

COURT OF APPEALS  
DIVISION II

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NO. 42411-8-II

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STATE OF WASHINGTON  
BY *[Signature]*  
DEPUTY

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**COURT OF APPEALS, DIVISION II  
OF THE STATE OF WASHINGTON**

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THE BOEING COMPANY,

Petitioner,

v.

STATE OF WASHINGTON, POLLUTION CONTROL HEARINGS  
BOARD, and DEPARTMENT OF ECOLOGY,

Respondents.

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**MOTION FOR DISCRETIONARY REVIEW**

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TUPPER MACK JENSEN WELLS PLLC  
James A. Tupper, Jr., WSBA No. 16873  
Sarah E. Mack, WSBA No. 12731  
Lynne M. Cohee, WSBA No. 18496  
Bradford Doll, WSBA No. 38479  
2025 First Avenue, Suite 1100  
Seattle, Washington 98121  
(206) 493-2300

Attorneys for Petitioner  
The Boeing Company

**A. IDENTITY OF PETITIONER**

Petitioner The Boeing Company (“Boeing”) asks this Court to accept review of the decisions designated in Part B of this motion.

**B. DECISION BELOW**

Boeing seeks review of the Findings of Fact, Conclusions of Law, and Order entered April 25, 2011 by the Pollution Control Hearings Board (“PCHB”) in *Copper Development Assn., Inc., et al. v. Dept. of Ecology, et al.*, PCHB Nos. 09-135 through 09-141, which affirmed particular aspects of the 2010 Industrial Stormwater General Permit (“ISGP” or “Permit”) issued by the Department of Ecology (“Ecology”). Boeing further seeks review of orders on summary judgment entered by the PCHB on December 23, 2010 and January 5, 2011.

Boeing seeks direct review pursuant to RCW 34.05.518, authorizing direct review of environmental board decisions upon acceptance by the Court following issuance of a certificate of appealability. RCW 34.05.518(1). On July 15, 2011, the PCHB issued a Certificate of Appealability finding that Boeing’s request for direct review meets the standard in RCW 34.05.518(3)(b). *See* Appendix 1.<sup>1</sup>

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<sup>1</sup> A copy of the Certificate of Appealability is attached as Appendix 1. A copy of the PCHB’s Findings of Fact, Conclusions of Law, and Order is attached as Appendix 2. Copies of the PCHB’s Order on Summary Judgment issued January 5, 2011 and Order on Summary Judgment issued December 23, 2010 are attached as Appendices 3 and 4.

### **C. ISSUES PRESENTED FOR REVIEW**

1. Does the presumption of compliance with water quality standards in RCW 90.48.555(6) establish a meaningful outer limit on the corrective action steps a permittee is required to take under the ISGP, or is a permittee that has fully complied with ISGP conditions required to implement unspecified additional stormwater treatment best management practices (“BMPs”) beyond those set forth in Ecology’s stormwater treatment manuals, until its discharges meet “benchmark” values?

2. Does RCW 90.48.555(7) require that Ecology have a legitimate scientific basis for a numeric water quality-based effluent limit for discharges to impaired water bodies in order for the effluent limit to be “appropriately derived”?

3. Was the PCHB’s conclusion that the Permit’s numeric effluent limit for Total Suspended Solids (“TSS”) was “appropriately derived” within the meaning of RCW 90.48.555(7) legally correct and supported by substantial evidence, where Ecology’s witnesses conceded that there is no scientific basis for the Permit’s TSS limit?

4. Was the PCHB’s conclusion that the Permit’s numeric effluent limit for fecal coliform bacteria was “appropriately derived” within the meaning of RCW 90.48.555(7) legally correct and supported by substantial evidence, where the Permit’s fecal coliform limit for stormwater discharges is equal to the water quality recreation criteria for

receiving waters, resulting in a more stringent effluent limit than necessary to meet the water quality criteria upon which the effluent limit was ostensibly based?

**D. STATEMENT OF THE CASE**

**1. Statutory and Regulatory Background.**

Under the Clean Water Act, discharge of pollutants is generally prohibited unless the discharge is in accordance with a National Pollutant Discharge Elimination System (“NPDES”) permit. 33 U.S.C. §§ 1251, 1311(a), 1342(a). In Washington, the Clean Water Act is implemented through the Water Pollution Control Act (chapter 90.48 RCW) and Ecology regulations. Ecology must incorporate conditions in NPDES permits requiring “AKART” or “all known, available, and reasonable methods to control toxicants in the applicant’s wastewater.” RCW 90.48.520. 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.

**a. General permit requirements**

Ecology may issue “general permits” covering multiple facilities in numerous industrial classifications. WAC 173-226-050. The ISGP is one such general permit. The primary means by which Ecology ensures that AKART will be applied is the Permit’s requirement of industry “best management practices” (“BMPs”). WAC 173-226-070(1)(d).

Pursuant to state law, industrial stormwater general permits must include an enforceable adaptive management mechanism, including an adaptive management indicator such as monitoring “benchmarks”, discharge monitoring, review and revisions to a stormwater pollution prevention plan, documentation of any remedial actions taken, and reporting to Ecology. The permit must also specify the timing and mechanisms for implementing treatment BMPs. RCW 90.48.555(8).<sup>2</sup>

Permit “benchmarks” are threshold or indicator values; when the benchmark value is reached, other elements of the adaptive management plan are triggered. Benchmarks are not numeric effluent limitations, even when stated in numeric terms. *See* App. 2 at 9-10 (Finding 11).

In general, industrial stormwater general permits are required to include *narrative* effluent limits rather than *numeric* effluent limits, unless Ecology conducts a “reasonable potential” analysis and specifically determines that discharges covered under the permit “have a reasonable potential to cause or contribute to violation of state water quality standards” and that effluent limits based on nonnumeric BMPs will not be effective to meet those standards. RCW 90.48.555(3)(d); 90.48.555(5).

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<sup>2</sup> A copy of RCW 90.48.555 is set forth in Appendix 5 hereto.

**b. The statutory presumption of compliance**

RCW 90.48.555(6) sets forth a presumption of compliance with water quality standards applicable to permittees under the ISGP and the Construction Stormwater General Permit (“CSGP”).<sup>3</sup> Absent site-specific information demonstrating a violation of water quality standards, a permittee is presumed to be in compliance with water quality standards when it has fully complied with all permit conditions (including the adaptive management program of planning, sampling, monitoring, reporting, and record-keeping) and fully implemented the BMPs contained in Ecology-approved stormwater technical manuals. RCW 90.48.555(6).

**c. “Appropriately derived” numeric effluent limits**

Ecology is generally prohibited from imposing numeric effluent limits in the ISGP and CSGP, except for discharges to certain water bodies that are “listed” under section 303(d) of the Clean Water Act, 33 U.S.C. §1313(d), i.e., water bodies that are not meeting water quality standards. Numeric effluent limits for discharges to 303(d)-listed water bodies must be “appropriately derived.” RCW 90.48.555(7).

**2. The 2010 Industrial Stormwater General Permit.**

On October 21, 2009, Ecology issued the current version of the ISGP (Ex. B-1, attached as Appendix 6 hereto). The ISGP, effective from

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<sup>3</sup> The CSGP covers stormwater discharges from construction sites of one acre or more. Although only the ISGP is at issue here, RCW 90.48.555 applies equally to the CSGP.

January 2010 through January 2015, regulates approximately 1,200 industrial facilities that discharge stormwater to surface waters or to storm sewers that drain to surface waters in Washington. The centerpiece of the ISGP is its requirement that permittees develop and implement a Stormwater Pollution Prevention Plan (“SWPPP”) setting forth the BMPs necessary to achieve AKART, ensure that discharges do not cause or contribute to violations of water quality standards, and comply with applicable federal treatment requirements. The ISGP identifies BMPs to be included in the SWPPP, including operational source control, structural source control, and treatment BMPs. App. 6 at 13-20.

**a. Benchmarks and corrective action requirements**

Conditions S5 and S8 contain the ISGP’s enforcement mechanism. Condition S5 establishes a set of numerically-stated “benchmark” values – for turbidity, pH, oil sheen, total copper, and total zinc – applicable to all facilities covered under the ISGP. App. 6 at 25. A “benchmark” is defined as “a pollutant concentration used as a permit threshold, below which a pollutant is considered unlikely to cause a water quality violation, and above which it may.” *Id.* at 51. When a pollutant concentration exceeds a benchmark, “corrective action” requirements under Condition S8 are triggered. However, benchmark values “are not water quality standards and are not numeric effluent limitations; they are indicator values.” App. 6 at 51; Ex. B-3, ISGP Fact Sheet at 89 (App. 8 hereto).

Condition S8 sets forth three levels of required corrective action responses, each triggered as a result of exceeding a numeric benchmark value.<sup>4</sup> At each of the three response levels, a permittee must first review its SWPPP to ensure that it fully complies with the requirements in Condition S3 and contains appropriate BMPs from Ecology’s stormwater manuals. App. 6 at 35-36. The permittee must then make appropriate revisions to its SWPPP to include “additional” BMPs “with the goal of achieving the applicable benchmark value(s) in future discharges.” *Id.*<sup>5</sup> Each response level focuses on a different type of BMP, and sets a deadline for implementation of the additional BMPs. Levels 1 and 2 focus respectively on operational source controls and structural source control BMPs. App. 6 at 34-35. Level 3 responses, focused on treatment BMPs, require that a licensed professional engineer, geologist, hydrogeologist or certified professional in stormwater quality design and stamp the portion of the SWPPP addressing stormwater treatment structures or processes. App. 6 at 36.

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<sup>4</sup> A “Level 1” response is triggered whenever a discharge exceeds any applicable benchmark. App. 6 at 34-35. “Level 2” is triggered when a facility exceeds a benchmark for any two quarters during a calendar year. *Id.* at 35. “Level 3” is triggered when a facility exceeds a benchmark value for any three quarters in a calendar year. *Id.* at 36.

<sup>5</sup> The permittee must also sign and certify its revised SWPPP in accordance with Condition S3.A.6, and must summarize the corrective actions taken in the annual report required by Condition S9.B. App. 6 at 35-36.

Consistent with the statutory presumption of compliance in RCW 90.48.555(6), the ISGP provides that, absent discharge monitoring data or other site-specific information demonstrating that a discharge causes or contributes to a violation of water quality standards, Ecology will presume compliance with water quality standards when a permittee is fully complying with and implementing BMPs contained in Ecology-approved storm water technical manuals. App. 6 at 40. To apply AKART, a permittee must implement an adequate SWPPP with applicable BMPs and install and maintain the BMPs in accordance with the SWPPP, Ecology stormwater manuals, and the terms and conditions of the ISGP. *Id.*

**b. Numeric effluent limits for impaired water bodies**

The ISGP also sets forth numeric effluent limitations for existing discharges to “303(d)-listed” impaired water bodies. App. 6 at 32. The ISGP’s list of permittees discharging pollutants of concern to impaired water bodies includes four Boeing facilities that discharge to water bodies listed for fecal coliform and one Boeing facility that discharges to a water body listed for sediment contamination. *See* Appendix 7 hereto. ISGP Condition S6 requires that such facilities comply with effluent limits corresponding to the listed pollutant parameters. App. 6 at 30-32.

The ISGP sets an effluent limit of 30 mg/L for Total Suspended Solids (“TSS”), applicable to any permittee who discharges to a water

body that is “303(d)-listed for any sediment quality parameter.” App. 6 at 32, Table 5, note e.<sup>6</sup> Ecology uses suspended solids as a surrogate for specific chemical compounds that may be found in contaminated sediments because it “would be difficult to calculate an appropriately derived limit for the chemical parameter causing sediment contamination.”<sup>7</sup> Ecology based the TSS limit on its “best professional judgment determination that stormwater discharges with less than 30 mg/L TSS will not cause or contribute to a violation of sediment management standards.” App. 8 at 53.

For permittees discharging stormwater to a water body listed for fecal coliform bacteria, the ISGP establishes an effluent limit for fecal coliform equal to “the water recreation bacteria criteria (WAC 173-201A) applicable to the receiving waterbody.” App. 6 at 32, Table 5, note h; *see* WAC 173-201A-200, Table 200(2)(b). The criteria are numeric values that apply to receiving waters such as streams and lakes, not to individual end-of-pipe discharges. *See* WAC 173-201A-200, Table 200(2)(b).

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<sup>6</sup> TSS can include dirt or mud transported in stormwater runoff. Suspended solids may end up as sediments after discharge to a water body, but are not necessarily contaminated.

<sup>7</sup> Ex. P-26, *Industrial Stormwater Discharges to Impaired Water Bodies: Options for Numeric Effluent Limitations (Draft Report to the Legislature)*, December 2008 (attached as Appendix 9 hereto) at 15, Table 2 n.2.

### **3. The PCHB Appeal.**

Boeing and several other parties appealed the Permit to the PCHB. Boeing argued that the corrective action provisions in Condition S8.D unlawfully disregard the presumption of compliance in RCW 90.48.555(6) to the extent permittees are required to implement BMPs beyond those included in Ecology-approved stormwater manuals, effectively converting the monitoring benchmarks into numeric effluent limitations. Boeing also challenged the TSS and fecal coliform effluent limits as not “appropriately derived” as required by RCW 90.48.555(7).<sup>8</sup>

#### **a. PCHB rulings on the presumption of compliance**

On summary judgment, Ecology asserted that the statutory presumption of compliance is negated where a permittee implementing a Level 3 corrective action response continues to exceed a benchmark, arguing that a benchmark exceedance constitutes site-specific evidence of a violation of water quality standards. The PCHB ruled that, as a matter of law, the ISGP requires that a permittee at Level 3 continue to implement treatment BMPs until its discharges meet benchmark values – even if it is employing all applicable BMPs in Ecology’s stormwater manuals and complying with all Permit conditions. App. 4 at 22-23; App. 3 at 13-14.

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<sup>8</sup> Ecology received numerous comments on the ISGP. Other permittees expressed concerns regarding the same issues raised by Boeing here. *See* Ex. B-5, Addendum to ISGP Fact Sheet, Appendix C (attached hereto as Appendix 10) at 3-5, 19, and 20-26.

Boeing requested reconsideration of those rulings, and the PCHB allowed additional evidence and argument at the hearing on the issue of whether the Permit's Level 3 requirements are inconsistent with the statutory presumption of compliance. In its final decision, the PCHB held that a permittee not meeting benchmarks must "make continued efforts to improve application and performance of BMPs," and the statutory presumption of compliance requires a permittee to institute "increasing levels of corrective actions to meet the benchmark values." App. 2 at 70-71. The PCHB further held as follows:

We conclude that Condition S8.D (Level Three Corrective Actions) of the ISGP should also require the use of monitoring, assessment, or evaluation information as a basis on which Ecology and the permittee may determine whether further modification of the BMPs or additional BMPs are necessary to meet the goal of achieving the applicable benchmark values in future discharges. This information should be included in a permittee's summary of its Level 3 Corrective Actions (planned or taken) submitted in its Annual Report. In this manner, the permit will correctly state the adaptive management process expected of permittees.

When a permittee is taking all the steps required by the adaptive management process, as modified by this opinion, or is *in fact* meeting benchmarks of the permit, then the permittee is entitled to the presumption of compliance provided by the statute.

*Id.* at 71-72 (emphasis in original).

**b. Evidence on derivation of the TSS effluent limit**

In 2006, staff in Ecology's Toxics Cleanup Program told the ISGP team that the 30 mg/L TSS benchmark in the last version of the ISGP was "too simplistic", did not target industrial facilities actually contributing to

sediment contamination, and did not provide useful information. Ex. B-89 at 2 (attached as Appendix 11).<sup>9</sup> In lieu of a TSS benchmark, the Toxics staff recommended “permit requirements for facilities discharging into 303(d) listed sediment areas to determine if the discharges are contributing to the contamination.” *Id.* at 1. In 2008, Ecology rejected this advice because it “would be difficult to calculate an appropriately derived limit for the chemical parameter causing sediment contamination (e.g., DDT, PCB, etc.),” and imposed the TSS limit “as a surrogate for the specific chemical compound causing contamination.” App. 9 at 15.

Boeing presented uncontroverted expert testimony at the PCHB hearing that there is no scientific basis for using TSS as a surrogate for sediment contamination. Dr. Susan Paulsen testified that metals and organic pollutants are not consistently associated with TSS, that TSS is not a reliable generic indicator of pollutants regulated by the Sediment Management Standards, and that, in the absence of site-specific information, stormwater runoff cannot readily be correlated with an exceedance of the sediment standards. Pre-Filed Testimony of Susan C. Paulsen, Ph.D, P.E. (attached hereto as Appendix 12), at 5:7-23; 41-47.

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<sup>9</sup> The 2006 version of the ISGP contained a 30 mg/L TSS benchmark. In the 2010 ISGP, Ecology eliminated the TSS benchmark and included a 30 mg/L TSS effluent limit. *See* App. 15 at 45:4-10.

In his deposition, Ecology’s ISGP Permit Writer Jeff Killelea testified that he did not know whether any research data were considered in arriving at the TSS effluent limit, and that the idea for the TSS limit came from his supervisor, Bill Moore. Ex. P-36, CR 30(b)(6) Dep. of Jeff Killelea at 348 (Appendix 13 hereto). At the hearing, he testified that TSS is “a reasonable surrogate” for sediment contaminants “and a controllable parameter and far more cost effective to both permittees and Ecology.” 2/2/11 Killelea Hr’g Test. at 37:5–7 (Appendix 14 hereto). He testified that to set a more precise numeric effluent limit to address contaminated sediments, Ecology would have to do “expensive” sediment sampling; Ecology had a “big absence of information and data” and would have needed to “do multi-year studies in order to hone in on the precise number, [so] we chose to stick with 30 milligrams per liter TSS.” *Id.* at 38. *See also* App. 15 at 49:3 – 50:12.

**c. PCHB ruling on effluent limit for TSS**

The PCHB addressed the Permit’s TSS effluent limit in Findings of Fact 36 and 37, and Conclusions of Law 19 and 20.<sup>10</sup> The PCHB held that the TSS effluent limit is “valid and was appropriately derived under RCW 90.48.555(7)” because it is “not an unreasonable standard, nor does it impose inordinately high costs on the regulated community,” giving

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<sup>10</sup> In Findings 36 and 37, the PCHB simply summarized Boeing’s and Ecology’s evidence. App. 2 at 27-28.

“deference to Ecology’s conclusion that TSS is a reasonable surrogate to regulate discharges to water bodies that are 303(d)-listed for sediment quality parameters.” App. 2 at 58.

**d. Evidence on derivation of the fecal coliform limit**

Boeing’s expert Dr. Paulsen testified at the PCHB hearing that the “water recreation bacteria criteria” in WAC chapter 173-201A-200 for fecal coliform were not promulgated for use as end-of-pipe numeric effluent limits, but as “geometric mean criteria” for sampling from a receiving water body. App. 12 at 37-38. Dr. Paulsen also testified that using the receiving water criteria as numeric effluent limits for discharge outfalls would in effect require industrial stormwater discharges to meet fecal coliform levels far more stringent than the criteria upon which such limits are ostensibly based. *Id.* at 37-38. Dr. Paulsen also testified that fecal coliform bacteria present in stormwater runoff from industrial facilities are more likely to be from wildlife, birds,<sup>11</sup> and natural bacteria regrowth<sup>12</sup> than from human sources. *Id.* at 37, 39-40.

Ecology’s witness Jeff Killelea testified at the PCHB hearing that the ISGP sets the receiving water recreation criteria as the fecal coliform numeric effluent limit because recreation “is the primary beneficial use of

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<sup>11</sup> Boeing has limited options for controlling access by birds (such as Canada geese) to its sites; Boeing is prohibited by law from interfering with migratory birds and other protected species.

<sup>12</sup> Fecal coliform regrows in the environment, including in storm drains. App. 12 at 40.

most receiving waters in Washington state, and they're identified in tables, and it can be easily identified and applied on a site-specific basis." 2/1/11 Killelea Hr'g Test. at 52:25-53:3 (attached as Appendix 15). Ecology presented no evidence to rebut Dr. Paulsen's testimony.

**e. PCHB ruling on effluent limit for fecal coliform**

The PCHB addressed the Permit's fecal coliform effluent limit in Finding 38, finding that "[w]hile Ecology recognized that fecal coliform is generally associated with nonpoint source pollution or diffuse sources, the agency considered the permit effluent limitation to be an easily applied standard." App. 2 at 28-29. In Conclusion 21, the PCHB held that "no persuasive evidence was offered to show that the fecal coliform effluent limitation could not be 'appropriately derived' or was otherwise unsupportable." App. 2 at 58-59.

