dist., 690 F.3d at 32-33. The law clearly establishes that an NPDES permit may not be issued for discharges that may cause or contribute to violations of water quality standards. While "cause" may be considered to refer to the sole source of a violation, "contribute" sweeps all sources of a pollutant into the regulatory requirements, including the permittee. Federal regulations provide only very limited exceptions. For example, 40 C.F.R. § 122.44(d)(1)(ii) requires that in determining reasonable potential a permit authority "use procedures which account for existing controls on point and nonpoint sources of pollution."

Last, there is a question related to whether the waterbody is impaired but is not currently listed on the state's EPA-approved 303(d) list.[6] The key here is impairment, not the technicality of 303(d) listing. *See In re City of Taunton* at 38 ("NPDES regulations do not support the City's contention that a permit authority must include effluent limits only for the pollutants discharged into receiving waters that are identified as impaired on the state's 303(d) list."). Moreover, the finding of reasonable potential has repeatedly been deemed to be a low bar in order to ensure that NPDES permits protect water quality. EPA regulations require that NPDES limits "*must* control all pollutants" that "*may be* discharged at levels" that will cause or contribute to violations. 40 C.F.R. § 122.44(d)(1)(i) (emphasis added). The emphasis is regulation of discharges that *may* be a problem. As the EAB observed of EPA's action of issuing a permit with nutrient limits,

> the Region observed that "[e]ven if the evidence is unclear that a pollutant is currently causing an impairment, a limit may be required if the pollutant has the reasonable potential to cause, or contribute to an exceedance of a water quality standard (i.e., the permit limit may be preventative)." Response to Comments at 36. The Region also noted that "the pollutant need not be the sole cause of an impairment before an NPDES limit may be imposed; an effluent limit may still be required, if the pollutant 'contributes' to a violation." *Id*. (citing *In re Town of Newmarket*, NPDES Appeal No. 12-05, slip op. at 54 n. 23 (EAB Dec. 2, 2013), 16 E.A.D. ___). Ultimately, the Region concluded that the City's discharges cause, have a reasonable potential to cause, or contribute to nitrogen-related water quality violations in the Taunton Estuary and Mount Hope Bay. . . . As such,

[6] Ecology's Permit Writer's Manual incorrectly states the law in asserting two "basic principles." The first assertion is that "[a] water body listed on the 303(d) list is not a presumption of impairment unless the listed section is the point of discharge." *Id.* at 194. While this statement is less than clear, it appears to suggest that a discharge to a non-listed segment that flows into a downstream listed segment is not a discharge that contributes to a violation of water quality standards. This is incorrect. Washington's water quality standards require that "[u]pstream actions must be conducted in manners that meet downstream water body criteria." WAC 173-201A-260(3)(b); *see also* 40 C.F.R. § 131.10(b) ("the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.").

> CWA regulations required the Region to impose a nitrogen limit in the Permit. *See* 40 C.F.R. § 122.44(d)(1)(vi)[.]

In re City of Tauton at 37.

B. Applicable Water Quality Standards

Water quality standards are defined as the designated beneficial uses of a water body, in combination with the numeric and narrative criteria to protect those uses and an antidegradation policy. 40 C.F.R. § 131.6. The CWA requires numeric criteria adopted in water quality standards to protect the "most sensitive use." 40 C.F.R. § 131.11(a)(1).

However, since that is not always possible, the task of evaluating whether standards have been met also requires an assessment of the impacts to designated beneficial uses. In *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 114 S. Ct. 1900, 1912 (1994), the U.S. Supreme Court underscored the importance of protecting beneficial uses as a "complementary requirement" that "enables the States to ensure that each activity—even if not foreseen by the criteria—will be consistent with the specific uses and attributes of a particular body of water." The Supreme Court explained that numeric criteria "cannot reasonably be expected to anticipate all of the water quality issues arising from every activity which can affect the State's hundreds of individual water bodies." *Id*.[7] In short, a permitting agency cannot ignore the narrative criteria and use only numeric criteria where either numeric criteria do not exist or where the numeric criteria fall short of providing full support for designated uses.

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[7] EPA regulations implementing section 303(d) of the CWA reflect the independent importance of each component of a state's water quality standards:

> For the purposes of listing waters under §130.7(b), the term "water quality standard applicable to such waters" and "applicable water quality standards" refer to those water quality standards established under section 303 of the Act, including numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements.

40 C.F.R. § 130.7(b)(3). When EPA adopted these regulations, it clearly stated the expectations it had of states:

> In today's final action the term "applicable standard" for the purposes of listing waters under section 303(d) is defined in § 130.7(b)(3) as those water quality standards established under section 303 of the Act, including numeric criteria, narrative criteria, waterbody uses and antidegradation requirements. In the case of a pollutant for which a numeric criterion has not been developed, a State should interpret its narrative criteria by applying a proposed state numeric criterion, an explicit State policy or regulation (such as applying a translator procedure developed pursuant to section 303(c)(2)(B) to derive numeric criteria for priority

Washington's water quality standards for marine and fresh waters including Puget Sound are intended to be "consistent with public health and public enjoyment of the waters and the propagation and protection of fish, shellfish, and wildlife, pursuant to the provisions of chapter 90.48 RCW." WAC 173-201A-010(1). As in federal law, Washington's regulations make the legal definition of a water quality standard very clear: "All surface waters are protected by numeric and narrative criteria, designated uses, and an antidegradation policy." WAC 173-201A-010(1)(a). In addition, the state rules clarify that:

> Compliance with the surface water quality standards of the state of Washington requires compliance with chapter 173-201A WAC, Water quality standards for surface waters of the state of Washington, chapter 173-204 WAC, Sediment management standards, and applicable federal rules.

WAC 173-201A-010(4). The designated uses for marine waters are set out at WAC 173-201A-612, Table 612. Currently applicable dissolved oxygen criteria applicable to Puget Sound waters are set out at WAC 173-201A-210(1)(d). The designated uses for freshwaters are set out in WAC 173-201A-602 Table 602. The dissolved oxygen criteria for freshwater are set out in WAC 173-201A-200(1)(d). In addition, the following standards apply to both marine and fresh waters:

> Upstream actions must be conducted in manners that meet downstream water body criteria. Except where and to the extent described otherwise in this chapter, the criteria associated with the most upstream uses designated for a water body are to be applied to headwaters to protect nonfish aquatic species and the designated downstream uses.

WAC 173-201A-260(3)(b). Likewise, the following narrative criteria also apply to both marine and fresh waters:

> Toxic, radioactive, or deleterious material concentrations must be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health[.]

> toxic pollutants), EPA national water quality criteria guidance developed under section 304(a) of the Act and supplemented with other relevant information, or by otherwise calculating on a case-by-case basis the ambient concentration of the pollutant that corresponds to attainment of the narrative criterion. Today's definition is consistent with EPA's Water Quality Standards regulation at 40 CFR part 131. EPA may disapprove a list that is based on a State interpretation of a narrative criterion that EPA finds unacceptable.

> Aesthetic values must not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste[.]

WAC 173-201A-260(2)(a), (b) (hereinafter "narrative criteria"); *see also* WAC 173-201A-210(1)(b).

Finally, Washington's water quality standards contain an antidegradation policy, the purpose of which is to "[r]estore and maintain the highest possible quality of the surface waters of Washington" and "apply to human activities that are likely to have an impact on the water quality of a surface water." WAC 173-201A-300(2)(a), (c). To ensure this outcome, Tier I of the antidegradation policy "is used to ensure existing and designated uses are maintained and protected and applies to all waters and all sources of pollution." *Id*. (2)(e)(i). Tier I requires:

> (1) Existing and designated uses must be maintained and protected. No degradation may be allowed that would interfere with, or become injurious to, existing or designated uses, except as provided for in this chapter.
> (2) For waters that do not meet assigned criteria, or protect existing or designated uses, the department will take appropriate and definitive steps to bring the water quality back into compliance with the water quality standards.

WAC 173-201A-310. Federal regulations explain the meaning of "existing uses" that may not be designated uses: Tier I requires the maintenance and protection of "[e]xisting instream water uses and the level of water quality to protect the existing uses[.]" 40 C.F.R. § 131.12(a)(1). Existing uses are "those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards." 40 C.F.R. § 131.13(e).

Washington's antidegradation policy also includes the purpose of "ensur[ing] that all human activities that are likely to contribute to a lowering of water quality, at a minimum, apply all known, available, and reasonable methods of prevention, control, and treatment (AKART)[.]" WAC 173-201A-300; *see also* Laws of 1945, Ch. 216, § 1; RCW 90.48.520; RCW 90.52.040; RCW 90.54.020(3)(b); Washington Attorney General Opinion, AGO 1983 No. 23; Northwest Environmental Advocates, Petition for Rulemaking to Adopt a Presumptive Definition of "All Known, Available, and Reasonable Treatment" as Tertiary Treatment for Municipal Sewage Dischargers to Puget Sound and its Tributaries (Nov. 14, 2018) (hereinafter "AKART Petition"). AKART is defined as "the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge." WAC 173-201A-020. No discharger may be granted a mixing zone if it is not fully compliant with AKART. WAC 173-201A-400(2).

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II. THIS PERMIT FAILS TO COMPLY WITH THE CLEAN WATER ACT AND EPA'S IMPLEMENTING REGULATIONS

The proposed permit fails to comply with the legal requirements associated with issuing NPDES permits set out in Section I above. All current point source discharges of both nitrogen and toxics to Puget Sound, including from this permittee, are causing or contributing to violations of water quality standards in Puget Sound. The exact location of the point of any given discharge and its impairment status on the EPA-approved 303(d) list is irrelevant to this conclusion for several reasons. First, Ecology has carved the Puget Sound up into thousands of segments or grid cells and it does not and cannot expend the resources to obtain data for that number of small areas of Puget Sound. It cannot carve a waterbody into minute pieces for modeling or 303(d) listing purposes and then point to the absence of data for all the pieces as a rationale to avoid regulation. Second, the effects of both nutrients and toxics do not occur only at the point of discharge but, rather, in combination with other sources and other parameters wherever the circulation of water takes it. These far-field effects are not linked to effects at the precise point of discharge and therefore the analysis for the permit cannot be done on that basis alone. Ecology's statement that toxics are "near-field pollutants; their adverse effects diminish rapidly with mixing in the receiving water," Fact Sheet at 74, is factually incorrect.

In addition:

- Water quality standards are ignored or misrepresented in ways that include but are not limited to the following:
    - Receiving water quality for the discharges is incorrectly described and ignored in determining the need for effluent limitations. *See* 40 C.F.R. §§ 122.4(a), (d), 12.44(d)(1), 131.4(h); OAR 340-041-0046(2), OAR 340-041-0002(70).
    - Ecology ignores and misrepresents the legal definition of water quality standards in evaluating whether and how to calculate effluent limits. 33 U.S.C. § 1313(a)(3), (c)(2)(a); 40 C.F.R. §§ 131.3(b), (e), (i), 131.6(a), (c), (d), 131.12(a)(1); 40 C.F.R. §§ 122.4, 122.44(d)(1); *see also PUD No. 1 of Jefferson Cnty. v. Wash. Dept. of Ecology*, 114 S.Ct. 1900 (1994).
    - Ecology failed to establish effluent limits based on and that will ensure the protection of designated uses. 40 C.F.R. §§ 122.4, 122.44(d)(1). Boilerplate conclusions are inadequate.
    - Ecology failed to establish effluent limits based on, and that will ensure compliance with, the numeric water quality criteria. 40 C.F.R. §§ 122.4, 122.44(d)(1).
    - Ecology failed to establish effluent limits based on, and that will ensure compliance with, the narrative water quality criteria. 40 C.F.R. §§ 122.4, 122.44(d)(1). Boilerplate conclusions are inadequate. Note, for example, that EPA recently informed Ecology that nine of its numeric criteria for the protection of aquatic life are outdated and not sufficiently protective. Letter from Radhika Fox, EPA AA, to Laura Watson, Director Ecology (May 25, 2023) (pertaining to criteria for acrolein, aluminum, arsenic, cadmium, copper, cyanide, mercury, nickel, and selenium, some of which are at issue in this permit).

- Ecology failed to establish permit limits that will ensure compliance with the state antidegradation policy. Boilerplate conclusions are inadequate.
- Ecology has failed to demonstrate the proposed permit and the proposed discharge comply with the requirements of AKART. "'AKART' is an acronym for 'all known, available, and reasonable methods of prevention, control, and treatment.' AKART shall represent the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge." WAC 173-201A-020. The AKART standard is required for all dischargers. RCW 90.54.020(3)(b), 90.54.040; WAC 173-220-130(1)(a). AKART applies to discharges from domestic wastewater facilities. *Id*.; WAC 173-221-010. Boilerplate conclusions are inadequate.

- Some authorized mixing zones in the permit are or may be illegal including, but not limited to, for the following reasons:
  - AKART is required in order to obtain a mixing zones in Washington State. *See* WAC 173-201A-400(2); s*ee also BNSF Railway Co. v. Washington Ecology*, PCHB No. 11-150, Order on Summary Judgment (Dec. 4, 2012) at 20 ("Ecology's regulation governing mixing zones does require a showing that the applicant has fully implemented AKART before a mixing zone may be granted.").
  - Mixing zones authorized by the permit are not consistent with federal law because they result in the discharges contributing to violations of water quality standards. *See* 33 U.S.C. § 1313(a)(3), (c)(2)(a); 40 C.F.R. §§ 122.4, 122.44(d)(1).
  - Ecology has failed to comply with Washington case law on mixing zones. Citing WAC 173-201A-400(7), (8),"[t]he granting of a mixing zone, which allows the discharge of pollutants at a greater concentration than the calculated effluent limit, is an exception to the water quality standards and is to be granted sparingly." *Puget Soundkeeper Alliance v. Washington Ecology*, PCHB No. 13-137c, Findings of Fact, Conclusions of Law, and Order (July 23, 2015) at 43. Moreover, it held that "[g]iven their persistence and ability to bioaccumulate and biomagnify, a mixing zone for PCBs should rarely, if ever, be granted. *Id*. at 46. The PCHB cited to EPA's concerns and the effect of dischargers of toxic pollutants on contamination of sediments. *Id*. Because toxic pollutants are not only near-field pollutants, Ecology's failure to consider persistence and bioaccumulation of toxic contaminants in granting mixing zones is a violation of law.
  - Ecology incorrectly issues mixing zones for human pathogens. *See* Fact Sheet at 84. This is not saved by a citation to WAC 173-201A-400(11) that allows mixing zones for untreated CSO discharges. *See* Fact Sheet at 69. Unlike the rationale for aquatic life, in which fish can and often will avoid pollutants at hazardous levels, humans are not able to discern and then avoid discharges with unsafe levels of human pathogens. *See, e.g.,* 40 C.F.R. § 122.44(d)(1)(ii) ("When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the

variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and *where appropriate*, the dilution of the effluent in the receiving water.") (emphasis added). Mixing zones that cannot be detected or avoided are not "appropriate."
    - WET testing of effluent does not fully evaluate cumulative toxicity of effluent, contrary to Ecology's assertion. *See* Fact Sheet at 68.

- The permit fails to ensure that it will provide for compliance with applicable requirements of the Clean Water Act including, but not limited to, the following reasons:
    - For the West Point facility, Ecology may not assume that background concentrations for chlorine, cyanide, pentachlorophenol, and selenium are zero. *See* Fact Sheet at 90. The same is true for toxic pollutants where Ecology asserts that is does not have valid background data for the CSO treatment plants. *Id*. at 90–95. The same is true for toxic pollutants in covered discharges assessed for their impact to human health and compliance with human health numeric criteria. *Id*. at 95.
    - Mixing zones are not appropriate for bioaccumulative toxic pollutants.
    - Ecology cannot issue a permit without having conducted a reasonable potential analysis, as it states it plans to do for the Georgetown CSO Treatment Plant. *See id*. at 94.
    - Ecology fails to explain what area around these discharges qualify as "background concentrations" for the purpose of evaluating reasonable potential that the discharges will cause or contribute to violations of water quality standards.