**4. Boeing's Request for Direct Review**

Boeing filed its Petition for Judicial Review in Thurston County Superior Court, and filed an Application for Direct Review and Request for Certificate of Appealability. The PCHB granted the Certificate of Appealability, agreeing that delay occasioned by multiple levels of judicial review on the issue of the interpretation of RCW 90.48.555(6) may be detrimental to Boeing in its efforts to comply with the Permit: "Uncertainty in the interpretation and application of this statute may require Boeing to incur costs to develop stormwater treatment methods

that it might not otherwise put in place . . .” App. 1 at 3-4. The PCHB also foresaw precedential value in having an appellate interpretation of RCW 90.48.555(6): “Such precedent would guide this Board, Ecology, and the regulated community in defining the requisite conditions for receiving the presumption of compliance conferred by the statute.” App. 1 at 4.<sup>13</sup>

## **E. ARGUMENT**

### **1. Standard For Acceptance of Direct Review**

Under the APA, direct review from a decision by an environmental board is authorized if the board issues a certificate of appealability and the case is accepted by the court of appeals. RCW 34.05.518(1)(b). The court of appeals applies the same criteria as the PCHB. RCW 34.05.518(5). The court of appeals must determine whether “delay in obtaining a final and prompt determination of the issues would be detrimental to any party or the public interest and either: (i) [f]undamental and urgent statewide or regional issues are raised; or (ii) [t]he proceeding is likely to have significant precedential value.” RCW 34.05.518(3)(b). The criteria for direct review are plainly met here. Delay in resolving the issues at hand would be detrimental to Boeing and to numerous other ISGP permittees,

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<sup>13</sup> The PCHB also ruled that Boeing’s challenge to the numeric effluent limits for TSS and fecal coliform does not raise an issue of statutory construction. App. 1 at 4. Boeing respectfully disagrees. Boeing’s appeal does raise the issue of whether the requirement in RCW 90.48.555(7) for “appropriately derived” effluent limits requires a legitimate scientific or technical justification for such limits. *See* Part E.3 *infra*.

and this appeal raises fundamental and urgent statewide issues likely to have significant precedential value.

## **2. Detrimental Delay**

Delay in obtaining a final and prompt determination of the issues raised in this appeal would be detrimental to Boeing and other ISGP permittees. Boeing operates facilities on over 3,000 acres subject to the ISGP, and is bound by the Permit's corrective action requirements and numeric effluent limits. Prolonged uncertainty over compliance with the Permit's requirements will be detrimental.

As the PCHB recognized, Boeing potentially faces substantial costs to treat stormwater in order to comply with the Permit provisions at issue in this appeal, including costs that it would not otherwise incur if its interpretation of the presumption of compliance is correct. Prompt resolution of the issue of the proper interpretation of RCW 90.48.555(6) is essential, because it may well forestall the need for such expenditures.

Delay in resolution of the issues involving the numeric effluent limit for TSS will also be detrimental. Compliance with the TSS effluent limit will require Boeing to devote substantial effort and expense to address TSS in stormwater discharges at its Duwamish Waterway facility. Boeing potentially faces enforcement liability if it is unable to comply with the TSS limit. A ruling by this Court that the TSS limit was not "appropriately derived" would ameliorate these compliance challenges.

Finally, because Boeing has limited options for preventing fecal coliform contamination by birds or natural bacterial regrowth, and Boeing potentially faces enforcement liability if it is unable to comply with the fecal coliform limit, delay in obtaining appellate resolution of the issue of whether the fecal coliform effluent limit was “appropriately derived” will be detrimental to Boeing.

### **3. Fundamental and Urgent Statewide Issues**

Direct review of the PCHB’s rulings is essential to resolve issues that are fundamental to the effective implementation of the ISGP, and of urgent importance to industrial dischargers throughout Washington. Approximately 1,200 industrial facilities are regulated under the ISGP. Many permittees expressed concerns to Ecology regarding the same issues raised by Boeing in this appeal. *See* n.8 *supra*. If even a fraction of the industrial facilities subject to Level 3 corrective action requirements must install additional stormwater treatment BMPs during the remaining four years of the ISGP, the issue of whether ISGP Condition S8.D is consistent with the presumption of compliance in RCW 90.48.555(6) is of fundamental statewide importance. As affirmed by the PCHB, the ISGP will impose a significant economic burden on industrial dischargers required to devise new stormwater treatment measures beyond those identified in Ecology-approved manuals, in a never-ending effort to meet the Permit benchmarks.

The question of whether Ecology “appropriately derived” its numeric effluent limits for fecal coliform bacteria and TSS is also an issue of fundamental and urgent importance for industrial dischargers in Washington. Boeing’s position is that the statutory requirement that such limits be “appropriately derived” places limits on Ecology’s discretion, and that there must be a credible scientific relationship between the monitored contaminant, the effluent limit, and the water quality standard it is intended to address. The ISGP’s numeric effluent limits for fecal coliform bacteria and TSS fail to meet this statutory standard. Failure to meet these effluent limits is a permit violation, subjecting the discharger to the threat of enforcement action. Existing facilities subject to the fecal coliform effluent limit are located in fifteen Washington counties, including King, Snohomish, Pierce, Thurston, and Clark Counties. Existing facilities subject to the TSS limit are located on the Duwamish River, Duwamish Waterway, and Hood Canal. *See Appendix 7.*

#### **4. Significant Precedential Value**

RCW 90.48.555 applies to two widely-applicable general permits. The interpretation of the presumption of compliance in RCW 90.48.555(6) is a question of first impression significant to all ISGP and CSGP permittees. There is a fundamental difference between Ecology’s interpretation of the presumption, as affirmed by the PCHB, and that of Boeing. Boeing’s position is that the presumption of compliance places

meaningful limits on the corrective action steps permittees must take to comply with the Permit; by contrast, the PCHB rulings give rise to potentially open-ended obligations to install stormwater treatment, encompassing treatment BMPs not even identified in Ecology's own manuals. This Court's interpretation of RCW 90.48.555(6) is likely to affect the role of benchmarks, the scope and nature of required BMPs, and Ecology's duty to update its manuals.

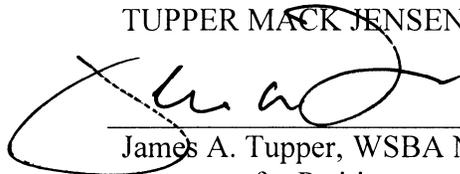
Resolution of the issue of whether and to what extent a numeric effluent limit must have a credible scientific basis in relationship to water quality standards in order to be "appropriately derived" under RCW 90.48.555(7) is also likely to have significant precedential value, affecting Ecology's development of the next iteration of the ISGP.

**F. CONCLUSION**

This Court should accept review for the reasons indicated in Part E, and reverse the PCHB's Orders affirming Condition S8.D as to the statutory presumption of compliance and affirming the TSS and fecal coliform effluent limits.

RESPECTFULLY SUBMITTED this 15<sup>th</sup> day of August, 2011.

TUPPER MACK JENSEN WELLS PLLC



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James A. Tupper, WSBA No. 16873  
Attorneys for Petitioner  
The Boeing Company

## LIST OF APPENDICES

1. Certificate of Appealability, *The Boeing Company v. State of Washington, Pollution Control Hearings Board, et al.*, Thurston County Superior Court No. 11-2-01160-4 (July 15, 2011)
2. Findings of Fact, Conclusions of Law, and Order, *Copper Development Association, Inc., et al. v. Ecology, et al.*, PCHB Nos. 09-135 through 09-141 (April 25, 2011)
3. Order on Summary Judgment (Legal Issues Nos. 15, 24-25, 31, 44, 46-48, 56, 61-62, and 65-67) (Ecology's Motion for Summary Judgment Regarding Issues Raised by Appellants PSA and Boeing), *Copper Development Association, Inc., et al. v. Ecology, et al.*, PCHB Nos. 09-135 through 09-141 (January 5, 2011)
4. Order on Summary Judgment (Legal Issues No. 7, 9, 11, 41, 48, 49, 52, 58, 59, 60) (PSA's Fourth Motion for Summary Judgment), *Copper Development Association, Inc., et al. v. Ecology, et al.*, PCHB Nos. 09-135 through 09-141 (December 23, 2010)
5. RCW 90.48.555 (Laws 2009 c 449 §1)
6. Ex. B-1, Industrial Stormwater General Permit (October 21, 2009)
7. Industrial Stormwater General Permit Appendix 4, List of Existing Permittees that Discharge Pollutants of Concern to Impaired Water Bodies
8. Ex. B-3, Industrial Stormwater General Permit – Fact Sheet (June 3, 2009 Public Comment Draft), pp. 49-57, 88-97
9. Ex. P-26, Dept. of Ecology, *Industrial Stormwater Discharges to Impaired Water Bodies, Options for Numeric Effluent Limitations*, Draft Report to the Legislature (December 2008)
10. Ex. B-5, Industrial Stormwater General Permit Addendum to Fact Sheet: Appendix C – Response to Public Comments (October 21, 2009)
11. Ex. B-89, Dept. of Ecology Memorandum to Water Quality Program Management Team from Jim Pendowski, et al., Toxics Cleanup Program, re Industrial Stormwater General Permit and Sediment Impacts (August 2, 2006)

12. Pre-Filed Testimony of Susan C. Paulsen, Ph.D., P.E. (December 20, 2010)
13. Deposition of Jeff Killelea (July 20, 2010), p. 348
14. Hearing Testimony of Jeff Killelea (February 2, 2011), pp. 36-40
15. Hearing Testimony of Jeff Killelea (February 1, 2011), pp. 43-53

COURT OF APPEALS  
DIVISION II

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STATE OF WASHINGTON  
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CERTIFICATE OF SERVICE

I certify that on August 15, 2011, a copy of the foregoing Motion for Discretionary Review was e-mailed and mailed, postage prepaid, to the following:

Ronald Lavigne  
Senior Counsel  
Department of Ecology  
P. O. Box 40117  
Olympia, WA 98504-0117  
Attorney for Respondent Department of Ecology

Marc Worthy  
Assistant Attorney General  
Licensing & Administrative Law Division  
800 Fifth Avenue, Suite 2000, MS TB-14  
Seattle, WA 98104-3188  
Attorney for Respondent Pollution Control Hearings Board

Beth Ginsberg  
Stoel Rives LLP  
600 University Street, Suite 3600  
Seattle, WA 98101  
Attorney for Appellants below Copper Development Association, Inc. and The International Copper Association, Ltd.

Richard A. Smith  
Smith & Lowney PLLC  
2317 E John Street  
Seattle, WA 98112  
Attorney for Appellants below Olympians for Public Accountability, Puget Soundkeeper Alliance, and Columbia Riverkeeper

Carolyn Lake  
Goodstein Law Group  
501 S. G Street  
Tacoma, WA 98405  
Attorney for Respondent below Port of Olympia

Charles Douthwaite  
Weyerhaeuser  
3363 Weyerhaeuser Way S.  
Federal Way, WA 98003  
Attorney for Intervenor below Weyerhaeuser Company

Arthur West  
120 State Ave NE, #1497  
Olympia, WA 98501  
*Pro Se* Appellant below

Dated this 15<sup>th</sup> day of August, 2011.



Sarah E. Mack  
Sarah E. Mack, WSBA No. 12731  
Attorney for Petitioner  
The Boeing Company

4845-2589-8250, v. 1

COURT OF APPEALS  
DIVISION II

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NO. 42411-8-II

STATE OF WASHINGTON  
BY \_\_\_\_\_  
DEPUTY

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**COURT OF APPEALS, DIVISION II  
OF THE STATE OF WASHINGTON**

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THE BOEING COMPANY,

Petitioner,

v.

STATE OF WASHINGTON, POLLUTION CONTROL HEARINGS  
BOARD, and DEPARTMENT OF ECOLOGY,

Respondents.

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**APPENDICES TO MOTION FOR DISCRETIONARY REVIEW**

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TUPPER MACK JENSEN WELLS PLLC  
James A. Tupper, Jr., WSBA No. 16873  
Sarah E. Mack, WSBA No. 12731  
Lynne M. Cohee, WSBA No. 18496  
Bradford Doll, WSBA No. 38479  
2025 First Avenue, Suite 1100  
Seattle, Washington 98121  
(206) 493-2300

Attorneys for Petitioner  
The Boeing Company

APPENDIX 1

Certificate of Appealability

*The Boeing Company v. State of  
Washington, Pollution Control Hearings  
Board, et al.*, Thurston County Superior  
Court No. 11-2-01160-4

July 15, 2011

1 IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON  
2 IN AND FOR THE COUNTY OF THURSTON

3 THE BOEING COMPANY,

4 Petitioner,

5 v.

6 STATE OF WASHINGTON, POLLUTION  
7 CONTROL HEARINGS BOARD, and  
8 DEPARTMENT OF ECOLOGY,

9 Respondents.

**No. 11-2-01160-4  
(Pollution Control Hearings Board  
Nos. 09-135 through 09-141)**

**CERTIFICATE OF APPEALABILITY  
FOR PCHB NOS. 09-135 through 09-141  
(consolidated)--GRANTED**

10 On or about May 25, 2011, The Boeing Company (Boeing) filed a Petition for Judicial  
11 Review in Thurston County Superior Court of the Pollution Control Hearings Board's (Board)  
12 final decision, and two Orders on Summary Judgment, in the matter of *Copper Development*  
13 *Assc., Inc., et al. v. Dept. of Ecology, et al.*, PCHB Nos. 09-135 through 09-141 (2011).<sup>1</sup> The  
14 Board's Final Order, issued April 25, 2011, concluded that the majority of provisions of the 2010  
15 Industrial Stormwater General Permit (ISGP) issued by the Department of Ecology (Ecology)  
16 were lawful and valid, and remanded certain limited aspects of the permit to Ecology for  
17 modification consistent with the Board's opinion. The ISGP is a National Pollutant Discharge  
18 Elimination System (NPDES) permit, effective for a five year period (January 2010 through  
19 January 2015), and regulates stormwater discharges from approximately 1200 industrial facilities

20 \_\_\_\_\_  
21 <sup>1</sup> Boeing appealed the Order on Summary Judgment (Ecology's Motion), dated January 5, 2011, and Order on  
Summary Judgment (PSA's Fourth Motion), dated December 23, 2010, two of several summary judgment orders  
issued in this case.

**CERTIFICATE OF APPEALABILITY  
FOR PCHB NOS. 09-135 through 141 (consolidated)  
CAUSE NO. 11-2-01160-4**

1 statewide. Ecology uses the general permit process to regulate and administer a single permit for  
2 multiple industries, rather than issuing a large number of individual permits.

3 On June 23, 2011, the Board received Petitioner's Application and Statement of Grounds  
4 for Direct Review, in which Boeing requests a certificate of appealability from the Board  
5 pursuant to RCW 34.05.518 and WAC 371-08-560. Ecology filed a Response in opposition to  
6 the request on July 1, 2011. Boeing filed a Reply on July 8, 2011.

### 7 ANALYSIS

8 The Board has thirty days in which to act on a party's request for a certificate of  
9 appealability, file its decision granting or denying the request with the superior court, and serve  
10 the parties of record. RCW 34.05.518(6)(c).

11 The Board may issue a certificate of appealability under the following circumstances:

12 ...if it finds that delay in obtaining a final and prompt determination of the issues  
would be detrimental to any party or the public interest and either:

- 13 (i) Fundamental and urgent state-wide or regional issues are raised; or  
14 (ii) The proceeding is likely to have significant precedential value.

15 RCW 34.05.518(3)(b).

16 The Board finds that Boeing's request for direct review by the Court of Appeals meets  
17 the standard set forth above, in part, and issues the certificate of appealability for the following  
18 reasons:

- 19 1. Interpretation of RCW 90.48.555(6)

20 The Board has first considered the request for a certificate of appealability as it relates to  
21 the proper statutory construction of RCW 90.48.555(6). Boeing asserts the Board erred in its  
interpretation of RCW 90.48.555(6), which provides a "presumption of compliance" with state

1 water quality standards for those industrial permittees who are full compliance with all permit  
2 conditions and who are fully implementing stormwater best management practices contained in  
3 technical manuals approved by Ecology. RCW 90.48.555(6)(b). The decision of the Board  
4 concluded industrial permittees are afforded this “presumption of compliance” when they engage  
5 in the iterative, adaptive management approach of Condition S8 of the ISGP, with the goal of  
6 meeting the permit’s numerically stated benchmarks, and state water quality standards.  
7 Consistent with earlier Board decisions on related general permit appeals, the Board held the  
8 permittee may have to pursue industry specific responses or increasing level of corrective actions  
9 to meet those benchmarks and comply with water quality standards. *See PSA v. Northwest*  
10 *Marine Trade Assc.*, PCHB Nos. 05-150, 151, 06-034, 040 (2007); *Associated General*  
11 *Contractors v. Ecology*, PCHB Nos. 05-157, 158, 159 (COL 22-25) (2007). Boeing construes  
12 the statute to limit the corrective action steps it must undertake pursuant to the ISGP in the event  
13 its discharges repeatedly fail to meet the permit’s applicable benchmarks or water quality  
14 standards.

15 The Board is persuaded that Boeing, while not representative of, or representing others in  
16 the industrial sectors covered by the permit, has shown that delay occasioned by multiple levels  
17 of appellate review on this issue may be detrimental to Boeing as it seeks to comply with permit  
18 requirements.<sup>2</sup> Uncertainty in the interpretation and application of this statute may require

19  
20 <sup>2</sup> Although Boeing’s Application for Direct Review repeatedly references the interest of other industries covered by  
21 the ISGP, Boeing did not represent those other interests in the appeal before the PCHB. The Weyerhaeuser  
Company intervened in the case as a Respondent, supporting the terms of the ISGP as issued by Ecology, including  
Condition S8 now at issue on appeal.

1 Boeing to incur costs to develop stormwater treatment methods that it might not otherwise put in  
2 place in order to comply with the ISGP and state water quality laws.

3 The Board also finds that there would be precedential value in having an appellate  
4 interpretation of RCW 90.48.555(6). Such precedent would guide this Board, Ecology, and the  
5 regulated community in defining the requisite conditions for receiving the presumption of  
6 compliance conferred by the statute, which applies to all permittees of both the current and future  
7 iterations of the ISGP and the related Construction Stormwater General Permit. RCW  
8 90.48.455(1). It would also provide guidance on the scope of stormwater control technologies  
9 that must be implemented under both general permit schemes.

#### 10 2. Effluent Limitations for Fecal Coliform and Total Suspended Solids

11 The Board is not persuaded that a certificate of appealability should be granted on the  
12 remaining grounds of Boeing's request. Boeing also seeks review of those portions of the  
13 Board's decision that concluded that Ecology complied with state law and "appropriately  
14 derived" numeric effluent limitations for discharges of fecal coliform and Total Suspended  
15 Solids (TSS) to the state's impaired water bodies. State law required the ISGP to "require  
16 compliance with appropriately derived numeric water quality-based effluent limitations for  
17 existing discharges to water bodies listed as impaired according to 33 U.S.C. Sec. 1313(d)(Sec.  
18 303(d) of the federal clean water act, 33 U.S.C. Sec. 1251 et seq)." RCW 90.48.555(7).

19 Boeing's request does not raise an issue about proper statutory construction of this  
20 requirement. Rather, Boeing asserts that delay in resolution will cause it to incur additional and  
21 substantial costs. However, as Ecology points out, Ecology has granted Boeing several

1 compliance schedules which set alternative dates for Boeing to comply with the fecal coliform  
2 and TSS requirements, which were otherwise effective in January 2010. *Lavigne Decl., Exs. A-*  
3 *H.* Although granted additional time, Boeing has already had to incur costs to meet the requested  
4 compliance schedules. Compliance with the ISGP required all industries to take new measures  
5 to meet stricter NPDES requirements. Direct review will do little to timely address this issue.  
6 Thus, we do not find the requisite harm necessary for issuance of the certificate.

7       Even if we agreed with Boeing's assertions of potential financial harm related to  
8 continuing compliance with effluent limitations for fecal coliform and TSS, the Board is unable  
9 to find that there is either a fundamental and urgent state-wide issue presented, or a significant  
10 precedential value to resolution of whether Ecology appropriately derived specific effluent  
11 limitations for these pollutant parameters in the ISGP, as required by the statute. This question  
12 was largely a fact-based inquiry that required consideration of Ecology's specialized knowledge  
13 and expertise in a highly technical and scientific area, requiring the Board to give some  
14 deference to Ecology. *Port of Seattle v. Pollution Control Hearings Board*, 151 Wn.2d 568, 595,  
15 90 P.3d 659 (2004). The Board weighed the testimony of other, competing experts as well. As  
16 Ecology points out, these particular limits are not contained in the Construction Stormwater  
17 General Permit, and no other regulated entity appealed these limits. Given these factors, we  
18 conclude the test for a certificate of appealability on these issues is not met. However, because  
19 we find the test for a certificate is met on the first issue discussed above, we issue the certificate  
20 of appealability.

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**ORDER**

The Petitioner's (Appellant below) request for a certificate of appealability in this case,  
PCHB Nos. 09-135 through 09-141(Thurston County Superior Court Cause No. 11-2-01160-1),  
is GRANTED.

SO ORDERED this 15<sup>th</sup> day of July, 2011.

**POLLUTION CONTROL HEARINGS BOARD**

Kathleen D. Mix  
KATHLEEN D. MIX, Presiding

William H. Lynch  
WILLIAM H. LYNCH, Member

Andrea M. Doyle  
ANDREA MCNAMARA DOYLE, Member

## APPENDIX 2

Findings of Fact, Conclusions of Law, and  
Order

*Copper Development Association, Inc., et al.*  
*v. Ecology, et al.*, PCHB Nos. 09-135 through  
09-141

April 25, 2011

1                                   BEFORE THE POLLUTION CONTROL HEARINGS BOARD  
2                                   STATE OF WASHINGTON

3 COPPER DEVELOPMENT  
4 ASSOCIATION, INC., and THE  
5 INTERNATIONAL COPPER  
6 ASSOCIATION, LTD., OLYMPIANS FOR  
7 PUBLIC ACCOUNTABILITY, ARTHUR  
8 WEST, PUGET SOUNDKEEPER  
9 ALLIANCE, COLUMBIA RIVERKEEPER,  
10 THE BOEING COMPANY, and  
11 GUNDERSON RAIL SERVICES,

12                                   Appellants,

13                                   v.

14 STATE OF WASHINGTON,  
15 DEPARTMENT OF ECOLOGY, and the  
16 PORT OF OLYMPIA,

17                                   Respondents,

18 WEYERHAEUSER COMPANY,

19                                   Intervenor.

PCHB Nos. 09-135 through 09-141

FINDINGS OF FACT, CONCLUSIONS OF  
LAW, AND ORDER

20                                   INTRODUCTION AND PROCEDURAL HISTORY

21                                   Multiple parties filed appeals of the Industrial Stormwater General Permit (ISGP or  
General Permit) issued by the Department of Ecology (Ecology) in October 2009. Attorney  
Richard A. Smith represented Appellants Puget Soundkeeper Alliance, Columbia Riverkeeper,  
and Olympians For Public Accountability (collectively referred to as PSA). Attorneys James A.  
Tupper and Bradford Doll represented Appellant The Boeing Company (Boeing). Attorney Beth  
Ginsberg represented Appellant Copper Development Association and the International Copper  
Association, Ltd. (collectively referred to as Copper Groups). Assistant Attorney General

FINDINGS OF FACT, CONCLUSIONS  
OF LAW, AND ORDER  
PCHB Nos. 09-135 through 09-141 (*consolidated*)

1 Thomas J. Young and Senior Counsel Ronald L. Lavigne represented Respondent Department of  
2 Ecology (Ecology). Attorney Carolyn Lake represented Respondent Port of Olympia (Port).  
3 Attorney Charles Douthwaite represented Respondent-Intervenor Weyerhaeuser NR Company  
4 (Weyerhaeuser). The Board dismissed Appellant Arthur West as a party to this appeal by Order  
5 dated February 7, 2011, for failing to appear and participate in any manner at hearing, and failing  
6 to comply with aspects of the Pre-Hearing Order.

7 A Pre-Hearing Order dated January 25, 2010, identified seventy-one (71) legal issues  
8 which governed the proceedings and controlled the issues before the Board on appeal. The  
9 Board entered seven Orders on Summary Judgment addressing many of the legal issues raised by  
10 the parties, while requiring others to proceed to hearing.<sup>1</sup> After the completion of motion  
11 practice, thirty-one (31) issues remained for hearing. For ease of reference those issues are set  
12 out in Appendix A to this decision. The issues remaining for hearing addressed the validity of a  
13 number of aspects of the ISGP, and generally include the following: 1) the basic framework of  
14 the permit, with its combination of benchmarks and numeric effluent limitations; 2) specific  
15 benchmark values, and the methodology to derive them, including those for copper, zinc, oil, and  
16 those applicable to the timber and paper products industry; 3) several of the numeric effluent  
17 limitations for discharges to 303(d)-listed water bodies, or the omission of such limitations; 4)  
18 compliance with antidegradation requirements of state law; 5) monitoring and sampling  
19 requirements; 6) adaptive management/corrective action requirements, including the associated

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21 <sup>1</sup> Boeing filed a motion for reconsideration of one aspect of the Board's January 5, 2011 Order on Summary Judgment (Legal Issues No. 31 and 62). The Board allowed Boeing to present evidence on the disputed issues and addresses the Motion further below.

1 waiver and extension provisions; 7) backsliding prohibitions; 8) standing; and 9) miscellaneous  
2 other issues that we conclude have been abandoned.

3 The Board held a hearing in this matter on January 24 through February 3, 2011, at the  
4 Board's offices in Tumwater, Washington. Board Member Kathleen D. Mix presided for the  
5 Pollution Control Hearings Board, joined by Board Member William H. Lynch and Board Chair  
6 Andrea McNamara Doyle. Randi Hamilton and Kim Otis of Gene Barker and Associates,  
7 Olympia, Washington provided court-reporting services.

8 The Board received the sworn testimony of witnesses, admitted exhibits, and heard  
9 arguments on behalf of the parties. Having fully considered the record, the Board enters the  
10 following:

#### 11 FINDINGS OF FACT

##### 12 A. Background to Permit Development

13 [1]

14 Ecology issued the ISGP on October 21, 2009, with an effective period of five years,  
15 from January 1, 2010, to January 1, 2015. This version of the General Permit replaces the 2004  
16 ISGP, which was re-issued without changes on August 15, 2007, and October 15, 2008. The  
17 ISGP is a National Pollutant Discharge Elimination System (NPDES) permit, issued on a  
18 statewide basis to regulate stormwater discharges at approximately 1200 industrial facilities that  
19 discharge stormwater to surface waters or to a storm sewer system that drains to surface waters.  
20 The ISGP, like other general permits, allows Ecology to regulate and administer a single permit  
21 for multiple industries that discharge to waters of the State, rather than issuing individual

1 NPDES discharge permits to multiple industrial dischargers.<sup>2</sup> *ISGP, Fact Sheet; Killelea*  
2 *Testimony.*

3 [2]

4 Ecology's decisions on the final terms of the 2010 ISGP were informed by several  
5 processes. Consultants Envirovision and Herrera Environmental prepared a 2006 evaluation of  
6 possible methods to improve the effectiveness of the ISGP, studying extensive sets of data to  
7 examine issues related to monitoring and the use of numeric effluent limitations in the permit. A  
8 2008 survey of field inspectors and enforcement staff identified areas where the previous permit  
9 had worked well or needed improvement. Ecology also used an internal and external committee  
10 process to develop the 2009 ISGP. An internal Ecology team, comprised of inspection and  
11 enforcement staff, engineers, and policy managers, developed permit terms. An external  
12 committee comprised of environmental and business interests, local government representatives,  
13 and others reviewed, commented, and also helped develop the final version of the ISGP. In 2006  
14 and 2007 Ecology released draft permits for public comment, but these drafts were highly  
15 controversial. Both Ecology and the regulated community had substantial concerns about the  
16 cost of implementation. Concerned with the legal defensibility of the permit terms, Ecology  
17 continued to refine permit terms. *Exs. B-35, P-6; Killelea Testimony.*

18 [3]

19 As it developed the 2010-2015 iteration of the ISGP, Ecology sought to address several  
20 problems it had identified with the prior permitting approach. First, Ecology considered the

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21 <sup>2</sup> Boeing, PSA, and Ecology each offered the 2010 ISGP and related draft Fact Sheet into evidence, and the Board admitted the same. Exs. B-1, P-1, E-1, B-3, P-2, E-2. For ease of reference in this opinion those exhibits will be referred to as the "ISGP," or "Fact Sheet," or reference will be made directly to the relevant permit condition.

1 previous permit to be overly complex, confusing, and long. Second, the corrective action  
2 provisions of the previous permit had proved ineffective and difficult to enforce. Finally,  
3 Ecology had questions as to whether or not the benchmark values of the previous permit were  
4 protective enough of water quality, and also wanted to clarify the requirements that must be  
5 included in a facility Stormwater Pollution Prevention Plan (SWPPP), a centerpiece of  
6 stormwater management. *Ex. P-6; Killelea Testimony.*

7 [4]

8 Historically, full compliance with all the terms of the ISGP by regulated facilities has  
9 been low. In 2009, when Ecology issued the Fact Sheet which accompanied the draft permit, it  
10 provided statistics showing varying compliance rates on key permit terms, stating “[F]acility  
11 inspections have revealed that many facilities with permit coverage are not in compliance with  
12 permit provisions.” Facilities were not submitting discharge monitoring reports (DMRS) (30%  
13 not submitting in 2008). While three quarters of facilities could provide their stormwater  
14 pollution prevention plan at the time of inspection, forty percent or less of permitted sites had up-  
15 to-date, fully implemented SWPPPs. Sixty to seventy percent of facilities could identify one or  
16 more best management practices (BMPs) that were maintained to manage stormwater. Ecology  
17 concluded that the overly complex and confusing aspects of the previous permit, in addition to its  
18 sheer length, made it difficult for permittees to fully comply with its requirements. *Exs. E-6,*  
19 *Fact Sheet, p. 36; Kaufman, Stasch Testimony.*

20 [5]

21 Despite this lack of full compliance by the regulated industrial sector, the rate of  
compliance with key permit terms has consistently improved over the last five years, in areas

1 such as implementing BMPs and complying with monitoring requirements. Ecology is  
2 combining technical assistance with effective enforcement strategies in order to improve permit  
3 compliance. Ecology has made a concerted effort to improve the submittal rates for DMRs, with  
4 an escalating series of warning letters and “field ticket” enforcement efforts. This latter effort  
5 results in a \$3000 penalty where there has been a repeated failure to submit DMRs over three  
6 reporting quarters. Despite widespread and substantial budget reductions in state government  
7 generally, and at the agency specifically, Ecology is attempting to maintain stormwater  
8 inspection and enforcement staff as a high priority. *Moore, Stasch, Kaufman Testimony.*

9 [6]

10 Ecology also developed the framework and specific terms of the 2010 ISGP in  
11 recognition of the unique nature of stormwater. In contrast to other wastewater discharges and  
12 point sources of pollution, stormwater runoff exhibits highly variable flow rates and flow  
13 volumes, a fact this Board has repeatedly recognized in appeals of stormwater general permits.  
14 Pollutant concentrations can vary greatly. Stormwater monitoring data reveals far greater  
15 variability than other types of pollutant discharges regulated by other NPDES permits.  
16 Derivation of effluent limitations or determination of patterns in discharges is made more  
17 difficult because of this, and there is a recognized need for large, comprehensive data sets to  
18 adequately characterize industrial stormwater discharges, including such characteristics as flow  
19 volumes and rates and constituent concentrations. Based on this understanding of the complexity  
20 and variability of industrial stormwater discharges, Ecology determined that stormwater  
21 discharges from industrial facilities, as a general matter, may cause a violation of water quality

1 standards for a number of pollutant parameters, and the agency developed effluent limitations to  
2 address the same. *Fact Sheet, Ex. B-35; Killelea Testimony, Paulsen Testimony.*

3 [7]

4 The federal Environmental Protection Agency (EPA) provides permit coverage for  
5 industrial facilities in geographic areas and for classes of discharges that are outside the scope of  
6 a state's NPDES program. EPA does this through the current version of the Multi-Sector  
7 General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP), which is  
8 effective from September 2008 through September 2013. *Exs. B-59, E-3.* Ecology both relied  
9 on and borrowed from terms and approaches in the MSGP, but the two permits are not identical.  
10 EPA commented favorably on many of the terms of Ecology's ISGP, concluding that in many  
11 respects the state version is more robust and effective at regulating industrial stormwater  
12 discharges than the MSGP. *Ex. P- 21; Killelea Testimony.*

13 **B. Overview of Relevant Permit Terms**

14 [8]

15 The ISGP regulates multiple industrial sectors. These broad sectors of industries are  
16 identified by the Standard Industrial Classification (SIC) Code system. In drafting the permit,  
17 Ecology considered the manner in which stormwater may become contaminated by industrial  
18 activities as a result of industrial processes, such as contact with material stored outside or during  
19 loading, unloading or transfer, spills and leaks, and from airborne contaminants. Ecology  
20 recognized that potential pollutants were often industry specific, but that there were also  
21 significant common sources of stormwater contamination from the industrial sector (*e.g.*

petroleum products and metals are common to most facilities). Using DMR data submitted by

FINDINGS OF FACT, CONCLUSIONS

OF LAW, AND ORDER

PCHB Nos. 09-135 through 09-141 (*consolidated*)

1 permittees, Ecology compiled a characterization of pollutant concentrations present in the  
2 discharges from various industry sectors. This data was consistent with other observations and  
3 studies, to the effect that “first flush” events (runoff after a dry period) are associated with high  
4 pollutant concentrations, and that there is a high degree of variability in stormwater runoff. *Fact*  
5 *Sheet, pp. 3-34.*

6 [9]

7 *Stormwater Pollution Prevention Plans (Condition S3.)*

8 As with other general permits issued by Ecology to regulate stormwater discharges, a key  
9 provision of the ISGP is the requirement that all permittees develop and implement a Stormwater  
10 Pollution Prevention Plan (SWPPP). The ISGP sets out the items that the SWPPP must address  
11 at each facility. The SWPPP must specify the best management practices (BMPs) necessary to  
12 implement all known, available and reasonable methods of treatment (AKART), ensure  
13 compliance with state water quality standards, and comply with applicable federal technology-  
14 based treatment requirements. The ISGP requires the SWPPP to contain a site map, a detailed  
15 facility assessment, a detailed description of BMPs, a spill prevention and emergency cleanup  
16 plan, and a sampling plan. The SWPPP must contain certain “mandatory BMPs” (defined in the  
17 permit), including a number of operational source control BMPs. The SWPPP must also include  
18 structural source control BMPs that are listed as applicable in Ecology’s Stormwater  
19 Management Manual (SWMM). The ISGP defines the manner and use of treatment BMPs.  
20 Finally, the SWPPP is to contain a sampling plan, with identified points of discharge, and  
21 documentation of why each discharge point is not sampled, consistent with other permit terms.

*Condition S3.*

FINDINGS OF FACT, CONCLUSIONS  
OF LAW, AND ORDER

PCHB Nos. 09-135 through 09-141 (*consolidated*)

1 [10]

2 *General Sampling Requirements (Condition S4.)*

3 General sampling requirements are set out in Condition S4. of the ISGP, requiring  
4 discharge sampling from each designated location at least once per quarter, and more specific  
5 provisions applicable to sampling required at the first fall storm event of each year. The permit  
6 allows a permittee to suspend sampling for one or more parameters (other than “visible oil  
7 sheen”) based on “consistent attainment” of benchmark value after four consecutive quarterly  
8 samples. *Condition S4.B.6.* The prior permit required eight consecutive quarters of attainment  
9 before a permittee could suspend sampling. *Exs. P-5, B-36.* A permittee may not suspend  
10 sampling based on consistent attainment for pollutant parameters that are subject to numeric  
11 effluent limits based on federal guidelines or a 303(d) listing as an impaired water body.  
12 *Condition S4.B.8.* Permittees monitoring more than once per quarter may average all the  
13 monitoring results for each parameter (except pH and “visible oil sheen”), and compare that  
14 value to the benchmark. *Condition S4.; Killelea Testimony.*

15 [11]

16 *Benchmarks, Effluent Limitations, and Specific Sampling Requirements (Condition S5.)*

17 Condition S5 of the ISGP establishes benchmarks (stated numerically) that are applicable  
18 to all facilities, and additional benchmarks that are applicable to specific industry sectors.  
19 *Condition S5., Table 2 and Table 3.* The term “benchmark” is defined in the permit as “a  
20 pollutant concentration used as a permit threshold, below which a pollutant is considered  
21 unlikely to cause a water quality violation, and above which it may.” The definitions also states

that when a pollutant concentration exceeds the benchmark, corrective action requirements are

1 triggered, but emphasizes that benchmark values “are not water quality standards and are not  
2 numeric effluent limitations; they are indicator values.” *ISGP, Appendix 2*. Thus, benchmarks  
3 are predictive of potential water quality violations, and trigger a BMP-based response by the  
4 permittee. Ecology’s definition of “benchmark” in the ISGP mirrors the definition used by EPA  
5 in the MSGP, with minor wording changes. The prior permit had a combination of benchmark  
6 values and “action levels,” but this two-tiered system was confusing and complex to administer.  
7 *Ex. P-21; Killelea Testimony.*

8 [12]

9 The five benchmarks that are applicable to all facilities are as follows: 1) Turbidity at 25  
10 NTU, 2) pH at between 5.0 and 9.0 Standard Units, 3) Oil Sheen at “no visible sheen,” 4) Total  
11 Copper at 14 µg/L for Western Washington and 32µg/L for Eastern Washington, and 5) Total  
12 Zinc at 117µg/L. The permit requires sampling once per quarter for each of these parameters.  
13 *Condition S5., Table 2*. The copper benchmark is substantially lower (more stringent) than the  
14 previous permit, and now applies to all permittees, but the zinc benchmark remains the same.  
15 Both PSA and Copper Groups dispute the methodology used to establish the copper benchmark,  
16 and argue that it is either underprotective (PSA), or overprotective (Copper Groups) of beneficial  
17 uses. *Horner Testimony, Paulsen Testimony*. PSA also disputes the change to a “no visible  
18 sheen” measurement of for oil and grease, and takes issue with the zinc benchmark. *Killelea*  
19 *Testimony.*

20 [13]

21 The only additional benchmarks and sampling requirements at issue in this appeal are  
those applicable to the Timber Product Industry and Paper and Allied Products Industry. PSA

1 asserts these are less stringent than the previous iteration of the ISGP. The permit sets a  
2 benchmark of 120 mg/L for COD (chemical oxygen demand) and a benchmark of 100 mg/L for  
3 TSS (total suspended solids). The prior permit had a lower benchmark for Biological Oxygen  
4 Demand (BOD), and a dissolved oxygen (DO) benchmark for certain industries or facilities.

5 *Condition S5.B., Table 3; Horner Testimony, Johnson Testimony, Killelea Testimony.*

6 [14]

7 *Discharges to 303(d)-listed or TMDL Waters (Condition S6.)*

8 In addition to the benchmarks of Condition S5., Condition S6. of the ISGP sets out eleven  
9 (11) numeric effluent limitations, and associated sampling requirements, for discharges to  
10 303(d)-listed water bodies.<sup>3</sup> Facilities that are subject to these numeric effluent limitations are  
11 set forth (although not limited to) the facilities listed in Appendix 4 to the permit. *Condition*  
12 *S6.C.a., and Table 5.* Boeing and PSA each challenge limited aspects of this condition of the  
13 ISGP related to impaired water bodies. Boeing asserts that the Total Suspended Solids (TSS)  
14 effluent limit of 30 mg/L is too stringent, as is the limit for fecal coliform bacteria, which is set at  
15 the water recreation bacteria criteria of WAC 173-201A. Boeing asserts these were not  
16 “appropriately derived” effluent limitations as directed by RCW 90.48.555, and are not science-  
17 based. *Paulsen Testimony.* PSA, on the other hand, asserts that Ecology erred in failing to set  
18 numeric effluent limitations for three additional parameters of concern in 303(d)-listed waters:  
19 temperature, dissolved oxygen, and impairment based on fish tissue/bioassay. *Horner*  
20 *Testimony.*

21 \_\_\_\_\_  
<sup>3</sup> 303(d)-listed water bodies is a reference to those segments of water bodies that have been listed as impaired pursuant to the federal Clean Water Act, at 33 U.S.C. § 1313(d).

*Corrective Actions (Condition S8.)*

Condition S8. of the ISGP requires three increasingly demanding levels of corrective action when a permittee exceeds applicable benchmark values set out in the other terms of the permit. These corrective actions begin with the assumption that the permittee has in place a SWPPP that represents AKART, and the corrective actions steps will result in incremental improvement in the application or use of BMPs to address the benchmark exceedance(s). A Level 1 corrective action is required for any exceedance of the applicable benchmark, and requires the permittee to make appropriate revisions to the SWPPP to include additional Operational Source Control BMPs with the goal of achieving applicable benchmark values in future discharges. The permittee must summarize the Level 1 corrective actions in its annual report to Ecology. The permit establishes a deadline to fully implement the revised SWPPP “as soon as possible, but no later than the DMR due date for the quarter the benchmark was exceeded” (which is forty-five days after the end of the quarter, per Condition S9.A.4.).

*Condition S8.B.* Although Ecology views this Level 1 provision as substantially identical to the previous permit, the 2010 ISGP does not have a specific timeframe by which a permittee must initiate a response to a benchmark exceedence, whereas the previous permit required a facility inspection “as promptly as possible but no later than two weeks after sampling results.” Exs. P-5, B-36; *Killelea Testimony*.