- Monitoring and reporting are not consistent with legal requirements such as those set out at 40 C.F.R. §§ 122.43, 122.44(i), 122.48, including but not limited to the following:
    - Monitoring is not required for receiving water quality (including ambient, sediment, tissue) despite lack of data identified by Ecology.
    - The permit fails to require sufficient monitoring to carry out the assertions made in the Fact Sheet that "[a]s sufficient data becomes available, King County must, in consultation with Ecology, reevaluate its local limits in order to prevent pass-through or interference." Fact Sheet at 103; *see also id*. at 100 (As a pretreatment publicly owned treatment works (POTW), KC-WTD is required to sample influent, final effluent, and biosolids for toxic pollutants in order to characterize the industrial input. Sampling is also done to determine if pollutants interfere with the treatment process or pass-through the plant to the sludge or the receiving water. King County will use the monitoring data to develop local limits which commercial and industrial users must meet.").

- The Fact Sheet and Permit fail to explain the derivation of appropriate water quality-based effluent limits that are incorporated into the proposed permit and their consistency with 40 C.F.R. §§ 122.4, 122.43, 122.44, 122.47, 124.9, 124.56 including but not limited to the following:

  - The Fact Sheet does not demonstrate that the compliance schedule for the Elliot West CSO treatment plant improvements are consistent with federal compliance schedule regulations including that compliance be as soon as possible. 40 C.F.R. § 122.47(a)(1). Moreover, the compliance schedule in Permit ¶ S15.A, Table 36, does not demonstrate that it will meet the CWA because it ends with the completion of bidding for the improved project, not with compliance with effluent limits. *See* Memorandum from James A. Hanlon, EPA Office of Wastewater Management to Alexis Strauss, Director EPA Region 9 Water Division, Re: Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits (May 10, 2007).
  - The Fact Sheet does not explain how Ecology addressed effluent limitations related to contaminated sediments near the Georgetown and Henderson/MLK CSO Treatment Plants. *See* Fact Sheet at 49, 50. Remediation, either past or future, is not the legal standard pertaining to the discharge of pollutants pursuant to the CWA.
  - The Fact Sheet does not explain how Ecology has determined effluent limits for the "untreated CSO outfalls" listed in Table 26 of the Fact Sheet including many where monitoring has demonstrated that sediment quality standards have been exceeded. Fact Sheet at 50–53.

- The permit fails to comply with pretreatment requirements. As the Fact Sheet describes, the proposed permit requires monitoring for PFAS in influent to West Point, that the permittee "[i]dentify and locate all possible industrial users with discharges that are expected or suspected to contain PFAS," and that the permittee identify BMPs it "can require of industrial users." Fact Sheet at 103; *see also* Permit ¶ S6.E. This is not sufficient.
  - First, not only "industrial users" may be discharging PFAS to the influent.
  - Second, the use of the phrase "industrial users" is vague. Permit Condition S6.E.1 contains a list and then the statement that "[o]ther industries may include centralized waste treatment facilities, industrial laundries, or remediation sites." *Id*.
  - Third, it is unclear why it will take the permittee nearly two years to complete a list. At a minimum, the permit should require completion of the list in a much faster timeframe—not more than one year—with periodic additions if they are needed, rather than making identification of PFAS sources a one-time provision.
  - Fourth, there is no basis for the two-year timeframe for the permittee to "begin including a requirement in pretreatment permits" to complete an evaluation. The delay in putting the requirement into the pretreatment permits will then result in a delay in completing the evaluations. It does not take long to write such requirements, certainly not the proposed two years. In addition, the word "begin" means that there is no timeframe whatsoever for all of the identified PFAS sources to have such requirements included in their pretreatment permits.
  - The proposed permit implies that PFAS controls need only be limited to "*encouraging* pollution prevention, product substitution, and good housekeeping practices." Permit ¶ S6.E.3 (emphasis added). This is wholly inadequate to

ensure that PFAS is not discharged to the permittee's sewage collection system to the maximum extent possible. What kind of regulatory permit contains a condition limited to "encouraging" polluters to do the right thing? In addition, it is unclear what the meaning of Permit Condition ¶ S6.E.3 really is. The verb "evaluate" likely means "By July 1, 2025 *have evaluated*." The permit should require the results of this evaluation to be submitted to Ecology and made public.

- Ecology should include at a minimum those recommendations made by EPA. *See* Memorandum from Radhika Fox, EPA AA, to EPA Regional Water Division Directors, Re: *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment and Monitoring Programs* (Dec. 5, 2022). There is no need for NWEA to go through this entire guidance document and point out all the places where Ecology is ignoring it. Note, for example, that Ecology has chosen to propose a permit without monitoring for PFAS in the effluent and biosolids of the permittee's waste. Moreover, Ecology should go beyond the minimum suggested by EPA for publicly owned treatment works and incorporate all of the provisions set out in the recommendations for direct industrial dischargers to apply to indirect pretreaters. *Id.* at 2–4.

III. THIS PERMIT CANNOT DEFER TO THE PUGET SOUND NUTRIENT GENERAL PERMIT BECAUSE THE GENERAL PERMIT DOES NOT CONFORM TO THE CLEAN WATER ACT

Despite its conclusion that nitrogen from this facility has a "reasonable potential to contribute to existing low dissolved oxygen levels, below state water quality criteria, in the Salish Sea (which includes Puget Sound)," Fact Sheet at 83, Ecology asserts that it does not need to include nitrogen in its analysis and permit conditions for West Point because that pollutant is addressed with "requirements for the control and monitoring of nutrients," in the Puget Sound Nutrient General Permit ("PSNGP"), *id*. In this brief discussion, Ecology makes no mention of the *status* of the PSNGP on which it relies. In fact, significant portions of the permit are currently stayed because the numerous appeals of the general permit to the Washington Pollution Control Hearings Board ("PCHB") have been stayed indefinitely: "The PCHB has stated that it will not issue a decision or summary judgement until there is a resolution of a Thurston County Superior Court case that is currently before the Court of Appeals (Case # 56859-4-II). This means the PCHB hearing will likely be postponed until later in 2023 or 2024."[8] Among effluent limits that Ecology has stayed is the narrative requirement to comply with water quality standards, PSNGP Permit Special Condition S3.[9] This prohibits a covered discharge from causing or contributing to violations of water quality standards. *See* PSNGP Permit Special Condition S3.A. And it

> presumes that a Permittee complies with water quality standards unless

[8] Ecology, Appeals of the General Permit *available at* https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Nutrient-Permit.

[9] PCHB, *Amended Stipulation for Partial Stay of Puget Sound Nutrient General Permit* , PCHB 21-082c (Jan . 14, 2022) (hereinafter "Stay").

> discharge monitoring data or other site-specific information demonstrates that a discharge causes or contributes to a violation of water quality standards, when the Permittee complies with the following conditions. The Permittee must fully comply with all permit conditions, including planning, optimization, corrective actions (as necessary), sampling, monitoring, reporting, waste management, and recordkeeping conditions.

PSNGP Permit Special Condition S3.B. In other words, the general permit to which Ecology has tied its analysis of the WQBEL required for West Point currently does not meet the requirements of the Clean Water Act if, indeed, PSNGP permit conditions S3 A and B accomplish that task, which they do not.

Likewise, the stay removes the following language from PSNGP General Condition G1: "Failure to follow the corrective action requirement after discharge of TIN at a level that exceeds the action level identified and authorized by the general permit constitutes a violation of the terms and conditions of this permit." Stay ¶ 5. And it suspends Special Conditions S4.D.2 and S5.D.2 both of which constitute a requirement to:

> submit for review a proposed approach to reduce the annual effluent load by at least 10% below the action level listed in Table 5 for individual plants or Table 6 for multiple plants under a bubbled action level. This must be an abbreviated engineering report or technical memo, unless Ecology has previously approved a design document with the proposed solution. The proposed approach must utilize solutions that can be implemented as soon as possible.