The permit requires a Level 2 corrective action when a permittee exceeds an applicable benchmark value for any parameter for any two quarters during a calendar year. At a Level 2

1 corrective action, the permittee must review the SWPPP and revise it to include additional  
2 structural source control BMPs, with the goal of meeting the benchmark values in future  
3 discharges. Corrective actions planned or taken must be summarized in the Annual Report to  
4 Ecology (due May 15 of the following calendar year, per Condition S9.B.1.). The deadline is for  
5 implementation of the revised SWPPP is “as soon as possible, but no later than September 30<sup>th</sup>  
6 the following year.” *Condition S8.C.* The permit includes no deadline by which a permittee must  
7 begin a Level 2 response. Ecology expects some permittees will begin implementing Level 2  
8 structural source control BMPs as soon as possible in an effort to avoid a third benchmark  
9 exceedence in the same calendar year, which would trigger a Level 3 response; however, the  
10 agency is interpreting the permit and advising permittees that they may wait until the end of a  
11 calendar year to begin a Level 2 response even if a benchmark was exceeded in the first two  
12 quarters. *Killelea Testimony; Stasch Testimony.*

13 [17]

14 The permit requires a Level 3 corrective action when a permittee exceeds an applicable  
15 benchmark value for any single parameter for any three quarters during a calendar year. At a  
16 Level 3 corrective action level, the permittee must revise the SWPPP and include additional  
17 treatment BMPs with the goal of achieving the benchmark in future discharges. The permittee  
18 must sign and certify the revised SWPPP, and also have a licensed professional engineer,  
19 geologist, hydrogeologist, or Certified Professional in Storm Water Quality (CPSWQ) design  
20 and stamp the portion of the SWPPP that addresses stormwater treatment structures or processes.  
21 Ecology may waive this certification requirement one time during the permit cycle when the

permittee demonstrates that either the permittee or a treatment device vendor can properly design

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1 and install the treatment device. The permittee must fully implement the revised SWPPP as soon  
2 as possible, but no later than September 30th the following year. *Condition S8.D.4.; Killelea*  
3 *Testimony.*

4 [18]

5 Ecology may modify the deadlines for a Level 2 or Level 3 corrective actions if  
6 installation of necessary structural source control BMPs (Level 2) or treatment BMPs (Level 3)  
7 is not feasible by the permit’s deadline. If installation of structural source control or treatment  
8 BMPs is “not feasible or not necessary” to prevent discharges that may cause or contribute to a  
9 violation of a water quality standard, Ecology may waive the requirement altogether. Both  
10 modifications of the deadlines and waiver of the requirements are accomplished through a  
11 “modification of coverage” request, which results in a formal modification of the permit to that  
12 particular permittee. Boeing asserts that the waiver provisions are unclear and ambiguous,  
13 particularly as it relates to other requirements of the permit to implement the adaptive  
14 management scheme in an effort to meet benchmarks. PSA says the waiver provision is  
15 unlawful as the permit then fails to require compliance with water quality standards.

16 [19]

17 In addition to the permit terms allowing modification of deadlines, or waivers of the  
18 Level 2 and Level 3 requirements, Condition S8. contains two footnotes that have cast confusion  
19 on when a Level 3 deadline is triggered if a permittee has already undertaken a Level 2 response.  
20 *Condition S8.C. and D. (footnotes 4 and 5).* Ecology intended that these footnotes would clarify  
21 that a permittee must consider an entire calendar year of sampling results before determining

whether to implement a Level 2 or 3 corrective action, but the language of footnote 4 in

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1 particular, suggests otherwise. Ecology’s interpretation would result in “alternating years” for  
2 implementation of such corrective actions, something Ecology wanted in the permit’s adaptive  
3 management scheme in order to give facilities adequate time to address reported problems.

4 *Killelea Testimony.*

5 [20]

6 Both PSA and Boeing criticize the ISGP’s fundamental reliance on a combination  
7 effluent limitations expressed either as benchmarks, which are part of the adaptive management  
8 scheme of the permit, and the numeric effluent limitations applicable to particular discharges.  
9 PSA asserts that Ecology should establish numeric effluent limitations for all industrial  
10 discharges, and that it is feasible to do so. PSA reasons that this would force facilities to transfer  
11 industrial activities and material out of contact with rainfall and runoff, resulting in maximum  
12 reuse of industrial stormwater, and treatment of the remainder with the best available  
13 technologies. PSA asserts that these numeric effluent limitations should be based on a  
14 “reasonable potential analysis” that would assess whether there is a reasonable potential for  
15 discharges to cause or contribute to water quality standards exceedances, where non-numeric,  
16 BMP-based approaches are ineffective. *Horner Testimony.* Boeing, on the other hand, presented  
17 evidence criticizing both the benchmark-based BMP aspects of the permit, and the inclusion of  
18 any numeric effluent limitations. Boeing asserts that existing datasets are insufficient to allow  
19 determination of “reasonable potential,” or to serve as the basis for the calculation of  
20 scientifically sound effluent limitations or benchmarks. While agreeing that a BMP-based  
21 approach is both feasible and improves water quality, Boeing asserts this approach should be

1 paired not with “benchmarks,” but rather with “action levels,” which are a less rigorous trigger  
2 for adaptive management at a particular facility. *Paulsen Testimony.*

3 [21]

4 Business entities subject to regulation under the terms of the ISGP offer conflicting views  
5 as to the clarity, lawfulness and acceptability of various permit terms. Boeing and  
6 Weyerhaeuser, both parties to this case presented contrasting views of their ability to understand  
7 and comply with permit terms. Boeing testified that the adaptive management provisions of the  
8 permit are extremely confusing, and that they are unsure of the meaning of waiver provisions  
9 that provide facilities relief from aspects of the corrective action provisions of the permit.  
10 Boeing questions whether the corrective action scheme of the ISGP actually represents a real  
11 adaptive management process that includes planning, implementation, monitoring, and  
12 responding, as was intended, or whether the permit’s prescriptive emphasis on meeting  
13 benchmarks that apply uniformly across industrial sectors will drive an excessive amount of  
14 needless corrective action by business. *Oleson Testimony.* In contrast, Weyerhaeuser states the  
15 new permit provides site managers with a confident path to compliance, giving them a good  
16 balance of mandatory BMPs and industry specific BMPs, as well as associated “waiver”  
17 provisions that allow the facility to show it can still comply with water quality provisions, even if  
18 it cannot consistently meet the permit’s benchmark indicator values. The company’s corporate  
19 environmental manager expressed a clear understanding of what the business would do if one of  
20 its facilities continued to fail to meet benchmark values, and needed a waiver of the corrective  
21 action level responses under Condition S8. Weyerhaeuser states that the new permit is less

1 complex than the last iteration, particularly in the corrective action provisions. *Johnson*  
2 *Testimony.*

3 C. Development of Benchmarks

4 1. *Copper and Zinc Benchmarks*

5 [22]

6 The previous version of the ISGP had a copper benchmark of 63.6 µg/L and a zinc  
7 benchmark of 117 µg/L. *Ex. P-5.* Ecology's decision to include a much lower copper  
8 benchmark in this version of the ISGP was influenced by experience in setting a very high  
9 copper benchmark in the 2005 Boatyard General Permit (which was set aside on appeal), and a  
10 turbidity benchmark in the 2005 Construction Stormwater General Permit (which was affirmed  
11 on appeal). With the ISGP benchmark value for copper and zinc, Ecology sought to protect  
12 beneficial uses in the vast majority of conditions, balancing that goal with a recognition that  
13 toxicity of metals (and some other pollutants) is influenced by factors in the receiving waters,  
14 where the discharge is dispersed. *Killelea Testimony.*

15 [23]

16 Copper can decrease survival, growth, and reproduction of aquatic organisms. Copper  
17 concentrations in stormwater discharges have a number of serious sublethal effects on salmonids.  
18 Copper can interact with the olfactory system of fish and aquatic invertebrates, causing them to  
19 avoid copper-containing water. Once impaired by copper exposure, fish and organisms will lose  
20 important functions such as attraction to food odors and reproductive pheromones, or avoidance  
21 of predators. Studies have demonstrated avoidance of copper or impairment of olfaction in  
salmonid fishes exposed to very low levels of copper concentrations (as low as 1 to 2µg Cu/L).

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1 In addition to disrupted osmoregulation, inhibited migration, and olfactory impairment, other  
2 studies identify copper exposure as contributing to impaired disease resistance, impaired  
3 respiration and brain function, and altered blood chemistry. While experts largely agree on the  
4 range of lethal and sublethal effects of copper on salmonids and other aquatic organisms, there is  
5 sharper disagreement about the extent to which water chemistry, and Washington specific water  
6 chemistry, modifies the acute and chronic toxicity of copper to these organisms. There is related  
7 disagreement as to the interpretation of various studies, and at what copper concentration levels  
8 adverse effects appear in salmonid fish. *Meyer Testimony, Horner Testimony; Exs. C-7, C-10.*

9 [24]

10 In order to develop the copper benchmark for this iteration of the ISGP, Ecology hired  
11 Herrera Environmental Consultants to evaluate the effects of receiving water chemistry on the  
12 toxicity of copper discharges. Herrera evaluated the probability of exceeding the acute water  
13 quality standards for copper, lead, and zinc based on receiving water conditions having the  
14 highest potential for occurrence. *Killelea Testimony, Lenth Testimony.* Herrera, lead by  
15 principle scientist John Lenth, produced a report in February 2009 addressing this issue. *Water*  
16 *Quality Risk Evaluation for Proposed Benchmarks/Action Levels in the Industrial Stormwater*  
17 *General Permit. Exs. B-20, P-12, E-6; Lenth Testimony.*

18 [25]

19 The Herrera report relies on a Monte Carlo simulation, a well-established statistical  
20 method utilized to estimate possible outcomes from a model by performing repeated calculations  
21 a large number of times and observing the outcomes. When the results from all the repeated  
calculations are combined, a probability distribution can be derived for the model output that

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1 indicates which predicted values have a higher probability of occurrence. In this case, Herrera  
2 used the Monte Carlo simulation to give a realistic prediction of the probability of industrial  
3 stormwater discharges exceeding the acute water quality criteria for copper, lead, and zinc, given  
4 one of three dilution factors in the receiving water (1, 5, or 10). Experts agree that the dynamic  
5 modeling approach of a Monte Carlo simulation provides a more realistic representation of  
6 receiving water concentrations and/or toxicity than steady-state models used to evaluate less  
7 variable effluent discharges such as those from waste water treatment plants. *Lenth Testimony,*  
8 *Paulsen Testimony.* The Herrera report presented the results of the simulation as a series of  
9 graphs that depict the percentage (%) probability of exceeding water quality standards as a  
10 function of effluent concentrations given one of these three dilution factors. These graphs  
11 presented Ecology a picture of the likelihood, or risk, of exceeding water quality criteria for each  
12 of these pollutants, depending on the given dilution factor. Ecology then had a policy choice to  
13 determine which of the risk levels, and associated discharge effluent limitations, were acceptable  
14 and could be used for permit benchmarks. The Herrera report also used a “translator value” to  
15 facilitate comparison of the acute water quality standard for copper in the receiving water with  
16 the predicted concentration of copper at the point of discharge. The translator value allowed  
17 Herrera to estimate the dissolved fraction of copper that would be present in the receiving water  
18 for effluent concentrations that are required by federal regulations to be expressed as total  
19 recoverable metals. The evaluation also factored in the hardness of receiving waters in Western  
20 and Eastern Washington. The author of the Herrera report sets out the data relied upon, and in  
21 pre-filed testimony clarifies and responds to criticisms levied by other experts of that data. *Lenth*

*Testimony, Exs. B-20, P-12, E-6.*

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1 [26]

2 Based on the Herrera analysis and probability “risk curves,” Ecology made the decision  
3 to base the copper benchmark in the ISGP on a dilution factor of 5 and a 10% probability of  
4 exceeding the acute water quality standard for copper. Ecology recognized that the  
5 concentration of the metal in a stormwater discharge is dispersed to some degree in the receiving  
6 water. Ecology did not consider use of a dilution factor as a method to evaluate probability of  
7 exceeding water quality standards to be the same as granting a “mixing zone,” which is allowed  
8 by regulation under limited circumstances. Rather, the agency concluded that the copper  
9 benchmark level of the final ISGP would be protective of water quality in the vast majority of  
10 conditions. Where a modest amount of dilution is available in the receiving water, the agency  
11 further determined that, in order to meet a benchmark of 14µg/L (Western WA) and 32 µg/L  
12 (Eastern WA), a facility will need to be implementing all necessary and relevant BMPs, and  
13 AKART. *Killelea Testimony; Exs. B-20, P-12, E-6.*

14 [27]

15 EPA supported Ecology’s selection of copper benchmarks at 14 µg/L and 32 µg/L for  
16 western and eastern Washington, respectively. EPA noted that the benchmarks were  
17 significantly lower than the 63.6 µg/L of the previous permit and more representative of a level  
18 that would ensure attainment of the copper water quality standard and avoid or minimize adverse  
19 effects to aquatic species. While EPA’s own MSGP includes a lower copper benchmark level  
20 (5.6 µg/L for Western Washington freshwaters), EPA concluded that the ISGP contained “more  
21 robust non-numeric effluent limitations” such as specific corrective action steps and vacuum  
sweeping, which provided a similar level of protection to the MSGP. *Ex. P-20; Killelea*

1 *Testimony.* On the other hand, the National Marine Fisheries Service (NMFS) was more critical  
2 of these benchmark levels, and concluded in comments on the draft permit that benchmarks  
3 based on a dilution factor of 5, and a 10% risk for exceeding the applicable water quality  
4 standard for each metal, is not an approach that provides adequate protection for listed salmon.  
5 NMFS did not believe more than minor detrimental effects to listed salmon and steelhead would  
6 be avoided under the draft terms of the ISGP. *Ex. P-21.*

7 [28]

8 Both Boeing and Copper Groups criticize the copper benchmarks as unreasonably  
9 stringent. They contend the benchmark is overprotective, and that Ecology failed to use best  
10 available science to calculate appropriate values. Copper Groups opines that Ecology should  
11 have employed a water effects ratio (WER) or biotic ligand modeling (BLM), two procedures  
12 that could take into account chemical and physical factors that mitigate the toxicity of copper to  
13 aquatic organisms. Copper Groups asserts that the Herrera report provides an insufficient basis  
14 to support the technical validity of the copper benchmarks, and that using only water hardness as  
15 a modifying factor for the toxicity of copper is now an outdated approach. Copper Groups,  
16 through their expert, Dr. Meyer, advances use of the BLM as a method to account for the ways in  
17 which pH, alkalinity, hardness, and dissolved organic carbon modify the toxicity of metals to  
18 fish and other aquatic organisms. Dr. Meyer opines that given Ecology's use of a dilution factor  
19 of 5, the ISGP's authorized instream concentrations of copper are even lower than expressed in  
20 the permit's effluent limitation, ensuring they are protective, or over-protective, of salmonid fish.  
21 *Ex. C-11; Meyer Testimony.* Dr. Meyer and PSA's expert, Dr. Horner, disagree on many

elements of this issue, with Dr. Horner criticizing Ecology's use of a dilution factor, allowance

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1 of a 10% risk of exceedance factor, on the basis that they allow benchmarks that will result in  
2 harm to salmonid fish. Dr. Horner agrees that dissolved organic carbon, a key factor in the biotic  
3 ligand model, tends to ameliorate the negative effects of copper, but states that it is generally is  
4 not in sufficient supply in Washington's water to protect fish. *Horner Testimony.*

5 [29]

6 EPA recently modified its water quality criteria to be based on a biotic ligand model,  
7 rather than water hardness based criteria, which is the current basis of Washington's water  
8 quality standard for copper. Although EPA has taken this step, the new BLM-based copper  
9 criteria have not been adopted by any of the states in which migration and spawning of Pacific  
10 salmonids are a major concern (or any other states), nor has it been used to develop NPDES  
11 permit conditions to date. *Ex. C-7; Meyer Testimony.*

12 [30]

13 Ecology has previously used a WER to account for the mitigating effects of receiving  
14 water on the toxicity of metals in limited circumstances, including in at least one individual  
15 permit, and in one general permit. Ecology used a modified form of a WER in development of  
16 the last iteration of the Boatyard General Permit in 2005, but rejected a similar use in the  
17 development of the ISGP for several reasons. First, the water quality standards state that a WER  
18 is to be applied on a site-specific basis. The ISGP represents a much more diverse set of  
19 discharges and receiving water conditions than were present in the somewhat more limited  
20 situation of western Washington boatyard-specific discharges. More importantly, since  
21 Ecology's use of a WER in the Boatyard General Permit, EPA has informed Ecology that use of

1 a particular body of water. EPA has informed Ecology that such a change requires EPA  
2 approval and a rule revision process by Ecology, a costly and lengthy process. The last revision  
3 of the state water quality standards, with attendant EPA review and approval, took ten years.  
4 This has effectively taken use of the site specific WER off the table as a tool to adjust water  
5 quality criteria, at least until such time as EPA modifies its stance. Rather than attempt to utilize  
6 a WER in the modified manner it has used it in other settings, Ecology chose instead to take into  
7 account receiving water characteristics through use of the Monte Carlo simulation, which  
8 factored in hardness, a dilution factor, and a translator value to facilitate a comparison of  
9 dissolved fractions of metals to total recoverable metals in the discharge versus receiving waters.

10 *Gildersleeve Testimony, Killelea Testimony.*

11 [31]

12 The conflicting expert opinions and evidence on the proper approach to establishing a  
13 copper benchmark, and what the proper value for a benchmark should be, demonstrate the  
14 difficulty of arriving at an adequately protective benchmark that is also achievable by industry  
15 and moves industry towards compliance with the water quality standards. While Boeing and the  
16 Copper Groups experts disagree with the methodology for arriving at the copper benchmark,  
17 they agreed the benchmark is sufficiently protective, if not overly protective, of salmon and  
18 trout, disagreeing with the opinions of PSA's expert. *Ex. C-10; Meyer Testimony, Paulsen*  
19 *Testimony.* PSA's expert criticizes the benchmark as being far higher than that set out in the  
20 MSGP, but disregards EPA's own analysis of how the benchmark works in relation to other  
21 demanding permit terms. *Horner Testimony.*

1 [32]

2 The Board was presented with little evidence supporting a challenge to the zinc  
3 benchmark of the ISGP. The zinc benchmark of the ISGP is set at 117µg/L and is unchanged  
4 from the prior permit. The Herrera report analyzed zinc in the same manner as copper, and  
5 presented Ecology with three risk curves based on dilution factors of 1, 5, and 10. If Ecology  
6 had applied the same standard that it applied to copper (dilution factor of 5, and a 10% risk  
7 threshold for exceeding the applicable water quality standard), the zinc benchmark would have  
8 been higher, and the permit could have been challenged for backsliding on this effluent  
9 limitation. *Lenth Testimony, Killelea Testimony; Ex. B-21.*

10 2. *Timber Product Industry, Paper and Allied Products Benchmarks – COD and TSS*

11 [33]

12 The 2010 ISGP benchmark for the timber product industry and paper and allied products  
13 industry differs from the benchmark in the prior permit. The last permit had a benchmark for  
14 BOD at 30 mg/l, and no benchmark for Total Suspended Solids (TSS). The current ISGP, with  
15 benchmarks of COD at 120mg/l and TSS at 100 mg/l, is consistent with EPA's MSGP (in the  
16 case of TSS), and represents a more complete and accurate measure of oxygen demanding  
17 substances in the water (in the case of COD). The change to the new benchmark was responsive  
18 to public and industry comment, and took into account the limitations of a sampling regime  
19 based on BOD, which can be interfered with by toxic materials, and was developed more for use  
20 in the sampling of sewage wastewater, not stormwater. The COD benchmark value is four times  
21 higher than the previous BOD benchmark. To establish this 4:1 ratio, Ecology relied on

1 based on a North Carolina study that established a 4:1 equivalency ratio (COD to BOD).  
2 Ecology's permit writer, Jeff Killelea also looked at other data that evaluated the relationship of  
3 BOD to COD in stormwater, including stormwater from industrial land uses, which showed even  
4 greater ratios of COD to BOD, leading him to conclude that although higher in number (100  
5 mg/l), the COD benchmark may be more protective of water quality than the previous lower  
6 BOD limit. *Killelea Testimony.*

7 [34]

8 PSA contends that the benchmark of 120 mg/L COD is less demanding than the 30 mg/l  
9 BOD of the previous permit, and therefore represents backsliding in permit terms. PSA states  
10 that it is widely held that the relationship between BOD and COD is highly variable and that a  
11 reliable conversion can only be obtained through side-by-side measurements of the two variables  
12 over time. While not objecting to use of COD as a replacement to a BOD benchmark, PSA  
13 asserts the benchmark value must rest on a stronger analytical foundation, and that there should  
14 be parallel analyses of both BOD and COD to determine if a reliable conversion can be  
15 developed to translate from one measure to the other under conditions in Washington waters.  
16 *Horner Testimony.*

17 [35]

18 Weyerhaeuser, a permittee specifically affected by the COD and TSS benchmarks,  
19 considers the new combination of benchmarks to be more demanding than the previous permit,  
20 and states there will be no reduction of effort due to the change to a COD benchmark.  
21 Weyerhaeuser also agrees that the relationship between BOD and COD is variable, but provided  
convincing evidence from literature reviews, regulatory discussion, and specific sampling results

1 demonstrating that COD is always the higher of the two values, usually materially higher. The  
2 Weyerhaeuser sampling results demonstrate that a 4:1 ratio, BOD to COD, is well-founded, if  
3 not conservative. *Exs. W-1, W-2, W-3A, W-3B, W-3C; Johnson Testimony.*

### 4 *3. Oil/visible sheen benchmark*

5 The prior version of the ISGP had a benchmark of 15 mg/l for oil and grease. The  
6 current version of the ISGP changed to a benchmark of “no visible oil sheen,” applicable to all  
7 facilities. *Condition S5.A. (Table 2).* Ecology also set an additional related benchmark for  
8 specific, higher risk industries for a Total Petroleum Hydrocarbons (TPH). *Condition S5.A.*  
9 *(Table 3).* Ecology made this decision based on a consultant report that concluded only a low  
10 level of industrial facilities exceeded the prior benchmark, and because the changed standard  
11 could provide more instantaneous results to a facility, and therefore, more immediate corrective  
12 action. Ecology’s decision was also based on problems encountered by permittees in obtaining  
13 grab samples with representative amounts of oil/grease for reliable lab analysis. *Killelea*  
14 *Testimony.* PSA’s testimony asserts that the switch to a “visible oil sheen” benchmark is a  
15 weakening of the permit, because it accounts for only floating oil, not dissolved, solidified, or  
16 emulsified petroleum fractions in the water, which do not show as an oil sheen. PSA states that  
17 observing stormwater discharges for oil sheen will likely be ineffective, because there is no  
18 requirement to observe receiving waters, and the turbulence associated with stormwater runoff  
19 will not lend itself to visual detection of an oil sheen. Other circumstances, such as evaporation,  
20 may also render this an unreliable benchmark standard, according to PSA. *Horner Testimony.*  
21 Ecology rejects these criticisms as improbable, and has provided guidance on how to sample for

this modified parameter. Ecology states that the addition of TPH as a parameter for industries of

1 particular concern for petroleum discharges is an improvement over the prior permit. *Ex. P-9;*  
2 *Killelea Testimony.*

3 D. Numeric Effluent Limitations for Discharges to 303(d)-listed Water Bodies

4 1. *Total Suspended Solids (TSS)*

5 [36]

6 Permittees who discharge to water bodies 303(d)-listed for any *sediment* quality  
7 parameter are required to sample the discharge for TSS. *Condition S6. C. (Table 5).* The TSS  
8 effluent limit is set at 30mg/L for both fresh and marine water. Boeing contends that the TSS  
9 effluent limitation is not based on sound science, and that a site-specific evaluation is needed to  
10 determine if any given industrial facility discharge will cause or contribute to an exceedance of  
11 sediment management standards. Boeing states that the mixing behavior and sediment  
12 deposition patterns within receiving waters are complex and the concentrations of pollutants on  
13 sediment particles varies widely. Boeing also contends that TSS is not correlated with other  
14 pollutant concentrations, and cannot serve as a surrogate for those pollutants. For these reasons,  
15 Boeing asks the Board to conclude that Ecology could not appropriately derive a limit for TSS  
16 and that the ISGP should not contain a TSS effluent limitation. *Paulsen Testimony.*

17 [37]

18 Ecology included the TSS limitation in the ISGP because NPDES permitted discharges  
19 result in recontamination and exacerbation of problems at sites being addressed, and remediated,  
20 under Ecology's Toxics Cleanup Program. Ecology staff in that program concluded that both  
21 municipal and industrial stormwater discharges have contributed to exceedances of sediment  
management standards and impacts to sediment quality at various sites, including several

1 Superfund clean-up sites. The Toxics Cleanup Program offered ISGP permit writers several  
2 options to address potential recontamination of aquatic sediment sites by industrial discharges,  
3 including options that would require monitoring of effluents for a variety of pollutants that  
4 contribute to violations of sediment management standards (such as PCBs). The ISGP permit  
5 writing team rejected other options as unreasonable, as such options involved substantial costs  
6 for permittees to monitor effluent, and a substantial burden on Ecology to evaluate data collected  
7 by permittees. The option that ultimately became the effluent limitation of the permit assumed  
8 that compliance with a 30mg/L TSS parameter would be sufficient to maintain compliance with  
9 sediment management standards, so long as other operational source control BMPs, such as  
10 sweeping and catch basin cleaning, were aggressively implemented at facilities. Implementation  
11 of such BMPs is expected to capture particulates that attach to sediments (such as PCBs,  
12 pesticides, phthalates), and protect against contamination and recontamination of sediments in  
13 the receiving water. The Toxics Cleanup Program did not agree that the effluent limitation of  
14 30mg/L was adequate to ensure compliance with the sediment management standards. *Ex. B-89;*  
15 *Killelea Testimony.*

16 2. *Fecal Coliform*

17 [38]

18 The presence of fecal coliform bacteria in state waters is one of the primary water quality  
19 problems that has led to listing some water bodies on the 303(d) list as impaired (along with  
20 impairment due to temperature). *Ex. P-26.* The ISGP sets a numeric effluent limitation for  
21 discharges to water bodies 303(d)-listed for fecal coliform bacteria at the water recreation  
bacteria criteria (WAC 173-201A) applicable to the receiving water body. *Condition S6.C.,*

1 *Table 5.* Boeing criticizes this limitation as unnecessary, asserting that it is too stringent, and  
2 that fecal coliform is unlikely to be present in runoff from industrial facilities. *Paulsen*  
3 *Testimony.* While Ecology recognized that fecal coliform is generally associated with nonpoint  
4 source pollution or diffuse sources, the agency considered the permit effluent limitation to be an  
5 easily applied standard. *Ex. P-26; Killelea Testimony.*

6 *3. Omission of Specific Numeric Effluent Limitations to Water Bodies Impaired for*  
7 *Dissolved Oxygen, Temperature, and Fish Tissue/Bioassessment.*

8 [39]

9 At the time of the development of the 2010 ISGP, approximately 172 facilities, out of the  
10 nearly 1200 regulated by the permit, discharged to a 303(d)-listed water body. According to  
11 Ecology's data, most of those facilities discharged to water bodies impaired due to high  
12 temperature, high bacteria, and low dissolved oxygen. *Ex. P-26.* In developing the numeric  
13 effluent limitations for discharges to 303(d)-listed water bodies (set out at Condition S6.),  
14 Ecology applied a qualifying factor, and established effluent limitations only if the pollutants  
15 causing the impairment reasonably could be expected to be a component of stormwater  
16 discharges associated with industrial activity. *Fact Sheet, pp. 49-50.* This assumption resulted in  
17 the exclusion of dissolved oxygen (DO), temperature, and impairment due to contaminated fish  
18 tissue or bioassessment from the numeric effluent limitations of the ISGP. Ecology's conclusion  
19 on these three parameters also rested on the difficulty in deriving an effluent limitation that could  
20 be tied directly back to industrial dischargers, although the Fact Sheet for the ISGP did not  
21 express the conclusion in such terms. *Moore Testimony.* In December 2008 Ecology prepared a

1 for discharges to 303(d)-listed water bodies, a requirement of state law. Although the report  
2 explored several options, Ecology never submitted the report to the Legislature. In that  
3 document, the agency considered several options for establishing water-quality based numeric  
4 effluent limits for discharges to 303(d)-listed waters, one using regional or statewide  
5 assumptions of the discharge and receiving water characteristics, the second using site specific  
6 information to derive limits. Ultimately, Ecology decided to not develop effluent limitations for  
7 DO, temperature and impairment due to contaminated fish tissue/bioassessment, and, instead,  
8 applied numeric limits only to facilities discharging to impaired water bodies that were listed due  
9 to pollutants that are typically present in industrial stormwater discharges at concentrations that  
10 could cause further impairment. *Ex. P-26; Killelea Testimony, Moore Testimony.*

11 [40]

12 In the prior version of the ISGP, approximately 80 facilities were subject to a benchmark  
13 for dissolved oxygen discharges to impaired water bodies. *Exs. P-5, P-25, P-27, P-30.* The  
14 benchmark was set at the water quality criteria for DO, which is expressed in terms of a relative  
15 standard that takes into account receiving water concentrations, uses of the water body at the  
16 point of discharge, the frequency/persistence of the measurements over time, and whether  
17 background levels of DO are due to natural versus human-caused conditions. *WAC 173-201A.*  
18 Yet the permit only required sampling of the industrial stormwater discharge at the point of  
19 discharge. *Ex. P-5.* Discharge sampling results could not be readily analyzed in the context of  
20 the other variables contained in the DO water quality criteria, and therefore provided no  
21 meaningful information about an industrial stormwater discharge's potential contribution to any  
violations of dissolved oxygen standards. *Moore Testimony.* The current ISGP omits a similar

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1 benchmark for that group of industrial dischargers, as well as omitting any numeric effluent  
2 limitation for facilities that discharge to water bodies impaired for dissolved oxygen. Some of  
3 the 80 or so facilities that had been subject to a dissolved oxygen benchmark in the old permit  
4 are now subject to a new requirement to monitor against the COD and TSS benchmarks. For  
5 example, Weyerhaeuser had facilities that were previously required to monitor and report for  
6 dissolved oxygen when discharging to an impaired water body (e.g. Willapa River), but no  
7 longer has such a requirement. The facility does have an applicable COD and TSS benchmark,  
8 however. *Ex. W-3A; Johnson Testimony.*

9 [41]

10 PSA argues that Ecology could and should have derived an effluent limitation for DO,  
11 temperature, and contaminated fish tissue impairment. PSA asserts that industrial discharges,  
12 which contain substances which have a high oxygen demand, will negatively affect dissolved  
13 oxygen levels in impaired waters. PSA also asserts that the lack of a DO effluent limitation for  
14 the 80 facilities that used to have it represents impermissible backsliding. *Horner Testimony.*

15 [42]

16 *Dissolved Oxygen:* Ecology did not set a numeric effluent limitation for water bodies  
17 303(d)-listed due to low dissolved oxygen primarily because low DO is a seasonal (summer)  
18 impairment problem, while stormwater discharges in Washington commonly occur from October  
19 through April. Also, industrial stormwater discharges do not typically involve low levels of DO  
20 in the discharge itself, but rather are more likely to contain pollutants that will affect DO levels  
21 in the receiving water at some later point. Low DO level in impaired water bodies is typically

attributable to heavy loading of nutrients such as nitrogen or phosphorus that cause excessive

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1 algae and plant growth, the decay of which depletes oxygen levels in the summer. Such low DO  
2 levels are also attributable to the presence of other wastewater or substances with a high  
3 biochemical oxygen demand (BOD). However, Ecology considers these kinds of pollutants to  
4 have a “far field” effect, meaning the demand for oxygen in the water does not occur close in  
5 time or physically close to where the effluent or runoff water is discharged, but further  
6 downstream and on a delayed timeframe. Thus, Ecology concluded that these temporal and  
7 spatial variables make it exceedingly difficult to correlate a particular stormwater discharge from  
8 an industrial facility to a low DO problem in a water body. Ecology concluded that intensive  
9 modeling would be necessary to make the correlation to support a connection between particular  
10 types of stormwater discharges and low DO in an impaired segment of a water body, distant  
11 from a discharge point. It was not practicable to do so, nor a cost effective effort given  
12 Ecology’s determination that industrial stormwater discharges are not likely to be a significant  
13 contributor to low DO in most instances. For these same reasons, Ecology did not impose a DO  
14 limit on the 80 or so facilities that previously had been subject to such a benchmark. *Moore*  
15 *Testimony; Fact Sheet, pp. 49-51.*

16 [43]

17 *Temperature:* Setting a numeric effluent limitation for discharges to water bodies  
18 impaired for temperature presented Ecology similar challenges to that of dissolved oxygen.  
19 Ecology concluded that temperature is a seasonal water quality problem, and that stormwater  
20 discharges do not typically occur during the late summer months when temperature impaired  
21 water bodies are warmer and susceptible to thermal loading (discharge of heated water). Again,

1 the agency concluded it could not effectively derive a meaningful effluent limitation for  
2 temperature.

3 [44]

4 *Impairment due to Contaminated Fish Tissue:* Setting a numeric effluent limitation for  
5 discharges to water bodies impaired due to contaminated fish tissue, such as PCBs, mercury,  
6 DDT, or bioassessment (surveys of benthic invertebrate communities) presented a similar  
7 challenge to that of dissolved oxygen and temperature. Ecology concluded that it would be  
8 extremely difficult to identify a direct relationship or any correlation between stormwater  
9 discharges from an industrial facility and the contamination present in a fish or invertebrate  
10 community, sometimes far removed from that area. Again, Ecology concluded that it could not  
11 derive a science-based, defensible number to serve as a numeric effluent limitation for discharges  
12 to water bodies impaired for this parameter. *Moore Testimony.*

13 4. TMDLs

14 [45]

15 The ISGP requires Permittees to comply with applicable TMDL (total maximum daily  
16 load) determinations, which are essentially water clean-up plans that limit the amount of a  
17 particular pollutant that various contributing sources may discharge into the impaired water  
18 body. Where Ecology has established a TMDL wasteload allocation and sampling requirements  
19 for a permittee's discharge, the permittee is required to comply with "all requirements of the  
20 TMDL as listed in Appendix 5" to the permit. *Condition S6.D.2-7.* However, Appendix 5 states  
21 the Ecology has performed a review of TMDL documents and determined that "no facilities  
currently covered under the ISGP discharge to a water body with a TMDL wasteload allocation

1 for stormwater associated with industrial activity.” Ecology then concludes that no facilities  
2 covered by the ISGP are subject to additional sampling or effluent limitations related to TMDLs.  
3 *Ex. B-1A (Appendix 5 to ISGP).* Ecology testified that industrial facilities typically have not  
4 been given part of the wasteload allocation in the TMDL process because such facilities are  
5 generally a de minimis source of the pollutant of concern compared to the larger watershed, and  
6 the related difficulty of providing a particular discharge limitation for a specific industrial  
7 permittee. So, while the permit requires compliance with applicable TMDL determinations,  
8 there are none, at least at this time. *Killelea Testimony, Moore Testimony.*

9 [46]

10 PSA criticizes Ecology’s conclusion that additional sampling and monitoring is not  
11 required because of the lack of connection between ISGP permittees and the waste load  
12 allocation in an impaired water body that is subject to a TMDL. PSA asserts that while there  
13 may be a recognition that stormwater discharges are of concern to the TMDL, without targeted  
14 sampling and monitoring to better define the stormwater contribution to the problem, it will  
15 remain difficult to develop a strategy to begin addressing it. Characterizing this as a “great flaw  
16 in Ecology’s management of the state’s water resources,” PSA asks that the Board direct that the  
17 permit be amended to provide for setting waste load allocations tied to industrial stormwater  
18 discharges, or, at a minimum, require sampling to determine industrial stormwater contributions  
19 for the problem and/or if TMDLs are being met. *Horner Testimony.*

1 E. Compliance with Antidegradation Requirements

2 [47]

3 Discharges to surface waters associated with industrial activities under the ISGP are  
4 expected to degrade water quality, even if such discharges are in compliance with water quality  
5 standards. For this reason, there has been no dispute that the General Permit must comply with  
6 both water pollution control statutes and implementing regulations that prohibit degradation of  
7 state waters. *See* RCW 90.54.020(3); WAC 173-201A, Part III. When Ecology issued the  
8 General Permit, the agency had a choice to prepare either a “Tier II antidegradation analysis” for  
9 any new or expanded actions authorized under the ISGP, or, in the alternative, rely on an  
10 adaptive process authorized in the rules. *See* WAC 173-201A-320 (1)-(6). Ecology relied on the  
11 alternative, adaptive process in order to comply with the antidegradation rule. The question of  
12 whether this alternative process was adequate to comply with antidegradation requirements was  
13 put before the Board by PSA on summary judgment and a related request for a stay (Legal Issue  
14 No. 12). Although the Board denied the summary judgment motion, it concluded that Ecology  
15 had issued the ISGP without an alternative, adaptive process in place to “select, develop, adopt,  
16 and refine control practices for protecting water quality” as required by the antidegradation rule.  
17 WAC 173-201A-320(6)(iii). The Board issued a partial stay prohibiting Ecology from granting  
18 coverage under the ISGP for new or expanded actions until there was compliance with  
19 antidegradation requirements. This decision rested in part on the fact that Ecology had relied on  
20 the discontinued Guidance for Evaluating Emerging Stormwater Treatment Technologies,  
21 Technology Assessment Protocol-Ecology (TAPE) to satisfy Ecology’s obligation under the  
antidegradation rule. The primary purpose of TAPE is to establish a testing protocol and process

1 for evaluating and reporting on the performance and appropriate uses of emerging stormwater  
2 treatment technologies. *Order Granting Partial Stay and Denying Summary Judgment (Legal*  
3 *Issue No. 12), July 30, 2010.*

4 [48]

5 Since issuance of the Stay by the Board in July 2010, the discontinued TAPE process has  
6 resumed through a Technical Resource Center managed by Washington State University and the  
7 City of Puyallup, with Ecology involvement. The protocol requires vendors or permittees to  
8 bring forward BMPs, typically a treatment BMP, and demonstrate that the new BMP is  
9 equivalent to those of the Stormwater Management Manuals issued by Ecology. A Board of  
10 Reviewers is in place to consider new ideas or technology. As these are approved, Ecology is  
11 poised to add the approved BMPs to the Stormwater Management Manuals (SWMMs) as it  
12 updates the Manuals. The next such update will occur in the next one to two years. Ecology  
13 does not, however, solicit or force reviews through the TAPE process—it is a market-driven  
14 process for enhancing BMPs. PSA criticizes the lack of opportunity for public comment on  
15 Ecology’s antidegradation plan. Ecology contends that there is a public comment opportunity  
16 both through the granting of coverage to individual permittees, and as the ISGP itself is renewed  
17 on five year cycles. Ecology also contends that both the adaptive management scheme of the  
18 ISGP, and the permit renewal process offer the opportunity and incentive for new technology to  
19 emerge, consistent with antidegradation rules. *Ex. E-12; Killelea Testimony, Moore Testimony.*

1 F. Monitoring Requirements

2 [49]

3 As with the previous permit, the ISGP requires permittees to obtain representative  
4 samples on a quarterly basis, and from the first fall storm event of each year, at designated  
5 sampling locations. *Condition S4.* Instead of allowing permittees to identify and monitor the  
6 outfall with the highest concentration of pollutants, the new permit requires sampling of all  
7 discharge points (unless substantially identical under Condition S4.B.2.c.). Ecology chose this  
8 approach as technically superior in light of difficulties many permittees had in identifying  
9 appropriate sampling points under the previous permit, and because it is consistent with EPA's  
10 approach under the MSGP. Both the old permit and new permit allow averaging of samples on a  
11 quarterly basis. If a permittee samples any pollutant at a designated sampling point more  
12 frequently than required by the permit, the permittee must include the results in both the  
13 calculation and data submitted on the Discharge Monitoring Report (DMR). *Condition S9.D.;*  
14 *Killelea Testimony.*

15 [50]

16 The consistent attainment provisions of the 2010 ISGP were controversial, with wide  
17 disagreement among stakeholders as to the appropriate number of samples needed to adequately  
18 characterize site-specific stormwater discharges for purposes of suspending further sampling.  
19 Ecology ultimately also chose to allow a facility to have the benefit of suspension of sampling  
20 after four quarters of meeting benchmark values (consistent attainment), rather than the eight  
21 quarters required under the previous version of the ISGP. This decision was based in part on

Ecology's recognition that the new permit imposed a greatly reduced copper benchmark applied

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1 across industrial sectors covered by the permit, as compared to the much higher copper  
2 benchmark that only applied to certain permittees under the previous version of the permit. It  
3 was also based on a desire to counterbalance the fact that the 2010 permit requires all discharge  
4 points to be monitored (unless substantially similar), rather than just one outfall as the previous  
5 permit required. Ecology's decision to reduce the number of samples from eight to four was not  
6 based on any scientific or technical analysis, although one briefing paper the agency received  
7 pointed out that seven samples are adequate to characterize a discharge. Ecology concluded that  
8 lowering the number of quarters necessary to qualify for a suspension of sampling under the  
9 consistent attainment provision would motivate facilities to achieve compliance, and thereby  
10 reduce permittees' sampling costs. In response to permittees' concerns about having to re-  
11 accumulate quarters of attainment under the new permit, the 2010 ISGP allows a facility to count  
12 attainment of the benchmarks under the prior permit towards the four quarters needed under the  
13 current version of the permit. Suspension of sampling based on consistent attainment is not  
14 applicable to sampling at facilities subject to numeric effluent limitations based on 303(d)  
15 listings, as set forth in Condition S5.C. This was a change from the previous permit, which made  
16 the consistent attainment provisions available to all discharges, including those into 303(d)-listed  
17 waters. *Exs. P-10, P-21; Killelea Testimony; Condition S9.D.*

18 [51]

19 PSA asserts the permit's monitoring provisions are inadequate in several respects. PSA  
20 first states that the new consistent attainment provision (Condition S4.B.6.a.), which allows  
21 suspension of sampling after four quarters, would lead to a substantial percentage of facilities  
exceeding the benchmarks on an ongoing basis. PSA supports this position based on Dr.

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1 Horner’s review of monitoring data from the previous version of the ISGP, which indicates that  
2 many facilities that achieved a benchmark for four consecutive sampling events later exceeded  
3 the benchmark in future quarters. Dr. Horner’s own research also found that, for all parameters  
4 but one that he studied, discharges can be adequately characterized after about twelve samples.  
5 *Horner Testimony*. PSA also asserts that the permit provision that allows averaging of samples  
6 (Condition S4.B.6.c.) invites manipulation by permittees who may modify facility operations  
7 and/or sampling techniques to influence the average, a suggestion that one permittee,  
8 Weyerhaeuser, calls “inconceivable.” *Johnson Testimony*. Finally PSA’s expert opines that he  
9 would simply design “a thoroughly different program,” including a requirement to take a  
10 minimum number of annual samples (10-12), and require analysis for dissolved as well as total  
11 recoverable metals. *Horner Testimony*.