PSNGP Permit Special Condition S4.D.2; Stay ¶ 3. Finally, the optimization provisions of the Puget Sound Nutrient General Permit are partially suspended. *Id*. ¶ 2 ("The [Special Conditions S4.C.3, S5.C.3, and S6.B.2.b optimization] conditions do not require permittees to consider optimization strategies that reduce the volume of septage or influent to the subject facilities, impose building moratoria, or require significant operational changes that would reduce treatment capacity at the facilities."). It is unclear why Ecology thinks it can rely on an NPDES permit that is no longer fully in effect as the basis for issuing this permit without conditions that assure compliance with the Clean Water Act.

The status of the PSNGP is not the only reason why Ecology cannot ignore nitrogen discharges from West Point. In addition, the PSNGP does not ensure compliance with the Clean Water Act and implementing regulations even if none of its provisions were stayed. *See, e.g., Puget Soundkeeper Alliance v. Department of Ecology*, Notice of Appeal (Puget Sound Nutrient National Discharge Elimination System General Permit) (Dec. 22, 2021), at 4–10.

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IV. THE PERMIT LACKS AN INTELLIGIBLE AND NECESSARY NARRATIVE PROHIBITION ON CAUSING OR CONTRIBUTING TO VIOLATIONS OF WATER QUALITY STANDARDS

The proposed permit does not comply with the CWA and its implementing regulations because in many respects it fails to ensure that the authorized discharges will not cause or contribute to violations of water quality standards. Absent the specific, detailed limits necessary to ensure such compliance, the permit must a minimum include a clear narrative prohibition on the discharge of pollutants that will cause or contribute to water quality standards violations. A prohibition such as "notwithstanding the effluent limitations established by this permit, no wastes shall be discharged and no activities shall be conducted that will violate water quality standards as adopted in WAC chapter 173-201A except in the defined mixing zone," would meet this requirement. This type of provision is necessary to both put the permittee on notice that it must take the steps necessary to ensure compliance with water quality standard—even if that means going above and beyond the specific measures outlined in the permit—and allow for enforcement of the permit where the permittee fails to act. As EPA stated in a 1994 amicus brief before the Ninth Circuit Court of Appeals,

> EPA and states commonly include permit conditions prohibiting discharges that cause violations of state water quality standards using language similar to that employed here, particularly when regulating stormwater discharges or combined sewer and stormwater overflows ("CSOs"). Because citizen enforcement provides a crucial supplement to state and federal enforcement, the panel decision threatens to undermine severely an important source for enforcement of a proper, commonly used permit condition.[10]

The Ninth Circuit ruled in favor of plaintiffs, who were seeking to enforce such a narrative prohibition provision, and EPA.[11] More recently, in its defense of a CSO permit for San Francisco issued by EPA, EPA vigorously defended the use of such narrative effluent limitations in NPDES permits stating:

> EPA may include a narrative prohibition so long as it determines it is "necessary" to meet water quality standards under CWA section 301(b)(1)(C). 33 U.S.C. § 1311(b)(1)(C). . . . [C]ourts have recognized—consistent with this broad grant of statutory authority—EPA's ability to include in permits broad narrative prohibitions on violating water quality standards. And EPA reasonably does not

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[10] *Northwest Environmental Advocates v. City of Portland*, No. 92-35044, Brief of the Environmental Protection Agency Supporting the Petition for Rehearing/Suggestion for Rehearing En Banc (Feb. 10, 1994) at 2 (emphasis added).

[11] *Nw. Envt. Advocates v. City of Portland*, 56 F.3d 979 (9th Cir. 1995).

> interpret its implementing regulations at 40 C.F.R. § 122.44(d)(1)(i)-(vi) as precluding the utilization of narrative prohibitions.[12]

EPA described its inclusion of a narrative prohibition on the discharges' causing or contributing to violations of water quality standards as "a backstop 'to ensure compliance with applicable water quality standards in accordance with the CWA and [its implementing regulations].'" *Id*. at 55. This backstop was in addition to, not to the exclusion, of numeric effluent limitations. *Id*. at 24, 50.

Not only may Ecology include such a backstop, Ecology is required to include such a narrative limitation in a permit such as West Point. EPA regulations mandate all NPDES permits contain "any requirements . . . necessary to . . . [a]chieve water quality standards." 40 C.F.R. § 122.44(d)(1). The regulations further require that permits control "all pollutants . . . which [the permit authority] determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." *Id*. § 122.44(d)(1)(i). Additionally, the regulation establishes a process for setting pollutant-specific effluent limits when a permit authority determines that a specific pollutant has the reasonable potential to cause or contribute to a violation of WQS. *Id*. § 122.44(d)(1)(ii)-(vii). These provisions work in tandem. As the Environmental Appeals Board ("EAB") noted below, the latter provisions provide a framework for generating numeric, pollutant-specific limitations, but the opening language in section 122.44(d)(1)—requiring any conditions "necessary . . . to [a]chieve water quality standards"—preserves the permit authority's power—and responsibility—to impose other requirements as necessary to ensure compliance with water quality standards, including narrative prohibitions where appropriate. As the EAB put it,

> Provisions generally prohibiting discharges from violating [WQS] are frequently included in NPDES permits in addition to more specific "end-of-pipe" effluent limits. . . . In effect, they serve as "backstops" in the event that more specific limits or provisions prove inadequate . . . . Such provisions also provide a mechanism for addressing water quality violations that a permittee causes due to unanticipated circumstances or changes to effluent quality.[13]

Nothing in section 122.44(d)(1) indicates that the requirement to develop numeric limits in specified situations displaces the general authority granted in the very first sentence of that provision. And it is logical that the broader authority in the first sentence ensures that permit authorities have a "catch-all" authority to satisfy CWA section 301(b)(1)(C)'s mandate in

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[12] *City and County of San Francisco v. EPA*, Case No. 21-70282, Brief for U.S. Environmental Protection Agency (Nov. 24, 2021) at 52.
[13] *In re: City and County of San Francisco* 18 E.A.D. 322, 341 (EAB 2020).

situations where there is a risk that the numeric WQBELs will not alleviate all water quality concerns. There is such a risk here with the West Point NPDES permit.

While it may seem odd that the regulation features what is essentially a "backstop" authority before it addresses the need to establish numeric requirements, that dynamic is explained by the historical development of the relevant provisions. Until 1989, EPA's regulations did not include specified procedures for deriving pollutant-specific effluent limits. Instead, the regulations simply required permit authorities to include "any requirements . . . necessary to . . . [a]chieve water quality standards[.]" 40 C.F.R. § 122.44(d)(1) (1988). In 1989, as explained more fully below, EPA revised its regulations to include specified procedures for establishing numeric limits. *See* 54 Fed. Reg. 23,868 (June 2, 1989). Instead of reorganizing subsection (d)(1), however, EPA simply tacked the requirement to establish numeric limits onto its existing framework. Pointedly, neither the text of the revised regulation nor the lengthy preamble accompanying these changes contains any hint that these newly-created procedures were intended to displace the permit authorities' broad authority to include "any" requirements necessary to ensure compliance with water quality standards.

Properly understood, section 122.44(d)(1) imposes overlapping obligations on permit authorities. First, it requires them to always impose whatever conditions are necessary to ensure compliance with water quality standards. And second, it supplements this authority by identifying specific contexts where those same permit authorities must follow predetermined procedures to develop numeric WQBELs. Taken together, these provisions give permit authorities a range of tools to implement CWA section 301(b)(1)(C).

In *City of Portland*, the Ninth Circuit held that citizens—and the state and EPA—may enforce narrative prohibitions requiring compliance with water quality standards. While the Court's holding was limited to the enforceability of these conditions, its logic is equally applicable to the initial establishment of those same conditions, as in the issuance of the West Point permit. In pertinent part, the Court began its discussion by noting that the relevant Senate Report underlying the 1972 Amendments to the CWA made clear that "Congress recognized that water quality standards 'often cannot be translated into effluent limitations.'" 56 F.3d at 989 (citing Federal Water Pollution Control Act Amendments of 1972, S.Rep. No. 92-414, 92nd Cong., 2nd Sess., reprinted in 1972 U.S.C.C.A.N. 3668, 3675 (1972)). The Court concluded that the effect of precluding enforcement of the narrative prohibitions would be to "immunize the entire body of qualitative regulations from an important enforcement tool," and that the CWA should be read to avoid that result. *Id*.