12 G. Adaptive Management/Corrective Action Requirements

13 [52]

14 Boeing and PSA both criticize the three-level adaptive management/corrective action  
15 provisions of the ISGP contained at Condition S8., for different reasons. Boeing asserts the  
16 provisions are vague and arbitrary, for failing to define when a permittee can “off-ramp” from an  
17 endless series of unsuccessful attempts to meet the benchmarks. Boeing asserts that the ISGP  
18 lacks adequate guidance or definition of the “waiver” provisions of the Level 2 and Level 3  
19 corrective action requirements, which offer the permittee a way to show they are not violating  
20 water quality standards even if they fail to meet benchmarks, among other purposes. Boeing  
21 argues that Ecology’s position that a permittee must take continued steps to meet the benchmark  
values of the permit, through implementation of the corrective action levels, effectively turns

1 those benchmarks into numeric effluent limitations, an arbitrary result. Taking issue with a  
2 portion of the Board’s ruling in one summary judgment order, Boeing asserts that facilities that  
3 have fully implemented BMPs described in Ecology’s SWMMs as part of a Level 3 corrective  
4 action should not be expected to do more, and are by law, presumed to be compliant with water  
5 quality standards.<sup>4</sup>

6 PSA criticizes the Condition S8. provisions as vague or too loosely written, asserting that  
7 there are extended timeframes for completion of corrective actions, legally invalid bases for  
8 waivers, and unacceptably vague terms, such as footnote 4 to Condition S8., that appears to  
9 make it impossible for a permittee to ever move from a Level 2 to a Level 3 corrective action.

10 PSA criticizes the calendar year system of the corrective action scheme, which allows a “reset”  
11 of benchmark exceedances for each year of the permit term. PSA complains that these  
12 provisions do not require the permittee to ever meet the benchmarks, or specify consequences if  
13 there is ongoing failure to do so after completion of prescribed corrective actions. PSA also  
14 contends the waiver provisions excuse compliance with water quality standards, and are  
15 therefore unlawful.

16 [53]

17 While the permit does not require mandatory compliance with benchmarks, it does  
18 require timely implementation of corrective actions with the goal of achieving benchmarks in  
19 future discharges. An exceedance of a benchmark value is not conclusive of a violation of water

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20 <sup>4</sup> Boeing filed a Motion for Reconsideration of the Board’s Order on Summary Judgment, dated January 5, 2011,  
21 (dismissing Legal Issues 31 and 62), and requested the opportunity to present factual evidence on questions related  
to the proper role of benchmarks and their relationship to the corrective action levels of the permit. The Board  
allowed Boeing to proceed to present testimony on this issue, but did not rule on the substance of the Motion. It is  
addressed in the Conclusions of Law that follow.

1 quality standards. However, sampling results that show exceedances of the benchmark values  
2 have the potential to violate, or may indicate a violation of, water quality standards. In  
3 reviewing the draft ISGP, EPA commented that despite significant concerns in the regulated  
4 community that the benchmarks of the ISGP were, in effect, numeric effluent limits, it was clear  
5 to EPA that Ecology was not intending benchmarks to be such numeric limits. EPA commented  
6 that like the MSGP, the benchmarks are intended to be used as an adaptive management  
7 mechanism, triggering revisions to the SWPPP, and adoption of additional control measures  
8 when benchmarks were exceeded. EPA notes that when a facility's monitoring data exceeds the  
9 benchmark levels, "the facility can be in full compliance with the permit as long as it follows all  
10 the corrective action and subsequent reporting steps." EPA recommended clarification in the  
11 permit on this point. *Ex. P-21*. Corrective actions responsive to such benchmark exceedances  
12 include revision of the SWPPP and implementation of additional BMPs, as prescribed at each  
13 corrective action level. In Ecology's professional judgment, if a facility properly implements the  
14 corrective actions required by the ISGP, it is likely to bring the facility's stormwater discharges  
15 to at or below the benchmark level. If the permittee does not timely and correctly implement the  
16 corrective action steps of the permit, or cannot meet the benchmark value after Level 3 corrective  
17 action steps, Ecology has the option of issuing an Administrative Order or an individual permit  
18 for discharges from a particular facility. The permittee can also request a waiver of the  
19 requirements under Level 2 and Level 3, as discussed further below. *Killelea Testimony*.

20 [54]

21 The three level corrective action provisions of Condition S8. of the ISGP set out a  
logical, increasingly stringent set of responses required of the permittee, should quarterly

1 samples reveal continued exceedances of applicable benchmark values. At a Level 1 corrective  
2 action, a permittee would be expected to make incremental improvement in the application of  
3 BMPs, such as more frequent vacuum sweeping, cleaning catch basins, or other housekeeping  
4 items. Similarly, the Level 2 response expects additional source control BMPs, while the Level  
5 3 requires installation of necessary treatment BMPS. At Level 3, the permittee must revise the  
6 SWPPP, but with input and review of a licensed professional, which is intended to improve the  
7 quality of the response at this level of corrective action (Condition S8.D.2.). The permit states  
8 that Level 2 corrective actions are triggered by an exceedance of an applicable benchmark value  
9 for a single parameter for any two quarters during a calendar year, and that Level 3 corrective  
10 actions are triggered by an exceedance for any three quarter during a calendar year. Ecology  
11 interprets this to mean that the permittee must look back for an entire calendar year in order to  
12 determine whether it is at a Level 2 or Level 3 corrective action. Ecology intended that there be  
13 alternating years for corrective action efforts by permittees in order to allow adequate time for  
14 corrective actions to achieve their intended effect on discharges. Ecology also expects that a  
15 permittee at a Level 3 corrective action will achieve compliance with the benchmark, and that  
16 Ecology will be working with the permittee to evaluate the adequacy of the corrective action  
17 response. In this iterative process between the agency and permittee, a decision can be made  
18 whether an individual permit, more refined BMPs, or an administrative order are necessary.

19 *Killelea Testimony.*

20 [55]

21 While the permit itself, as well as Ecology's explanation of the meaning of the terms,  
offers a rational escalation of corrective actions, the calendar year system of corrective actions is

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1 confusing, and offers extended timeframes for implementing corrective actions required by the  
2 permit. The permit provides no deadline to initiate a response to a benchmark exceedance and  
3 no time limit for the required revision of the SWPPP, so it is unclear when the implementation  
4 steps begin. Once the SWPPP is revised, a permittee with two quarters of exceedances in one  
5 calendar year, say 2011, has until September 2012 to implement the revised SWPPP. If the  
6 facility then has three or more exceedances of a benchmark in 2012, it becomes unclear whether  
7 the facility has until September of the next year, 2013, to wait to see the effectiveness of the  
8 Level 2 response, or whether it must move to Level 3 if it has three more exceedances in 2013.  
9 This result is possible due to the language of footnote 4 to the Level 2 Corrective Action  
10 provision, which states that “[F]acilities that continue to exceed benchmarks after a Level 2  
11 Corrective Action is triggered, but prior to the Level 2 Deadline, are not required to complete  
12 another Level 2 or 3 Corrective Action the following year for the same parameter.” This could  
13 be read to mean that a Level 3 corrective action cannot be triggered until three years after the  
14 initial exceedances triggering the Level 2 response, even if a permittee consistently continues to  
15 exceed the benchmarks every quarter thereafter.

16 [56]

17 The waiver provisions of the 2010 ISGP are a critical aspect of the benchmark and  
18 adaptive management scheme of the ISGP. The waiver provisions allow a permittee to show that  
19 they do not need to proceed with a required Level 2 or Level 3 response by demonstrating that  
20 the installation of either structural source control or treatment BMPs “is not feasible or not  
21 necessary to prevent discharges that may cause or contribute to a violation of a water quality  
standard.” *Condition S8.C.4. and D.4.* The previous permit included a similar waiver provision,

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1 with the primary difference being that it required a permittee to demonstrate that the corrective  
2 action was both infeasible *and* not necessary for compliance with water quality standards. *Ex. P-*  
3 5. While the terms “feasible” and “necessary” are not defined in the permit (nor were they  
4 defined in the previous permit), they have commonly understood meanings in this context.  
5 Among other items, the waiver provisions allow a permittee to develop information to show they  
6 are in compliance with water quality standards, even if they have had one or more discharges  
7 that exceeded a permit benchmark. Ecology testified that a facility could base a waiver request  
8 on a showing that a particular benchmark was too high for specific site conditions, that the  
9 discharges did not cause or contribute to a water quality standards violation, or that water quality  
10 standards are otherwise being met at the site. Such a showing may require a site-specific  
11 analysis or receiving water study before the facility can show there is no need to implement  
12 either structural source control or treatment BMPs to avoid discharges that may cause or  
13 contribute to violation of water quality standards. While economic feasibility will not be  
14 allowed as a basis for a waiver from permit corrective action requirements, Ecology has  
15 identified other feasibility considerations that may form the basis for a valid waiver request, such  
16 as when a permittee operates at a leased facility and the lessor will not allow necessary  
17 alterations at the site. Weyerhaeuser testified it understood the kind of data it would need to  
18 qualify for a waiver under this term of the ISGP, and that it did not need additional guidance.  
19 Boeing criticizes the waivers as vague and uncertain in application. *Killelea Testimony,*  
20 *Johnson Testimony, Oleson Testimony.*

1 [57]

2 Ecology has provided some informal guidance as to how to apply the provisions of  
3 Condition S8. that allows “waivers” from the requirements for installing or implementing  
4 structural source control or treatment BMPs under the Level 2 and Level 3 corrective action  
5 provisions of the permit. Ecology has not finalized guidance for its own staff in applying this  
6 provision, in part because the agency does not expect any request for waivers until later in the  
7 permit cycle, and has time to develop further guidance. *Killelea Testimony.*

8 [58]

9 PSA is an organization that works to protect and preserve Puget Sound. Columbia  
10 Riverkeeper has a similar mission to protect and restore the Columbia River and its tributaries.  
11 Olympians for Public Accountability work for accountability of public agencies involved in toxic  
12 cleanup issues in the Olympia area. The Executive Director of PSA is a member of each of these  
13 organizations, and makes personal use of the recreational opportunities in the Puget Sound  
14 region. *Wilke Testimony.* No party has contested the standing of PSA and the other  
15 organizations to bring this appeal. Copper Groups presented no testimony regarding the standing  
16 of its organizations to bring this appeal. However, the standing of Copper Groups was raised as  
17 an issue for the first time in closing arguments.

18 Any Conclusion of Law deemed a Finding of Fact is hereby adopted as such.

19 ///

20 ///

21 ///

1 CONCLUSIONS OF LAW

2 A. Standard of Review

3 [1]

4 The Board has jurisdiction over the subject matter and parties pursuant to RCW  
5 43.21B.110. The Board reviews the issues raised in an appeal *de novo*. WAC 371-08-485(1).  
6 The burden is on the appealing party as to each issue. WAC 371-08-485(3). Pursuant to WAC  
7 371-080-540(2), in those cases where the Board determines that Ecology has issued a permit  
8 “that is invalid in any respect,” the Board shall order the agency to reissue the permit, consistent  
9 with applicable statutes and guidelines. *PSA v. Ecology*, PCHB Nos. 07-022, 07-023 (February  
10 2, 2009) (Phase II Municipal Stormwater Permit Decision).

11 [2]

12 RCW 90.48.260 authorizes Ecology to implement and enforce all programs necessary to  
13 comply with the Clean Water Act (CWA), 33 U.S.C. § 1251 *et seq.* Such powers include the  
14 authority to administer the NPDES permit program (Ch. 173-220 WAC) and to establish water  
15 quality standards for both surface water and groundwater (Ch. 173-201A and Ch. 173-200  
16 WAC). The ISGP is required under both the CWA, and state law authority which requires a  
17 discharge permit for the disposal of any waste material into waters of the state by any type of  
18 commercial or industrial operation. 33 U.S.C. § 1342(p)(2)(B); RCW 90.48.160. The ISGP is  
19 also a State Waste Discharge Permit that operates to protect groundwater from stormwater  
20 discharged or infiltrated to groundwater under the authority of RCW Chapter 90.48. *Condition*  
21 *S.I.E.*

1 [3]

2 The Pollution Control Hearings Board must provide due deference to the specialized  
3 knowledge and expertise of Ecology on technical issues and judgments. *Port of Seattle v.*  
4 *Pollution Control Hearings Board*, 151 Wn.2d 568, 595, 90 P.3d 659 (2004). In the appeal of  
5 the ISGP, the Board concludes that some of the terms of the ISGP are particularly technically  
6 complex, and required Ecology to consider and weigh complex science, and often competing  
7 expert opinions and views on the best approach to manage industrial stormwater. Accordingly,  
8 we give deference to Ecology on several of the most technical aspects of the unique terms of the  
9 ISGP. Similarly, Ecology’s interpretations of water quality statutes and its own regulations are  
10 entitled to great weight, unless such interpretation conflicts with the statute’s plain language. In  
11 several instances, we give deference to Ecology’s interpretation of relevant regulations. *Port of*  
12 *Seattle* at 593-594.

13 [4]

14 Section 402(o)(1) of the CWA (33 U.S.C. § 1342(o)) states that an NPDES permit may  
15 not contain effluent limitations which are less stringent than the previous permit, with certain  
16 exceptions. In addition to challenging a number of permit terms as invalid or arbitrary, PSA has  
17 asserted that some conditions of the ISGP are less stringent, or represent impermissible  
18 backsliding in violation of the CWA. Ecology argued on summary judgment that if the Board  
19 were to find certain aspects of the ISGP less stringent, Ecology may still act to correct a  
20 “technical mistake” in the previous effluent limitation, under 33 U.S.C. § 1342(o)(2)(B)(ii). The  
21 Board addresses both the backsliding and other arguments about these permit terms in the  
following conclusions.

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1 B. Framework of the ISGP

2 [5]

3 Boeing and PSA have each presented evidence and argued that the basic framework of  
4 the ISGP with its reliance on a combination of various effluent limitations, including both  
5 benchmarks and numeric effluent limitations for certain discharges, is invalid or arbitrary and  
6 capricious. Each Appellant makes related and different arguments that the adaptive  
7 management/corrective action scheme that drives compliance with benchmarks and water quality  
8 standards is also flawed and should be corrected by the Board. The Board therefore first  
9 addresses conclusions related to the permit's overall framework, then addresses challenges to  
10 individual terms and conditions of the permit.

11 [6]

12 The CWA and state law require Ecology to implement a program of control for industrial  
13 stormwater discharges that meets applicable water quality standards. 33 U.S.C. § 1311, §  
14 1342(p)(3)(A); RCW 90.48.080. State surface water quality regulations also protect existing  
15 water quality and preserve designated beneficial uses of the surface waters, requiring discharge  
16 permits to be conditioned such that the discharge will not cause or contribute to a violation of  
17 established water quality standards. Ch. 173-201A WAC. The Board has consistently held in  
18 the context of other general permit appeals that NPDES permits must contain conditions to  
19 ensure that dischargers meet water quality standards. *Associated General Contractors v.*  
20 *Ecology*, PCHB Nos. 05-157, 158, 159 (2007), COL 4. To do this, general permits such as the  
21 ISGP currently establish a combination of narrative effluent limitations, benchmarks and  
numeric effluent limitations for various pollutant parameters. The permit establishes an adaptive

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1 management/corrective action scheme that is the method to drive ultimate, and required,  
2 compliance with water quality standards. The role of benchmarks in this scheme is once again at  
3 issue in this case. In the context of the Construction Stormwater General Permit, we interpreted  
4 RCW 90.48.555(8), which requires an enforceable adaptive management mechanism in both the  
5 industrial and construction stormwater general permits, as follows: “A benchmark is not a  
6 numeric effluent limitation, even if it is stated in numeric terms. Exceedances of the benchmark  
7 are not permit violations. Rather, the benchmark is a threshold or indicator value. When that  
8 threshold is reached, a permittee must implement a responsive protocol....” *Id.* at COL 22.

9 [7]

10 To meet the requirements of the CWA and state law, the ISGP contains both technology-  
11 based and water quality-based effluent limitations, which are two different kinds of restrictions  
12 on the quantity, rate, and concentration of pollutants that are discharged in the stormwater from  
13 industrial facilities. The Clean Water Act requires that stormwater discharges from existing  
14 industrial facilities meet technology-based effluent limitations that reflect the technological and  
15 economic capability of permittees to control pollutants in discharges. 33 U.S.C. § 1342(a). They  
16 are also based on State law that requires the use of AKART. RCW 90.48.010. NPDES permits,  
17 including the ISGP, may express these effluent limitations as either numeric or, if numeric limits  
18 are considered “infeasible,” non-numeric narrative standards, or as a combination of numeric and  
19 narrative effluent limitations. RCW 90.48.555(2); 40 C.F.R. § 122.44(k)(3). Because of the  
20 variable and intermittent nature of stormwater, both EPA and Ecology determined that it is not  
21 feasible to calculate numeric, technology-based effluent limitations for many of the discharges  
covered under the ISGP. Accordingly, Ecology included many non-numeric narrative

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1 limitations in the permit. These technology-based effluent limits are reflected in those conditions  
2 of the ISGP, for example, that require implementation of a SWPPP, and implementation of best  
3 management practices to prevent and control stormwater runoff. *Condition S3.; Fact Sheet, pp.*  
4 *38-42.*

5 [8]

6 RCW 90.48.555(1), and federal regulations at 40 CFR Part 122.44, require the ISGP  
7 include water quality-based effluent limitations if there is a reasonable potential to cause or  
8 contribute to an excursion of a state water quality standard. RCW 90.48.555(3) requires that  
9 Ecology condition the ISGP to require compliance with numeric effluent discharge limits where  
10 the department has determined that stormwater discharges have a reasonable potential to cause or  
11 contribute to violation of state water quality standards, and effluent limitations based on  
12 nonnumeric BMPs are not effective in achieving compliance with water quality standards. As  
13 we concluded in an earlier Order on Summary Judgment, Ecology made a determination that  
14 stormwater discharges from industrial facilities, on a general and ongoing basis, may cause, or  
15 have a reasonable potential to cause a violation of water quality standards for a variety of  
16 pollutant parameters. *Order on Summary Judgment, December 23, 2010; Killelea Testimony.*  
17 *Fact Sheet at 48.* We conclude that such a generalized “reasonable potential analysis” is  
18 appropriate in the context of a general permit, where, as here, there is significant background  
19 information about the nature of industrial and urban runoff, sufficient to inform Ecology’s  
20 conclusions in this regard (*see, e.g., Ex. B-35, the 2006 EnviroVision/Herrera Evaluation*). We  
21 also conclude that Ecology appropriately complied with these statutory and regulatory

requirements by establishing several permit provisions, which are stated in both numeric and

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1 narrative forms, as follows: numeric effluent limitations for discharges to 303(d)-listed water  
2 bodies at (Condition S6.C., Table 5); requirements for facilities to comply with TMDLs  
3 (Condition S6.D.); adaptive management response provisions, which require facilities that  
4 exceed numerically-stated benchmark values to implement escalating levels of source control  
5 and treatment BMPs (Conditions S5.A. and B., and S8.); prohibitions on discharges that violate  
6 listed water quality surface, groundwater, sediment standards, or human health-based criteria  
7 (Condition S10.); and finally, solid and liquid waste management provisions.(Condition S12.).

8 [9]

9 In addition to the requirements to develop effluent limitations in response to a reasonable  
10 potential analysis, RCW 90.58.555 (7) provides further, and specific direction to Ecology to  
11 require compliance with “appropriately derived numeric water quality-based effluent limitations  
12 for existing discharges to water bodies listed as impaired according to 33 U.S.C. Sec. 1313(d)  
13 (Sec. 303(d) of the federal clean water act, 33 U.S.C. Sec. 1251 et seq.)” The permit complies  
14 with this requirement by including numeric effluent limitations applicable to discharges to  
15 303(d)-listed waters for a number of different parameters, including, TSS, fecal coliform, and  
16 others that are not in dispute in this case. *Condition S6., Table 5.* Whether such limitations are  
17 “appropriately derived,” and whether additional numeric limitations should have been included,  
18 is addressed later in this opinion, the Board having ruled on summary judgment that there were  
19 questions of fact related to the specific limitations contained in Condition S6. *Order on*  
20 *Summary Judgment, December 23, 2010.*

1 [10]

2 RCW 90 48.555 (8) requires the ISGP to include “an enforceable adaptive management  
3 mechanism that includes appropriate monitoring, evaluation, and reporting.” At a minimum, the  
4 adaptive management mechanisms must include an indicator, such as *monitoring benchmarks*,  
5 monitoring, review and revisions to stormwater pollution prevention plans, documentation of  
6 remedial actions taken, and reporting to Ecology. RCW 90.48.555(8)(a)(i)-(v) (*emphasis*  
7 *added*). The adaptive management/corrective action scheme of the ISGP (Condition S8.) goes  
8 hand-in-hand with the benchmark provisions of the permit, and together they form a key  
9 narrative effluent limitation for the ISGP, requiring industrial facilities to take steps to ensure  
10 compliance with water quality standards.

11 [11]

12 In the remand of the 2005 Boatyard General Permit, the Board ordered that the permit be  
13 modified to require implementation of remedial actions required at the three corrective action  
14 levels set out in that permit. The Board stated that the permit must “explicitly require that  
15 permittees must continue implementing required remedial actions unless and until the  
16 benchmarks and other limits are achieved,” and further required the permit to address the  
17 contingency that implementation of all BMPs and corrective actions might fail to achieve the  
18 benchmarks. Ecology was directed to include provisions specifying that the agency may require  
19 individual, site-specific conditions, such as additional BMPs, numeric limits, or compliance  
20 schedules, or an individual NPDES permit. While the Board did not construe the benchmark as a  
21 numeric effluent limitation, or nonattainment of a benchmark as a permit violation, the Board  
nonetheless required Ecology to modify the permit to specify further actions Ecology would take

1 in response to continued failure of a permittee to achieve the benchmark. *PSA v. Northwest*  
2 *Marine Trade Association*, PCHB Nos. 05-150, 05-151, 06-034, 06-040, at pp. 65-66 January  
3 26, 2007.

4 [12]

5 We see no reason to depart from these decisions at this time. The Board concludes that  
6 the ISGP's combination of benchmarks that trigger an adaptive management response, narrative  
7 effluent limitations, and numeric effluent limitations for defined parameters applicable to  
8 discharges to 303(d)-listed waters, is a valid and lawful framework for regulating industrial  
9 stormwater discharges at this time. This framework correctly implements specific provisions of  
10 RCW 90.48.555, discussed above, and complies with the Clean Water Act, even if we find  
11 specific provisions invalid in some respect. Subject to the more detailed discussion below of  
12 specific benchmark, numeric limits, and other permit issues, the Board rejects PSA's assertion  
13 that the ISGP framework is inadequate and should be based on more extensive numeric effluent  
14 limitations. We also reject Boeing assertion that the permit framework should have more  
15 flexible benchmarks, or that it is premature to establish such benchmarks due to lack of adequate  
16 data.

17 C. Validity of Benchmarks

18 [13]

19 The Board concludes that none of the Appellants have met their burden to demonstrate  
20 that the copper and zinc benchmarks of the ISGP are invalid, arbitrary and capricious, or in  
21 violation of applicable law. The Board concludes that Ecology developed a rational method to  
reach a reasonable and achievable benchmark for copper. As the level of professional

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1 disagreement indicates, there is considerable room for debate about the appropriate benchmark  
2 level for copper, and the precise levels at which the benchmark will protect beneficial uses, or  
3 become overly burdensome or overly protective of receiving waters.

4 [14]

5 We conclude that the copper benchmark was set in consideration of both the effects on  
6 beneficial uses in the receiving water, and in particular, the effects on salmonid fish, as it should  
7 have been. At the same time, Ecology concluded that in order to meet the benchmarks of the  
8 permit, a facility would have to be implementing AKART. Ecology also applied the dilution  
9 factor of 5 in a manner distinct from methods used in some other permitting contexts, using it as  
10 a method to inform the agency as to the probability of violating water quality standards, should  
11 the benchmark for copper be set at varying levels. In this respect, Ecology used the dilution  
12 factor, not to justify artificially high benchmarks, but rather to assess the effectiveness of the  
13 benchmark value, from both the perspective of protection of beneficial uses and the ability of  
14 industrial facilities to meet the benchmark. We conclude that consideration of the effects of  
15 receiving water dilution and chemistry on the toxicity of discharges in the manner accomplished  
16 by the Herrera report is not equivalent to granting a mixing zone under WAC 173-201A-400. In  
17 this case, the dilution factor was not used to allow a violation of water quality standards in an  
18 area of the receiving water. Instead, the Herrera analysis recognized some dilution would occur  
19 in receiving water, and provided Ecology data to assess at what level a benchmark would be  
20 protective of beneficial uses in the vast majority of conditions. This is a valid and lawful  
21 approach.

1 [15]

2 We also conclude that Ecology was not required to use either the biotic ligand model  
3 (BLM), or a water effects ratio (WER) in setting the copper benchmark. Neither of these  
4 approaches is consistent with the current water quality standards of Washington, implemented at  
5 WAC 173-201A. While the BLM may be the approach of the future, particularly as a new basis  
6 to set the copper criteria in state water quality standards (as opposed to at the permit stage), it has  
7 yet to be adopted in Washington, or any other state, and state water quality regulations for copper  
8 remain hardness-based. Ecology correctly relied on existing water quality standard  
9 methodologies to formulate the copper benchmark, as did the Herrera analysis that provided the  
10 foundation for Ecology's decision on the copper benchmark.

11 [16]

12 It was neither an abuse of discretion nor arbitrary and capricious for Ecology to decline to  
13 apply a WER in the development of the copper benchmark. Not only is the use of a WER  
14 generally limited to site-specific application, EPA has put limits on Ecology's use of a WER to  
15 modify the water quality standards for particular water bodies or discharges. Ecology's  
16 interpretation of the water quality standards, including the limits placed thereon by EPA, is  
17 entitled to great weight, and we give deference to Ecology's interpretation of WAC 173-201A-  
18 240 (footnote dd) and how to apply it in the context of a general permit. The Board also  
19 distinguishes the facts and conclusions here from those before the Board in the appeal of the  
20 2005 Boatyard General Permit. *PSA v. Northwest Marine Trade Assc., supra*. In that case the  
21 Board held that the methodology used to establish the copper benchmark relied on several flawed  
and unfounded factors to establish a benchmark that was many times higher than the water

1 quality criteria for copper, and invalidated the copper benchmark. The Board concluded that  
2 although Ecology had not applied required prerequisites to the use of a WER, Appellant PSA had  
3 not presented adequate evidence that the WER values that Ecology had relied were not  
4 representative of western Washington waters. Since that time, EPA has put further limits on the  
5 use of the WER to adjust water quality criteria. Thus, while the Board's conclusion allowed a  
6 limited use of a WER in the Boatyard General Permit to account for the mitigation effects of  
7 receiving water quality on the toxicity of metals in stormwater discharges, the case does not  
8 stand for as broad a proposition as advanced by Copper Groups. We conclude that Ecology  
9 more correctly accounted for the effects of receiving water chemistry on copper through the  
10 analysis contained in the Herrera report.

11 [17]

12 The Board concludes that the new COD and TSS benchmarks for the timber and paper  
13 industry and paper and allied products industries are valid, and supported in relevant science and  
14 literature. There was little dispute that COD itself is the more accurate measure of oxygen  
15 demanding substances in the water, and even PSA's expert had no quarrel that COD was the  
16 preferable benchmark parameter, not BOD. We also conclude that the COD benchmark value  
17 (120 mg/l) is not less demanding than the lower BOD benchmark of the previous permit (30  
18 mg/l). Relevant studies and site specific sampling results demonstrate that a COD benchmark  
19 that is four times higher than the BOD benchmark offers equivalent protection to receiving  
20 waters. With the addition of a second benchmark for TSS (100 mg/l), we conclude that this  
21 industrial sector is subject to more stringent permit requirements with this iteration of the ISGP.

The ISGP does not represent backsliding in this respect, as argued by PSA.

1 [18]

2 The Board concludes that the new benchmark of “no visible oil sheen” is a valid  
3 benchmark, and does not represent backsliding from the prior permit’s numerically stated  
4 benchmark of 15mg/l for oil and grease. The Board is satisfied that Ecology has valid, well-  
5 based reasons to change to a benchmark based on “no visible sheen,” and has improved the  
6 permit over the last iteration by adding a second, related benchmark of for TPH for certain  
7 higher risk industries. *Condition S5.A. (Table 3).*

8 D. Numeric Effluent Limitations for Discharges to 303(d)-Listed Waters

9 [19]

10 RCW 90.48.555(7) addresses effluent limitations for existing discharges to water bodies  
11 listed as impaired under the CWA. It states as follows:

12 (7)(a) By November 1, 2009, the department shall modify or reissue the industrial storm  
13 water general permit *to require compliance with appropriately derived numeric water*  
14 *quality-based effluent limitations for existing discharges to water bodies listed as*  
*impaired* according to 33 U.S.C. Sec. 1313(d) (Sec. 303(d) of the federal clean water act,  
33 U.S.C. Sec. 1251 et seq.).

15 (b) The industrial storm water general permit must require permittees to comply  
16 with appropriately derived numeric water quality-based effluent limitations in the  
17 permit, as described in (a) of this subsection, by no later than six months after the  
effective date of the modified or reissued industrial storm water general permit.

18 On summary judgment, the Board concluded that RCW 90.48.555(7) clearly and  
19 unambiguously requires Ecology to include in the ISGP “appropriately derived” numeric water  
20 quality-based effluent limitations for discharges to 303(d)-listed water bodies. The Board noted  
21 that the statutory requirement of sub-section (7) embodies the assumption that impaired water  
bodies do not meet water quality standards, and that further discharges will continue to

1 contribute to such impairment. We held there were factual questions as to whether or not  
2 Ecology could appropriately derive such limitations with respect to several pollutants that are  
3 associated with impaired water bodies. Boeing and PSA challenge different aspects of the  
4 effluent limitations applicable to discharges to 303(d)-listed waters. Boeing asserts the fecal  
5 coliform bacteria limit and the TSS limit are invalid, for different reasons. PSA argues that  
6 Ecology violated RCW 90.48.555(7) by excluding effluent limitations for dissolved oxygen,  
7 temperature, and fish tissue/bioassay, as many water bodies are listed as impaired for these  
8 parameters.

9 [20]

10 The Board concludes that the TSS effluent limitation applicable to discharges to 303(d)-  
11 listed waters is valid and was appropriately derived under RCW 90.48.555(7). In arriving at this  
12 limitation, Ecology evaluated several options to address the likelihood that discharges from  
13 industrial sites lead to violation of sediment quality standards and recontamination of sites  
14 already being addressed under the Toxics Clean-up Program. The effluent standard selected, at  
15 30 mg/L is not an unreasonable standard, nor does it impose inordinately high costs on the  
16 regulated community, as did other options considered and rejected by Ecology. We give  
17 deference to Ecology's conclusion that TSS is a reasonable surrogate to regulate discharges to  
18 water bodies that are 303(d)-listed for sediment quality parameters, allowing an effective way to  
19 begin to control sediment contamination problems identified by Ecology.

20 [21]

21 Boeing has not met its burden to demonstrate that the fecal coliform bacteria effluent  
limitation for discharges to 303(d)-listed water bodies is invalid. Ecology developed this

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1 limitation because many segments of water bodies have been listed as impaired for fecal  
2 coliform. Because Ecology could “appropriately derive” an effluent limitation based on existing  
3 water quality criteria, and it is an easily applied standard, the numeric effluent limitation is  
4 required under RCW 90.48.555(7). Other than disagreeing with the need to monitor for this  
5 parameter, no persuasive evidence was offered to show that the fecal coliform effluent limitation  
6 could not be “appropriately derived” or was otherwise unsupportable.

7 [22]

8 The Board concludes that Ecology did not err in omitting numeric effluent limitations for  
9 discharges to water bodies impaired due to temperature, dissolved oxygen and fish tissue  
10 contamination or bioassessment. Ecology was unable to “appropriately derive” such limitations  
11 as called for in the statute because in each case, the agency could not reasonably correlate the  
12 discharge from an industrial facility with the impairment or water quality problem. Because of  
13 this, Ecology lacked a science-based method to define a fair or rational numeric effluent  
14 limitation with respect to each of these parameters. With respect to dissolved oxygen and  
15 temperature, Ecology could not come up with a defensible effluent limitation number because it  
16 is not the stormwater discharge itself causing the impairment in the water body. In the case of  
17 dissolved oxygen, it is the oxygen-demanding substances that cause the DO impairment, and  
18 setting dissolved oxygen effluent limitation fails to address the impairment problem. It was also  
19 reasonable for Ecology to conclude that it made little sense to set an effluent limitation for  
20 temperature, on the basis that it is a seasonal impairment problem, and again, a problem that  
21 could not be correlated with industrial stormwater discharges. Setting an effluent limitation  
under such circumstances would not be based in any supportable science. Ecology was also

1 unable to defensibly tie industrial stormwater discharges to pollutants that bioaccumulate in fish  
2 tissue, again supporting the decision to omit numeric limits for this parameter. In the face of  
3 this evidence, we conclude that Ecology met the requirements of RCW 90.48.555(7), as the  
4 agency could not, at this time, “appropriately derive” numeric water quality-based effluent  
5 limitations for these three types of industrial discharges to impaired water bodies.

6 [23]

7 As discussed above with respect to the omission of a DO effluent limitation, the Board  
8 also concludes that it was neither invalid, nor impermissible backsliding, for Ecology to not  
9 include a DO benchmark for the same 80 facilities that had such a benchmark in the previous  
10 permit. Some unspecified number of these same facilities will be subject to the new COD and  
11 TSS benchmarks. Elimination of the DO benchmark on the basis discussed in the findings of  
12 fact, that it is a nearly irrelevant measure of the actual problem in the water body, is a legitimate  
13 basis upon which to modify the ISGP on a going-forward basis. A permit is not made less  
14 stringent by elimination of a condition that provided no meaningful information about  
15 impairment or water quality in receiving waters.

16 [24]

17 The Board concludes that the manner in which Ecology addressed TMDLs in the permit  
18 is valid. At this point in time, no industrial facilities covered by the ISGP are subject to  
19 additional sampling or effluent limitations related to TMDLs, in large part because these  
20 facilities are viewed as a small, de minimis source of the pollution contributing to the impaired  
21 state of the water body and the need for a TMDL. As with temperature and DO, Ecology faces  
substantial difficulty in defining a particular pollutant discharge limitation for a specific

1 industrial discharge. PSA’s case on this issue is primarily one of a criticism of water resource  
2 policy approach by Ecology, and not something the Board believes can be addressed in the  
3 context of the challenge to a General Permit. Indeed, it would be inappropriate for the Board to  
4 direct Ecology to set a wasteload allocation in relation to a TMDL as part of a remedy in an  
5 appeal of a general permit, and we have no basis to do so.

6 E. Compliance with Antidegradation Requirements

7 [25]

8 As the Board discussed on summary judgment, the purposes of Washington’s  
9 Antidegradation Policy, as set forth in WAC 173-201A Part III, are several. First, the policy  
10 seeks to maintain and restore the highest possible quality of surface waters in the State. The  
11 policy also describes situations under which water quality may be lowered from its current  
12 condition. The policy applies to human activities that are likely to lower the water quality of  
13 surface water and ensures that such activities apply AKART. To achieve these ends, the policy  
14 applies three “tiers” of protection for surface waters. WAC 173-201A-300. Tier I applies water  
15 quality-based limitations to point source discharges. Tier II seeks to protect waters of higher  
16 quality than the water quality standards by requiring a more detailed analysis (the Tier II  
17 analysis) for any new or expanded actions that are expected to cause a measureable change in the  
18 quality of the water body. Tier III prevents the degradation of waters formally listed as  
19 “outstanding resource waters” and applies to all sources of pollution. At issue in this case is  
20 compliance with the Tier II analysis requirements.

The rule governing the Tier II analysis requirements allows an alternative method of compliance for general permits, where those permits have a formal adaptive process “to select, develop, adopt, and refine control practices for protecting water quality.” The adaptive process must ensure that information is developed and used expeditiously to revise permit or program requirements. Among other requirements, the plan under this section must be developed and documented in advance of permit or program approval. WAC 173-201A-320(6)(c)(i)-(iii). The relevant portion of the rule provides as follows:

c) The department recognizes that many water quality protection programs and their associated control technologies are in a continual state of improvement and development. As a result, information regarding the existence, effectiveness, or costs of control practices for reducing pollution and meeting the water quality standards may be incomplete. *In these instances, the antidegradation requirements of this section can be considered met for general permits and programs that have a formal process to select, develop, adopt, and refine control practices for protecting water quality and meeting the intent of this section.* This adaptive process must:

(i) Ensure that information is developed and used expeditiously to revise permit or program requirements;

(ii) Review and refine management and control programs in cycles not to exceed five years or the period of permit reissuance; and

(iii) Include a plan that describes how information will be obtained and used to ensure full compliance with this chapter. *The plan must be developed and documented in advance of permit or program approval under this section.*

WAC 173-201A-320(6) (*emphasis added*).

1 [27]

2 On summary judgment, the Board concluded that PSA had shown a likelihood of success  
3 on the merits on the question of whether Ecology had complied with antidegradation rules at the  
4 time of issuance of the ISGP. The Board reached this conclusion because at the time Ecology  
5 issued the ISGP, there was no adaptive process in place as required by the antidegradation rule.  
6 WAC 173-201A-320(6)(iii). The TAPE process, referred to in the permit's Fact Sheet as the  
7 basis for compliance, had been discontinued by Ecology. Although planning may have begun  
8 for a transition to a new TAPE process, the record before the Board on summary judgment  
9 indicated that it was not currently operational. The Board also expressed substantial concerns as  
10 to whether the TAPE process, even if it were in place, had results or outcomes that were "used  
11 expeditiously" to revise this, or future, iterations of the General Permit, as the rule requires. The  
12 Board concluded that Ecology had failed to meet its burden in response to PSA's motion. The  
13 Board entered a stay which prohibited Ecology from granting coverage under the ISGP for new  
14 or expanded actions until there was compliance with Tier II antidegradation requirements. The  
15 matter was set over for hearing, to allow Ecology to demonstrate it had come into compliance  
16 with the antidegradation rule.

17 [28]

18 At hearing Ecology contended that it had complied with the antidegradation rule, and the  
19 alternative process allowed for general permits, in three ways. First, Ecology has resumed the  
20 TAPE process, which encourages development of pilot or emerging technologies. Second, the  
21 adaptive management scheme of the ISGP allows assessment of existing and developing BMPs.

Third, Ecology regularly updates the agency's Stormwater Management Manual to capture these  
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1 new and developing BMPs, making them more widely available to the regulated community.  
2 Ecology also asserts that the public comment aspects of the antidegradation regulation have been  
3 met, not just by the initial opportunity to comment on the draft ISGP, which relied on TAPE and  
4 described the adaptive management permit scheme, but also as coverage is granted to any facility  
5 with a new or expanded operation.

6 [29]

7 After hearing on the merits, the Board concludes that Ecology has complied with the Tier  
8 II antidegradation requirements, and that the previously issued Stay should be dissolved. In  
9 2009, after discontinuance of the TAPE program, the Legislature directed Ecology to create a  
10 Stormwater Technical Resource Center to provide tools for stormwater management, as funding  
11 becomes available. RCW 90.48.545. Initial funding has allowed this effort to proceed through  
12 TAPE, and the process described in the original Fact Sheet and public notice has resumed after  
13 an initial delay. We also give deference to Ecology's interpretation of WAC 173-201A-320(6)  
14 and how it should be applied in the context of general permits. It is reasonable and valid for  
15 Ecology to conclude that this rule allows the adaptive management scheme of the permit,  
16 combined with regular updates of the SWMM which capture new and emerging technologies, to  
17 stand as the method to comply with antidegradation requirements in the general permit context.

18 F. Monitoring and Sampling Provisions

19 [30]

20 The Board concludes that the general sampling requirements of the ISGP are valid, both  
21 with respect to the amount of required sampling, and the provisions that allow averaging of such  
samples. The quarterly sampling regime now requires sampling of all discharge points, unless

1 they are substantially identical, an improvement over the approach of the last permit, which  
2 allowed the permittee to monitor the outfall with the highest concentration of pollutants, an  
3 uncertain endeavor when it comes to variable stormwater discharges. We also conclude that the  
4 sampling provision that allows permittees monitoring more than once per quarter to average all  
5 the monitoring results for each parameter to be valid. *Condition S4.B.6.c.* PSA's argument that  
6 this averaging provision will invite manipulation is not well-founded, because those permittees  
7 who take advantage of the sample averaging provision must provide Ecology the results of both  
8 the averaging calculation and documentation related to all samples taken. *Condition S9.D.*  
9 Moreover, should a given facility wish to ignore the requirements of the permit in favor of  
10 manipulation of sampling results, a speculative proposition at best, Ecology could take  
11 enforcement action. However, the remote possibility of such behavior on the part of a rogue  
12 facility does not render the permit's sampling scheme invalid.

13 [31]

14 We conclude the consistent attainment provision of Condition S4.B.6., which allows a  
15 permittee to suspend sampling after four consecutive quarters of sampling demonstrate a  
16 reported value equal to or less than the benchmark value is invalid, and appears to have been  
17 somewhat arbitrarily selected by Ecology. Although the consistent attainment provision is not  
18 applicable to sampling at facilities subject to numeric effluent limitations for discharges to  
19 303(d)-listed waters, the last permit required a full eight quarters of sampling of applicable  
20 parameters before a permittee could take advantage of this provision. Ecology's decision to  
21 reduce the number of quarters necessary to achieve consistent attainment is not based on any  
data, nor on an underlying assessment of how many compliant sampling periods are reasonably

1 predictive of future attainment of benchmarks. Ecology recognized this in the Fact Sheet for the  
2 draft permit (p. 70), concluding “four samples are not sufficient to adequately characterize the  
3 discharge from a facility,” while an internal briefing paper stated that seven samples are  
4 adequate. Some limited evidence before the Board suggests a relatively large percentage of  
5 facilities will again exceed benchmarks after a period of four quarters of attainment of  
6 benchmarks for particular pollutant parameters (*Horner Testimony*). Given the variable nature of  
7 stormwater, allowing a suspension of sampling for the remainder of a five year permit term  
8 based on only four quarters does not appear to be designed to achieve compliance with  
9 benchmarks, and may lead to violations of water quality standards. While the Board concludes  
10 that it is reasonable to “carry forward” quarters of attainment of benchmarks from the prior  
11 permit period and count those toward consistent attainment under the current permit, we  
12 conclude that at least seven quarters of meeting benchmark values should be expected prior to a  
13 suspension of sampling for the remainder of the permit term. Alternatively, the permit could  
14 allow a fewer number of quarters to serve as the basis for a determination of consistent  
15 attainment (such as four quarters), but require a resumption of sampling within a reasonable time  
16 frame within this permit term (two to three years appears reasonable, given the five year permit  
17 cycle). We leave it to Ecology’s discretion which of these two approaches will work best in the  
18 application of the ISGP. We remand the consistent attainment provision of S4B.6. to Ecology  
19 for amendment consistent with this opinion.