Similarly, if it does not include a clear narrative prohibition in this permit, Ecology will immunize West Point from compliance with CWA section 301(b)(1)(C). Reading 40 C.F.R. § 122.44(d)(1) to both authorize and require narrative prohibitions where, as the *City of Portland* Court put it, "certain water quality standards cannot be expressed quantitatively," 56 F.3d at 989, is the only way to harmonize that requirement with the CWA's "permit shield" provision in

section 402(k). Under this latter provision, compliance with an NPDES permit is, for most purposes, deemed compliance with the statute. It is an incorrect reading of the statutory and regulatory requirements to conclude that section 122.44(d)(1) does not require the use of narrative prohibitions because to do so is to suggest that Sandy Point should be able to take advantage of this safe haven even where it would be difficult or impossible for EPA to impose numeric limits ensuring compliance with the relevant standards, including narrative criteria. Put another way, West Point would be able to avail itself of the permit shield without a concomitant obligation to protect public water quality. In the words of the Ninth Circuit in *City of Portland*, the relevant standards would thus be "immunize[d]" from the possibility of enforcement. 56 F.3d at 989. This reading cannot be squared with CWA section 301(b)(1)(C).

Why, precisely, is this all true for West Point? The reason is simple: Ecology is well aware that all sewage treatment plants, including West Point, discharge pollutants for which it has made no evaluation of compliance with water quality standards. One is nitrogen. Another example is the PFAS family of chemicals, for which Ecology now proposes to require influent monitoring in this permit but no effluent monitoring or WQBEL.[14] Ecology does little to explain the issue of PFAS in the influent of West Point, *see* Fact Sheet at 103, but it says nothing at all about PFAS in the effluent. Nor does it even include a requirement that West Point's effluent be monitored for PFAS despite the certainty of its presence there. *See id*. (Fact Sheet's confirming only influent monitoring). Ecology cannot concurrently conclude that there is a sufficient rationale for PFAS monitoring—"[p]er- and polyfluoroalkyl substances (PFAS) are a class of persistent chemicals known as widespread pollutants that have been found in food, water, people, and the environment," *id*., knowing full well that PFAS is ubiquitous in sewage—and conclude that there is no basis for a prohibition on PFAS discharges that may cause those adverse effects after being discharged to Puget Sound. The CWA does not create an exclusion from CWA section 301(b)(1)(C) for those pollutants for which Ecology has not obtained sufficient information on which to base a numeric effluent limit. Ecology's proposed monitoring for PFAS chemicals—which does not even include in the facility's effluent—is insufficient to make this permit comply with the CWA.

Unlike recent draft permits proposed for issuance by EPA, the West Point permit merely refers to "PFAS," without elaboration. In contrast, EPA's proposed permits for the Lummi Tribal Sewer and Water District's Gooseberry Point and Sandy Point sewage treatment plants, it included 40 named PFAS chemicals for both influent and effluent monitoring, and sludge.[15]

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[14] *See* Draft Permit S2.A, Table 21 (Influent PFAS monitoring).

[15] *See, e.g.,* EPA, *Permit No. WA0025666, Authorization to Discharge Under the National Pollutant Discharge Elimination System Gooseberry Point Wastewater Treatment Plant Lummi Tribal Sewer and Water District (LTSWD)* (undated draft) at ¶¶ I.B.1 (Table 1. Effluent Limitations and Monitoring Requirements),1.B.9 (Table 2, PFAS Chemicals to be Analyzed), listing 40 individual PFAS chemicals).

But PFAS chemicals are just the tip of the iceberg of toxic pollutants that are likely discharged by the facility for which Ecology proposes no numeric or narrative effluent limitation. Many studies have demonstrated that sewage treatment plants discharge a wide variety of toxic constituents that, like PFAS, have been ignored by EPA's regulatory programs for decades. EPA terms these "contaminants of emerging concern" ("CECs") and describes them on its website as follows:

> Contaminants of emerging concern (CECs), including pharmaceuticals and personal care products (PPCPs), are increasingly being detected at low levels in surface water, and there is concern that these compounds may have an impact on aquatic life.
>
> * * *
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> There are many CECs and PPCPs that act as so-called endocrine disruptors (EDCs). EDCs are compounds that alter the normal functions of hormones resulting in a variety of health effects. EDCs can alter hormone levels leading to reproductive effects in aquatic organisms, and evaluating these effects may require testing methodologies not typically available along with endpoints not previously evaluated using current guidelines.
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> The emerging contaminants may also demonstrate low acute toxicity but cause significant reproductive effects at very low levels of exposure. In addition, the effects of exposure to aquatic organisms during the early stages of life may not be observed until adulthood. Therefore, traditional toxicity test endpoints may not be sufficiently comprehensive for criteria derivation for these chemicals and the chemicals may also have specific modes of action that may affect only certain types of aquatic animals (e.g., vertebrates such as fish).[16]

While some of these pollutants come from indirect dischargers of industrial-type effluent to sewage treatment plant collection systems and are regulated pursuant to pretreatment regulations, many CECs are not from such industrial sources but, rather, are contained in sewage not affected by indirect dischargers or stormwater.

For example, King County itself recently described the many CECs not associated with pretreatment sources:

> Many thousands of chemicals are not regulated by the EPA and are known as "chemicals of emerging concern" or CECs. CECs can refer to many different kinds of chemicals, including medicines, personal care products, household

[16] EPA, Contaminants of Emerging Concern including Pharmaceuticals and Personal Care Products, *available at* https://www.epa.gov/wqc/contaminants-emerging-concern-including-pharmaceuticals-and-personal-care-products.

> cleaning products, lawn care products, and agricultural products, among others. Naturally occurring human hormones and many pharmaceuticals are, to a large degree, not broken down in the human body and are excreted in urine or feces into the regional sewer system. Some CECs, such as per- and polyfluoroalkyl substances (PFAS), are known as "forever chemicals" because they last in the environment for a long time without breaking down and can accumulate in some animal tissues. PFAS are used in fire-fighting foams, cooking utensils, carpets, clothing, food packaging, and other household products and are found in urine, feces, dishwater, and laundry water.
>
> Another group of chemicals, polybrominated diphenyl ethers, or PBDEs, are used as flame retardants in several applications, including textiles, plastics, wire insulation, and automobiles. Some PBDEs are also very long-lived and can accumulate in some animal tissues. Pharmaceuticals and personal care products are not regulated as priority pollutant organic chemicals and are primarily found in domestic wastewater sources and medical wastes, as opposed to industrial discharges.[17]

This extensive report is just the latest such analysis that provides Ecology with an understanding of the types of toxic pollutants likely present in the West Point discharge that it has not evaluated for reasonable potential to cause or contribute to violations of water quality standards including narrative criteria, and the types of pollutants for which it has, therefore, not established numeric criteria. The fact that Ecology has not conducted such an evaluation and has not made a determination of reasonable potential does not eliminate the fact that these chemicals are in the West Point discharges.

Among the likely CECs not evaluated by Ecology but present in the discharge are polybrominated diphenyl ethers ("PBDE"). As EPA points out on its website,

> EPA is concerned that certain PBDE congeners are persistent, bioaccumulative, and toxic to both humans and the environment. The critical endpoint of concern for human health is neurobehavioral effects. Various PBDEs have also been studied for ecotoxicity in mammals, birds, fish, and invertebrates. In some cases, current levels of exposure for wildlife may be at or near adverse effect levels.[18]

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[17] King County, *Toxics in King County Wastewater Effluent, Evaluating the Presence of Toxic Elements in the Effluent of Treatment Plants* (Dec. 2022) at 11–12.

[18] EPA, Assessing and Managing Chemicals under TSCA, Polybrominated Diphenyl Ethers (PBDEs), Why is EPA concerned about these chemicals?, *available at* https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/polybrominated-diphenyl-ethers-pbdes.

EPA has pointed out that among designated beneficial uses of Puget Sound, the endangered Southern Resident killer whales are known as among the most contaminated marine mammals in the world, including from PBDEs.[19] This pollutant has likewise been identified as a major threat to the Southern Resident killer whales by the National Marine Fisheries Service ("NMFS"). As described by NMFS in 2012, PBDEs:

> have been used as additive flame-retardants in many products including electronics, textiles, and plastics. Additive flame-retardants can readily disassociate from the products they are added to and discharge into the environment. Due to the increase in fire regulations in many countries, the use of PBDEs has increased in the last few decades. PBDEs have been identified as a growing concern and have a ubiquitous distribution with increasing levels found in various matrices including surface water, sewage sludge, sediment, air, and biota (Hale et al. 2003, Hites 2004). PBDEs are structurally comparable to PCBs and share some similar toxicological properties (Hooper and McDonald 2000).
>
> * * *
>
> Although specific regional data is limited for PBDE levels, the environmental levels of a few PBDE congeners appear to have surpassed PCBs in some areas in North America (Hale et al. 2003, Ross et al. 2009). Recent studies have documented relatively high concentrations of PBDEs in Southern Resident killer whales (Krahn et al. 2007a, 2009, Mongillo 2009). Although PBDE levels in the whales are lower than PCBs or DDTs (Krahn et al. 2007a, 2009), concern is growing because PBDE exposure and accumulation will likely continue in the future increasing the risk to the health of the killer whales. Several other marine species have recently experienced an almost exponential increase in PBDE concentrations (e.g., Ikonomou et al. 2002, Lebeuf et al. 2004).[20]

NMFS reported that current levels of PBDE in the endangered Southern Resident killer whales have been found in the range of 199–2,745 ng/g wet weight as compared to "threat levels" determined for grey seals at concentrations of 170–460 ng/g lipid wet in blubber.[21]

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[19] EPA, Salish Sea, Southern Resident Killer Whales, Why Is It Happening?, Current Threats to Killer Whale Recovery, *Pollution and Contaminants, available at:* https://www.epa.gov/salish-sea/southern-resident-killer-whales#about (last accessed Nov. 30, 2022) ("Individuals have been found to carry some of the highest PCB concentrations reported in animals, with levels in blubber exceeding those known to affect the health of other marine mammals. Other contaminant levels, such as the levels of DDT and PBDEs, are also found in high levels, especially in juvenile killer whales.").

[20] NMFS, *Jeopardy and Destruction or Adverse Modification of Critical Habitat Endangered Species Act Biological Opinion for Environmental Protection Agency's Proposed Approval of Certain Oregon Administrative Rules Related to Revised Water Quality Criteria for Toxic Pollutants* (Aug. 14, 2012) at 81–82.

[21] *Id*. at 540, Table 2.8.1.

NMFS has also focused on the effect of PBDEs on threatened and endangered salmonids, which themselves are key prey of the Southern Resident killer whales. NMFS scientists have shown that Chinook salmon exposed to PBDEs caused "reduced survival during challenge with the pathogenic marine bacteria *Listonella anguillarum*" and altered macrophage function causing them to conclude that "important physiological functions of health and survival may be altered in fish from Puget Sound and the Columbia River exposed to BDE-47 and BDE-99."[22] NMFS has evaluated PBDE assimilation efficiency in juvenile Chinook, allowing for the ability to model contaminant bioaccumulation in exposed organisms and food webs.[23] And NMFS scientists studied salmon fed five environmentally relevant concentrations of PBDE congeners finding that the most predominant found in salmon— BDE-47 (2,20,4,4'-tetrabromodiphenyl ether) and BDE-99 (2,20,4,40,5-pentabromodiphenyl ether)—affected thyroid hormones in the fish and concluding that PBDE-caused "changes in thyroid hormone levels occur that may have serious impacts on juvenile fish health and survival."[24]

NMFS has calculated for two scenarios (an adult male and male calf) that both will "continue to increase their PBDE body burdens in the next 20 years" and PBDE levels "will surpass the PCB health-effects thresholds within the individual's life span," for the adult male in 10 years and for the calf between 15 and 18 years, the shorter timeframe if the discharge evaluated in this analysis did not occur (noted as "without action" in the following graph):[25]

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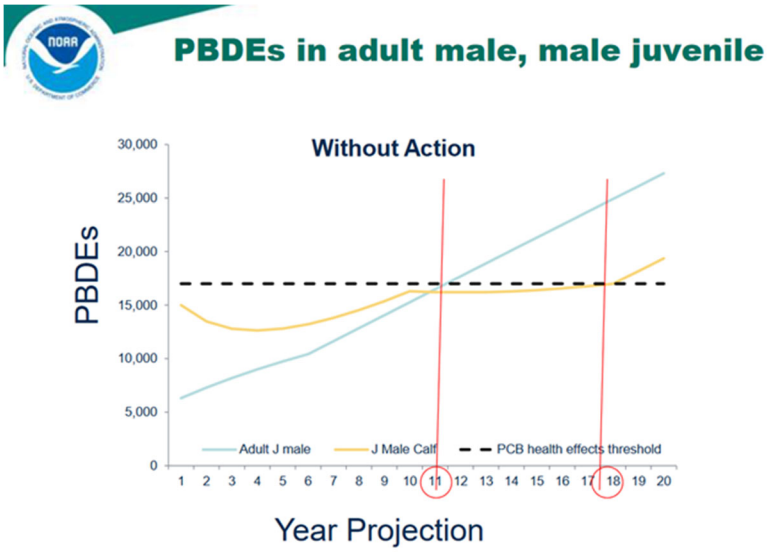
[22] Mary R. Arkoosh, *et al., Dietary Exposure to Individual Polybrominated Diphenyl Ether Congeners BDE-47 and BDE-99 Alters Innate Immunity and Disease Susceptibility in Juvenile Chinook Salmon*, 49 Environmental Science and Technology 6974–6981, 6979 (2015), *available at* https://pubs.acs.org/doi/10.1021/acs.est.5b01076.

[23] Joseph P. Dietrich, *et al., Assimilation Efficiency of PBDE Congeners in Chinook Salmon*, 40 Environmental Science Technology 3878–3886, 3884 (2015), *available at* https://pubs.acs.org/doi/10.1021/es5057038.

[24] Mary R. Arkoosh, *et al., Alteration of thyroid hormone concentrations in juvenile Chinook salmon (Oncorhynchus tshawytscha) exposed to polybrominated diphenyl ethers, BDE-47 and BDE-99*, 171 Chemosphere (2017) at 7, *available at* https://www.sciencedirect.com/science/article/abs/pii/S0045653516317477?via%3Dihub.

[25] NMFS, *NMFS' Preliminary Analysis of Effects on Southern Resident Killer Whales* (Dec. 13, 2012) (date is incorrectly printed as 2022) at 13; based on Theresa Mongillo, NMFS, *PBDE accumulation in Southern Resident Killer Whales: Incremental Increase Mode* (2012, undated).



The Washington Department of Fish and Wildlife concluded the following in 2009:

> [S]tudies support the hypothesis that benthic (bottom dwelling) species reflect contaminant conditions in sediments. However, assessments of pelagic (open water) species, such as Pacific herring (*Clupea pallasi*), suggest that the pelagic food web is more directly linked to POPs that occur in Puget Sound's waters and pelagic biota (rather than sediments). Pacific herring hold unusually high tissue burdens of bioaccumulative POPs (e.g., polychlorinated biphenyls (PCBs), an observation that is not typically predicted from sediment-as-source models. In addition, other research indicates that PCBs and polybrominated diphenyl ethers (PBDEs) have biomagnified in Puget Sound's harbor seals (*Phoca vitulina*) and killer whales (*Orcinus orca*) to levels that have impaired their health (Hickie, 2007; Ross, et al., 2000; Ross, et al., 2004).[26]

An earlier evaluation prepared by the Washington Department of Ecology and King County also pointed to the bioaccumulation of PBDEs in Puget Sound:

> PBDEs were detected in outmigrant Chinook salmon tissue and their stomach contents from four sites in Puget Sound (Sloan et al., 2010). Levels in wild outmigrant juveniles were higher than in hatchery fish, ranging from 67 to 13,000 ug/kg lipid, generally comparable to those measured in the Lower Columbia River and Estuary. Sloan et al. (2010) conclude that PBDEs may be contributing to reduced health and fitness in outmigrant juvenile Chinook salmon. PBDEs were detected in adult Chinook salmon returning to the Duwamish River and were not

[26] WDFW, *Quality Assurance Project Plan Persistent Organic Pollutants in Three Guilds of Pelagic Marine Species from the Puget Sound* (Dec. 14, 2009) at 6.

detected in adult Chinook returning to the Johnstone Strait, Lower Fraser River, or Deschutes River (Cullon et al., 2009).

Lema et al. (2008) demonstrated that dietary exposures to certain PBDEs by adult fathead minnows can alter thyroid status and thyroid hormone-regulated gene transcription. Arkoosh et al. (2010) found that juvenile Chinook salmon exposed to moderate doses of PBDEs in their diet may be at increased risk of disease relative to those exposed to higher or lower doses of PBDEs in their diet. PBDE levels were found to be about four to five times higher in a mixture of fishes designed to represent the diet of Puget Sound harbor seals than in a similar mixture of fish designed to represent the diet of harbor seals from the Strait of Georgia (Cullon et al., 2005).

Very few studies have been conducted examining effects of PBDEs on birds. The studies reviewed indicate that PBDEs impact the reproduction and endocrine system similarly to PCBs. Exposure to BDE-71 for 75 days adversely impacted courtship and mating behavior of American kestrels (*Falco sparverius*)(Fernie et al., 2008). These birds also displayed significant delays in clutch initiation and smaller eggs (Fernie et al., 2009). Eggshell thinning and reduced hatching success also resulted. A study of species sensitivity to PBDEs (PBDE-71) observed that pentabrominated diphenyl ether (Penta BDE) exposure to eggs at 0.01 to 20 mg/kg caused decreased pipping and hatching success in American kestrels but not chickens (*Gallus gallus*) or Mallard ducks (*Anas platyrhynchus*) (McKernan et al., 2009). Species sensitivity was concluded to be Mallard ducks <chickens <American kestrels.

Total PBDE concentrations in osprey eggs and nestling plasma are significantly lower in the Lower Duwamish River (eggs: 321 ug/kg ww; plasma: 6 ug/kg ww) compared to those from the upper Willamette River (eggs: 897 pb ww; plasma: 22 ppb ww) (Johnson et al., 2009). Total PBDE concentrations in the osprey eggs did not change significantly between 2003 and 2007. Reproductive failure was observed in four of nine nests in the Lower Duwamish area. A small dataset from this study suggests that some nestlings may have experienced immunosuppression. However, the results were inconclusive due to the small sample size.

Compared to birds, a larger but still limited number of publications exist on the effects of PBDEs in mammals. Rodent exposure studies have demonstrated thyroid hormone disruption (Hallgren et al., 2001; Zhou et al., 2002) and developmental neurotoxic and behavioral effects (Ericksson et al., 2001; Viberg et al., 2003a; Viberg et al., 2003b). A study of grey seal pups and juveniles observed a relationship between circulating thyroid hormones, transport proteins, and PBDE uptake (Hall et al., 2003).

> Similar to PCBs, there is evidence of bioaccumulation of PBDEs in marine mammals at high concentrations in blubber. However, absolute concentrations of total PBDEs appear to be lower than total PCBs. Cullon et al. (2005) measured PBDE concentrations five times higher in harbor seal prey from Puget Sound than the Strait of Georgia, but the mean PBDE concentration was five times lower than that measured for PCBs. Krahn et al. (2009) and Rayne et al. (2004) found the same pattern of killer whale blubber concentrations as found for PCBs in males, mothers, and calves. Krahn et al. (2009) measured total PBDE concentrations ranged from 680 to 15,000 ug/kg lipid. Mean PBDE concentrations in northern male killer whale blubber have been found to be significantly lower (203 ug/kg lipid) than those of southern resident (942 ug/kg lipid) and transient males (1,015 ug/kg lipid).
>
> Although a quantitative effects assessment was not conducted for PBDE exposure to marine mammals, published research demonstrates that PBDEs are bioaccumulating to high concentrations in Puget Sound killer whales. This coupled with the growing evidence that PBDE exposure can cause thyroid and developmental effects in mammals strongly suggest that PBDEs are an important contaminant to monitor.[27]

The 2022 King County study cited above looked at CECs and other toxics in the effluent and receiving water of King County's sewage treatment plants that discharge to Puget Sound.[28] Up to 121 unique contaminants were detected in the effluent samples.[29] The study included 10-day laboratory exposures of juvenile Chinook salmon at different dilutions,[30] estuarine sampling,

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[27] Washington Department of Ecology/King County, *Assessment of Selected Toxic Chemicals in the Puget Sound Basin, 2007-2011* (Nov. 2011) at 106–107.

[28] James Meador *et al., Academic Team Project Integration Report King County Orca Proviso, Wastewater Effluent Discharge Assessment – Impact to Marine Organisms* (Oct. 2022), Appendix M to King County, *Toxics in King County Wastewater Effluent, Evaluating the Presence of Toxic Elements in the Effluent of Treatment Plants* (Dec. 2022). The number of analytes organized by contaminant class and water sample type are set out in Table 2, *id*. at 13.

[29] *Id.* at 118; *see also id*. ("There were 14 compounds consistently found at greater concentrations under low flow conditions, suggesting municipal sewage is their primary conveyance to wastewater effluent. These included hormones (17β-estradiol, androstenedione, estrone, and progesterone) and several medications (atorvastatin, carbamazepine, diazepam, and hydrocodone).").

[30] Note that the authors pointed to the constraints of a 10-day exposure: "Importantly, it is likely that the vitellogenin response in our study underestimated the response of chronic exposure to estrogenic hormones in Puget Sound. In fish exposed for 21 days to 20 ng/L of 17α-ethinylestradiol vitellogenin continued to increase over the exposure, peaking beyond the end of the exposure with a half-life of two to four weeks among the species tested (Craft et al. 2004). Therefore, although vitellogenin was not significantly elevated at the lower WWE concentrations in our 10-day exposure, we would expect that chronic exposure would approximate the response of juvenile Chinook exposed to higher WWE concentrations in our study." *Id*. at 118.

bioaccumulation modeling, and chemical characterization of effluent. Among its findings were the following:

> In the laboratory study, juvenile Chinook exposed to [wastewater effluent] WWE showed evidence of endocrine disruption and alterations in the stress response, brain function, and metabolism. Brain function and total plasma protein were affected at low exposure concentrations, whereas other endpoints exhibited a dose response relationship with measurable differences from control evident only at the higher concentrations. However, some of the endpoints (e.g., endocrine disruption) are expected to show more pronounced effects with longer exposure durations than in the laboratory study. Higher exposure concentrations in the laboratory study may therefore be indicative of effects resulting from chronic exposures, which occur in Puget Sound.
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> * * *
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> Metabolomics analysis showed that WWE altered numerous endogenous biochemical pathways important for energy generation and utilization, lipid metabolism and biosynthesis, amino acid metabolism, growth, and oxidative stress. Pathway analysis implicated pharmaceuticals that act as antibiotics, antidepressants, antihistamines, analgesics and statins even at the lowest WWE concentrations tested (0.1% and 0.4%), although other chemicals present in WWE may have contributed.
>
> Additional pharmaceuticals were predicted to cause harm based on a fish plasma model of bioaccumulation from tissue and water chemistry in exposed juvenile Chinook. As with metabolomics, impacts were in many cases predicted at environmentally relevant concentrations of WWE. Impacts to juvenile Chinook observed and predicted for this study are hypothesized to contribute to reduced availability as prey for [endangered Southern Resident killer whales] SRKWs. Additionally, exposure to several classes of contaminants based on bioaccumulation modeling for Chinook likely contribute to health impairments in SRKW.[31]

The report illustrates its findings on total and summed 11 congeners of PBDEs as compared to other studies on PBDEs in effluent and receiving water in the Puget Sound region:[32]

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[31] *Id*. at vi. Note that the bioaccumulation modeling done in this study "is limited to uptake from water via gill ventilation; however dietary uptake is also a major contributor to body burdens, especially for hydrophobic compounds." *Id*. at 133.

[32] *Id*. at 34.

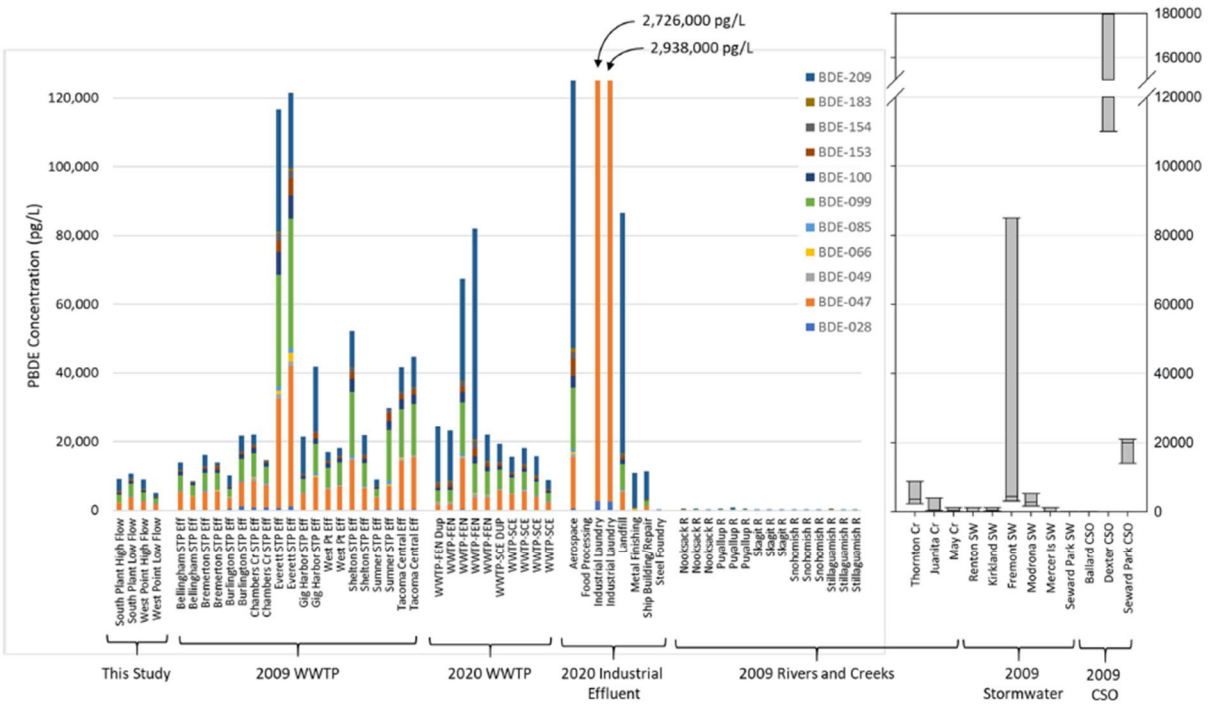

Figure 5. $\sum_{11}$PBDE concentration (left) and reported total PBDE concentrations (grey bars, right) for effluent water from different facilities, and surface waters in the Puget Sound. The 2009 WWTP data are from Washington State Department of Ecology (2010). 2009 rivers, creeks, and CSO data are from King County (2013b) and Washington State Department of Ecology (2011). 2020 WWTP and 2020 Industrial Effluent are from Washington State Department of Ecology.

The report concluded that "several individual PBDEs and flame retardants may occur in fish tissue at concentrations able to cause adverse effects in juvenile Chinook."[33]

Moreover, of specific concern to NMFS are the additive properties of multiple toxic pollutants on endangered killer whales, including PBDEs:

> Health effects from exposure to PCBs, PBDEs, and DDTs should not be considered in isolation. Killer whales are exposed to a mixture of pollutants, some of which may interact synergistically and enhance toxicity, influencing the health of the Southern Residents. Although it is difficult to predict health effects from mixture interactions, it is important to predict the toxicity of such mixtures; disregarding the interactive effects may underestimate risk to an individual or to the population. Furthermore, we also stress the importance of establishing the impact on the health of killer whales of the transformed by-products, or metabolites, of the pollutants. The practice of examining only high doses of POPs may also underestimate the risk to the killer whales. Endocrine disruptors can produce non-linear dose–response effects and interact at lower doses than would occur with the isolated chemicals. Therefore, even low concentrations of

[33] *Id*. at 133 (internal citations omitted).

> persistent pollutants, when combined, have the potential to cause adverse effects in Southern Residents.[34]

NMFS focused on these persistent pollutants "because they are found at relatively high levels in the whales" and they

> have the ability to cause endocrine disruption, reproductive disruption or failure, immunotoxicity, neurotoxicity, neurobehavioral disruption, and cancer. The average concentration of blubber summed PCBs (ΣPCBs) in male Southern Resident killer whales sampled between 2004 and 2013 was 45,000 ± 31,000 ng/g lw (lipid weight), which exceeds a health effects threshold in harbor seals (*Phoca vitulina*). Average blubber ΣPBDEs in sampled Southern Residents were 4,800 ± 3,500 ng/g lw, with most individuals exceeding the levels associated with altered thyroid hormone levels in post-weaned and juvenile gray seals (*Halichoerus grypus*). Although there has been no report in the literature on a marine mammal health effect threshold for DDTs, ΣDDTs levels in the blubber of Southern Residents were high, and ranged from 1,200 to 210,000 ng/g lw.[35]

NMFS explained that in addition to the killer whales' high body burden, other stressors increase the likelihood of a toxic response, including "nutritional stress from reduced Chinook salmon populations [that] may act synergistically with high POP levels in Southern Residents and result in deleterious health effects"[36] and the timing of the exposure. When killer whale calves are exposed, toxics may compromise their immune system and increase disease susceptibility, "a large source of morbidity and mortality in marine mammals" as well as result in "alterations to the individual's metabolism, impeded growth and development, delayed or premature physical or sexual maturity, reduced future fecundity, or reduced perinatal survival."[37] Finally, exposure during neurodevelopment can reduce learning, affecting a "killer whale's capacity to successfully forage and interact with other pod members."[38]

Ecology's proposed West Point permit includes no narrative prohibition on discharges of that may cause or contribute to violations of water quality standards, including narrative criteria and designated uses, and its acute and chronic whole effluent toxicity ("WET") testing of effluent, Permit ¶ S2.A Table 22, is not designed to measure the responses identified by the King County's testing of effluent on Chinook salmon nor to protect the endangered killer whales from those toxic contaminants. In other words, the WET testing does not save this permit. Peculiarly, compliance with WET testing results is not even identified as a permit condition. *See* Permit ¶ S1.A.

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[34] NMFS, *Exposure to a Mixture of Toxic Chemicals: Implications for the Health of Endangered Southern Resident Killer Whales* (Nov. 2016) at vii.
[35] *Id.* at vii.
[36] *Id*.
[37] *Id*. at viii.
[38] *Id*.

V. THE PERMIT IS FLAWED DUE TO LACK OF A REOPENER CLAUSE

The proposed permit does not include a reopener clause such as one that would allow Ecology to impose more stringent conditions in the permit after the discharger obtains information required by its monitoring provisions, such as those that should be included in the permit pertaining to PFAS pollutants. As the EPA Environmental Appeals Board has stated, even if the narrative prohibition on discharges' causing or contributing to violations of water quality standards were clarified and improved in this permit, it would not have the same result as including a reopener clause to specifically respond to the results of that monitoring:

> Reopening and modifying a permit based on adverse impacts on water quality or beneficial uses that occur during a permit's term (the reopener provision) is different and serves a different purpose than a permit term that itself prohibits violating water quality standards in the first instance.[40]

In this permit, Ecology concedes in several ways identified above that its effluent limitations may not be sufficient to meet water quality standards but provides no method by which it will meet the requirements of the CWA and federal regulations. A statement that Ecology "may modify this permit to include additional requirements relating to the establishment and enforcement of local limits for pollutants of concern," Fact Sheet at 103, is not a sufficient permit condition to address its inadequacies.

Conclusion

It is well past the time when Ecology should shelve its habit of barely revisiting its old analysis of whether a discharge is likely to cause or contribute to violations of water quality standards when it proposes to issue a new permit. Given that the agency does not control nonpoint sources of pollution—including toxic pollution that is building up in the food web of Puget Sound—the least it could do is to control point sources under the NPDES program.

Sincerely,

Nina Bell
Executive Director