1 implement, become effective, and be evaluated, this timeframe is unreasonably long. We  
2 conclude that footnote 4 must be eliminated and that the permit must clarify when and how a  
3 permittee escalates from a Level 2 to a Level 3 when a Level 2 corrective action is already  
4 underway.

5 [33]

6 The Board concludes that the waiver provisions of Condition S8. are valid. Although  
7 Ecology has not yet issued guidance on how to apply this provision, the terms of the permit are  
8 commonly used words, capable of application by the regulated community. Ecology has  
9 testified that the term “feasibility” under the waiver provisions will not include “economic  
10 feasibility” to excuse a permittee’s compliance with the corrective action provisions due to the  
11 cost of structural or treatment BMPs. The weight of evidence before the Board demonstrates that  
12 waivers will be most useful where a permittee is able to demonstrate that its discharges do not  
13 cause or contribute to a violation of water quality standards, or that water quality standards are  
14 otherwise being met, even though the permittee does not meet a benchmark specified in the  
15 permit. Given the use of the terms, and their likely application, we find the waiver sections  
16 adequately clear and valid.

17 [34]

18 On summary judgment, the Board held that where a permittee continues to exceed  
19 benchmark values, it must install BMPs beyond those described in Ecology’s SWMMs. We  
20 noted that the ISGP requires site-specific, professionally engineered solutions to ongoing  
21 exceedances of benchmarks, at the Level 3 corrective action time. *Condition S8.D.2.* BMPs  
“demonstrably equivalent” to those of the SWMM may also be required, and emerging

FINDINGS OF FACT, CONCLUSIONS

OF LAW, AND ORDER

PCHB Nos. 09-135 through 09-141 (*consolidated*)

1 technologies, not yet in the SWMM, may also be available to a facility at a Level 3 corrective  
2 action. We stated that the requirement to implement these additional BMPs would be triggered  
3 when a permittee was at a Level 3 corrective action, “presumably based on data or other site-  
4 specific information that demonstrates continued inability to meet the benchmarks, and the  
5 possibility of discharges that cause or contribute to a violation of water quality standards.” The  
6 Board’s holding on summary judgment makes clear that site-specific solutions are called for by  
7 Condition S8. of the ISGP, and may be beyond those BMPs described in the SWMM. Such  
8 steps are, however, part of the adaptive management response of the permit. Those  
9 requirements are triggered by sampling that demonstrates continued exceedances of benchmark  
10 values. Boeing disagrees with the Board’s conclusion, and asked the Board to reconsider and  
11 allow evidence on this question. The Board did allow evidence, but the evidence presented at  
12 hearing does not change our conclusion.

13 [35]

14 RCW 90.48.555(6) affords industrial permittees a “presumption of compliance” with  
15 water quality standards when the permittee is in full compliance with *all permit conditions, and*  
16 *fully implementing stormwater best management practices* contained in stormwater technical  
17 manuals approved by Ecology (or demonstrably equivalent practices) (emphasis added). RCW  
18 90.48.555(6)(b). Boeing has argued that so long as it is implementing Ecology’s stormwater  
19 management manuals, and BMPs described therein, it is entitled to this presumption of  
20 compliance with water quality standards, and need not take further corrective action steps, even  
21 if it is not meeting benchmarks. Boeing asserts that discharge monitoring data or sampling  
results that demonstrate a failure to meet the benchmark are not indicative of a violation of water

1 quality standards and do not negate the presumption of compliance. Boeing argues that the  
2 benchmarks themselves are not accurate measurements of water quality, and expecting on-going  
3 efforts to comply with the benchmarks converts them into numeric effluent limitations. Boeing  
4 appears to be stating that the Board’s ruling on summary judgment is tantamount to a holding  
5 that a failure to meet the benchmarks is equivalent to a violation of water quality standards.  
6 Boeing argues that ISGP benchmarks, if interpreted in this manner, are arbitrary and capricious.

7 [36]

8 Boeing misconstrues both the Board’s ruling on summary judgment, and the manner in  
9 which the presumption of compliance stated at RCW 90.48.555(6) must be applied. As we have  
10 repeatedly stated, while an exceedance of a benchmark is not, in and of itself, a violation of a  
11 water quality standard, the benchmarks are indicator values--values that are predictive of  
12 potential, or actual, water quality violations. *PSA v. Northwest Marine Trade Assc.; Association*  
13 *of General Contractors v. Ecology, supra*. A failure to meet benchmarks requires a permittee to  
14 make continued efforts to improve application and performance of BMPs. The statutory  
15 “presumption of compliance” requires a permittee to comply with “all permit conditions,”  
16 including those that require increasing levels of corrective actions to meet the benchmark values.  
17 This calls for professional level involvement in the modification of the SWPPP, and  
18 implementation of new or site-specific BMPs. *Condition S8.D.2.b*. The permittee may have to  
19 pursue industry specific responses to meet benchmarks.

20 If, in the course of the adaptive management process, the permittee has AKART in place  
21 and has implemented a Level 3 response but continues to not meet the benchmarks, the ISGP

offers two paths. The first option is to seek a waiver, and to demonstrate that installation of

1 additional BMPs is not feasible or not necessary to prevent discharges that may cause of  
2 contribute to violations of water quality standards. The second option is to take further steps to  
3 attain the benchmark or, alternatively, bring a facility into compliance with water quality  
4 standards as the case may be. Ecology may require this second option through the issuance of an  
5 administrative order.

6 The adaptive management process envisioned by the permit is iterative, and does not  
7 necessarily anticipate the kind of definitive cut-off point Boeing appears to seek. The permittee  
8 is ultimately required to comply with water quality standards, both under the law, and under the  
9 terms of the ISGP. *Condition S10*. To work as an effective adaptive management process,  
10 however, Condition S8. requires further refinement. This Board has previously recognized that,  
11 to be valid, an adaptive management program in a general permit requires a meaningful  
12 mechanism for feedback, to allow evaluation of the effectiveness of the measures and to make  
13 any necessary changes in response to such results in order to achieve the desired goal. *Puget*  
14 *Soundkeeper Alliance v. Ecology*, PCHB Nos. 07-021, 07-026 through 07-030, 07-037 (Phase I)  
15 and 07-022 & 07-023 (Phase II), Findings of Fact, Conclusions of Law, and Order, (2008)  
16 (Municipal Stormwater General Permit, Condition S4., Phase I and Phase II). Quarterly  
17 discharge monitoring reports may be sufficient feedback in some circumstances, particularly  
18 with Level 1 and Level 2 actions, but they are likely inadequate in more complex situations such  
19 as Level 3 treatment BMPs. *Id.* at COL 22. Ecology's lead permit writer has explained that at a  
20 Level 3 corrective action, Ecology and the permittee will be engaged in an iterative exchange  
21 and evaluation of BMPs, to bring the facility to compliance with benchmarks. We conclude that

Condition S8.D. (Level Three Corrective Actions) of the ISGP should also require the use of  
FINDINGS OF FACT, CONCLUSIONS  
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ORDER

A. The Board concludes that the majority of provisions of the 2010 Industrial Stormwater General Permit are valid and lawful. Pursuant to WAC 371-08-540, we remand the following limited aspects of the permit to Ecology for modifications.

1. Ecology shall modify Condition S4.B.6., the “Consistent Attainment” provision consistent with the alternatives discussed in this opinion.
2. Ecology shall modify the provisions of Condition S8., “Corrective Actions” consistent with this opinion.

B. The previously entered STAY related to compliance with Antidegradation requirements is VACATED.

C. Having allowed the presentation of evidence on Legal Issues No. 31 and 62, as requested by Boeing, the Board DENIES the motion to Reconsider its January 5, 2011 Order on Summary Judgment addressing these issues.

DONE this 25<sup>th</sup> day of April, 2011.

POLLUTION CONTROL HEARINGS BOARD  
KATHLEEN D. MIX, Presiding  
SEE CONCURRENCE  
WILLIAM H. LYNCH, Member  
ANDREA McNAMARA DOYLE, Chair

1 **COPPER DEVELOPMENT ET AL. v. ECOLOGY ET AL.**  
2 **P 10-135 THROUGH P 10-141**

3 **APPENDIX A**  
4 **(to Findings of Fact, Conclusions of Law, and Order)**

- 5 5. Does the issuance of the general permit violate the total maximum daily load (TMDL)  
6 requirements of the federal and state Clean Water Acts by authorizing a discharge by a  
7 new source into 303(d) listed waters?
- 8 6. Are the Permit's monitoring, application and reporting requirements consistent with  
9 federal and state law requirements?
- 10 7. Are the Permit's effluent limitations consistent with federal and state law requirements?
- 11 8. Does the permit lack All Known and Reasonable Technologies?
- 12 9. Are the Permit's adaptive management requirements (corrective actions) inconsistent  
13 with state law?
- 14 10. If the Board does have jurisdiction to consider this appeal, are Ecology's provisions for  
15 modifications of the permit arbitrary and capricious?
- 16 11. Is the permit consistent with the requirements for general industrial stormwater permits  
17 under RCW 90.48.555?
- 18 12. In its development of the permit, has Ecology violated the requirements of the anti-  
19 degradation policy, WAC 173-201A, Part III?
- 20 13. Is the permit consistent with the regulations and procedural requirements for issuing a  
21 NPDES and general permit, including chapters 173-201A, 173-204, 173-220 and 173-  
226 WAC?
14. Are the permit coverage requirements for transportation facilities in Condition S1.A.1,  
Table 1, arbitrary, capricious, or otherwise unlawful?
16. Is S1.A.1 invalid in its omission of a coverage requirement for transportation facilities  
that have material handling facilities?
19. Is Condition S.1.C.4 of the permit invalid by failing to adequately define what facilities  
used for office buildings and administrative parking lots are exempt from permit  
coverage?

- 1 20. Should Condition S.1.C.4 exempt all parking lots from coverage under the permit where  
2 stormwater does not commingle with stormwater from areas associated with industrial  
activities?
- 3 34. Are the provisions of S4 concerning monitoring arbitrary and capricious or otherwise  
4 invalid?
- 5 35. Are the provisions of S4.B concerning sampling timing requirements invalid?
- 6 42. Are the copper benchmarks in Condition S5.A of the permit arbitrary and capricious, not  
based on substantial evidence and otherwise unreasonable and unlawful?
- 7 43. Does the ability to grant site-specific waivers or permit modifications cure the alleged  
8 legal defects associated with the copper benchmarks in Condition S5.A of the permit?
- 9 45. Are the provisions of S5.A concerning the oil benchmark and accompanying monitoring  
requirements invalid?
- 10 49. Are the provisions of S5.B.5 concerning benchmarks for the timber and paper products  
11 industries invalid?
- 12 50. Are the provisions of S5.D.1 concerning conditionally authorized stormwater discharges invalid?
- 13 51. Are the provisions of S6.C concerning compliance schedules for effluent limitations for  
14 discharges to 303(d)-listed waters invalid, in that no provision is made to ensure  
satisfaction of the requirements of WAC 173-226-180 regarding interim requirements  
and reporting?
- 15 52. Is the permit's omission and/or limited application of numeric water quality-based  
16 effluent limitations for discharges to some categories of 303(d)-listed water bodies  
inconsistent with the requirements of RCW 90.48.555 or otherwise invalid?
- 17 53. Are the provisions of S6.D concerning discharges to water bodies with TMDLs invalid?
- 18 54. Is Condition S.6.C of the permit arbitrary and capricious or otherwise invalid by  
19 requiring monitoring and compliance with a TSS effluent limitation as a surrogate for a  
303(d) listing based on a sediment quality parameter?
- 20 55. Is Condition S.6.C of the permit arbitrary and capricious or invalid by requiring  
21 monitoring and compliance with a fecal coliform effluent limitation by all SIC codes  
covered under the permit?

- 1 56. Do the numeric effluent limits applicable to discharges into Section 303(d) listed water  
2 bodies in Condition S6.C, Table 5, violate RCW 90.48.555?  
3 (West) Are the additional sampling requirements of Table 5 adequate to ensure protection  
4 of impaired bodies of water?
- 5 58. Are the provisions of S8 concerning timelines and triggers for corrective actions arbitrary  
6 and capricious or otherwise invalid?
- 7 59. Are the provisions of S8 concerning waivers from the requirements of Level 2 and Level  
8 3 responses arbitrary and capricious or otherwise invalid?
- 9 60. Are the provisions of S8.D concerning the requirements for treatment BMPs invalid?
- 10 64. Are Conditions S8.C.4 and S8.D.4 of the permit invalid by failing to define when it may  
11 be unnecessary to achieve a benchmark?
- 12 65. Are Conditions S8.C.4, S8.D.4 and S10 of the permit invalid by requiring a  
13 demonstration as to the feasibility and necessity for additional BMPs?  
14  
15  
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17  
18  
19  
20  
21

1 BEFORE THE POLLUTION CONTROL HEARINGS BOARD  
2 STATE OF WASHINGTON

3 COPPER DEVELOPMENT  
4 ASSOCIATION, INC., and THE  
5 INTERNATIONAL COPPER  
6 ASSOCIATION, LTD., OLYMPIANS FOR  
7 PUBLIC ACCOUNTABILITY, ARTHUR  
8 WEST, PUGET SOUNDKEEPER  
9 ALLIANCE, COLUMBIA RIVERKEEPER,  
10 THE BOEING COMPANY, and  
11 GUNDERSON RAIL SERVICES,

12 Appellants,

13 v.

14 STATE OF WASHINGTON,  
15 DEPARTMENT OF ECOLOGY, and the  
16 PORT OF OLYMPIA,

17 Respondents,

18 WEYERHAEUSER COMPANY,

19 Intervenor.

PCHB NOS. 09-135 through 09-141

FINDINGS OF FACT, CONCLUSIONS OF  
LAW, AND ORDER

CONCURRENCE

20 I concur with the result of this opinion.

21 DONE this 25<sup>th</sup> day of April, 2011.

POLLUTION CONTROL HEARINGS BOARD

William H. Lynch  
WILLIAM H. LYNCH, Member

FINDINGS OF FACT, CONCLUSIONS  
OF LAW, AND ORDER - CONCURRENCE  
PCHB Nos. 09-135 through 09-141

## APPENDIX 3

Order on Summary Judgment (Legal Issues  
No. 15, 24-25, 31, 44, 46-48, 56, 61-62, and  
65-67) (Ecology's Motion for Summary  
Judgment Regarding Issues Raised by  
Appellants PSA and Boeing)

*Copper Development Association, Inc., et al.*  
*v. Ecology, et al.*, PCHB Nos. 09-135 through  
09-141

January 5, 2011

1                   BEFORE THE POLLUTION CONTROL HEARINGS BOARD  
2                   STATE OF WASHINGTON

3 COPPER DEVELOPMENT  
4 ASSOCIATION, INC., and THE  
5 INTERNATIONAL COPPER  
6 ASSOCIATION, LTD., OLYMPIANS FOR  
7 PUBLIC ACCOUNTABILITY, ARTHUR  
8 WEST, PUGET SOUNDKEEPER  
9 ALLIANCE, COLUMBIA RIVERKEEPER,  
10 THE BOEING COMPANY, and  
11 GUNDERSON RAIL SERVICES,

12                   Appellants,

13                   v.

14 STATE OF WASHINGTON,  
15 DEPARTMENT OF ECOLOGY, and the  
16 PORT OF OLYMPIA,

17                   Respondents,

18 WEYERHAEUSER COMPANY,

19                   Intervenor.

PCHB NOS. 09-135 through 09-141

ORDER ON SUMMARY JUDGMENT  
(Legal Issues No. 15, 24-25, 31, 44, 46-48,  
56, 61-62, and 65-67)

(Ecology's Motion for Summary Judgment  
Regarding Issues Raised By Appellants PSA  
and Boeing)

20                   INTRODUCTION

21                   Multiple parties filed appeals of the Industrial Stormwater General Permit (ISGP or  
22 General Permit) issued by the Department of Ecology (Ecology) in October 2009. A Pre-  
23 Hearing Order dated January 25, 2010, set out the legal issues that control the course of the  
24 proceedings. Respondent Department of Ecology (Ecology) has moved for summary judgment

25 ORDER ON SUMMARY JUDGMENT  
26 LEGAL ISSUES NO. 15, 24-25, 31, 44, 46-48,  
27 56, 61-62, and 65-67.  
28 Ecology's Motion for Summary Judgment  
29 Regarding Issues Raised By Appellants PSA and Boeing  
30 PCHB Nos. 09-135 through 09-141

1 on Issues No. 15, 24, 25, 31, 44, 46-48, 56, 61, 62, and 65-67 from the Pre-Hearing Order.  
2 Appellants Puget Soundkeeper Alliance, Columbia Riverkeeper, and Olympians for Public  
3 Accountability (collectively PSA) and The Boeing Company (Boeing) oppose some aspects of  
4 the motion for summary judgment and support others. Assistant Attorney General Thomas J.  
5 Young and Senior Counsel Ronald L. Lavigne represent Respondent Ecology. Attorney Richard  
6 A. Smith represents Appellant PSA. Attorneys James A. Tupper, Sarah E. Mack, Lynne M.  
7 Cohee, and Bradford Doll represent Appellant Boeing. Other Appellants and the Intervenor did  
8 not participate in this motion.

9 The parties submitted the motion to the Board on the written record, without oral  
10 argument. The issues before the Board on Ecology's motion for summary judgment regarding  
11 issues raised by Appellant PSA and Boeing are as follows:

- 12 1. [Issue No. 15] Is Ecology's post-permit issuance change, through issuance of an  
13 errata sheet, to S1.A.1 to eliminate permit coverage requirements for  
transportation facilities that have material handling facilities, invalid?
- 14 2. [Issue No. 24] Is Condition S2.B of the permit invalid by failing to adequately  
15 define the term "significant process change"?
- 16 3. [Issue No. 25] May Ecology lawfully modify a general NPDES permit through  
17 modification of permit coverage as provided in Conditions S2.B, S8.C and S8.D?
- 18 4. [Issue No. 31] Does the permit require in Condition S3.A.2.a, or in any other  
19 condition of the permit, facilities to install process, source and treatment  
20 stormwater best management practices (BMPs) that are not described in either the  
Western Washington or Eastern Washington Stormwater Management Manuals?  
If the permit requires BMPs that are not described in the Ecology stormwater  
management manuals, are those requirements vague, unreasonable and unlawful?
- 21 5. [Issue No. 44] Does Ecology's development of numeric benchmarks for copper,  
zinc, and turbidity constitute rules of general applicability adopted in violation of  
Ch. 34.05 RCW?

ORDER ON SUMMARY JUDGMENT  
LEGAL ISSUES NO. 15, 24-25, 31, 44, 46-48,  
56, 61-62, and 65-67.  
Ecology's Motion for Summary Judgment  
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- 1           6.     [Issue No. 46] Did Ecology invalidly fail to perform reasonable potential analysis  
2           in the development of the permit?
- 3           7.     [Issue No. 47] Did Ecology invalidly fail to make the determinations required by  
4           RCW 90.48.555 in the development of the permit?
- 5           8.     [Issue No. 48] Is the permit's failure to establish numeric water quality-based  
6           effluent limitations invalid?
- 7           9.     [Issue No. 56] Do the numeric effluent limits applicable to discharges into  
8           Section 303(d) listed water bodies in Condition S6.C, Table 5, violate RCW  
9           90.48.555? (West) Are the additional sampling requirements of Table 5 adequate  
10           to ensure protection of impaired bodies of water?
- 11          10.    [Issue No. 61] Is Condition S8.A of the permit vague, unreasonable and unlawful  
12          by requiring compliance with a prior expired permit?
- 13          11.    [Issue No. 62] Are Conditions S8.C.4 and S8.D.4 of the permit invalid in  
14          requiring source control BMPs and treatment BMPs "with the goal of achieving  
15          the applicable benchmark" without defining the specific BMPs or level of  
16          adaptive management necessary to meet the stated "goal"?
- 17          12.    [Issue No. 65] Are Conditions S8.C.4, S8.D.4 and S10 of the permit invalid by  
18          requiring a demonstration as to the feasibility and necessity for additional BMPs?
- 19          13.    [Issue No. 66] Are the provisions of S9.F concerning public access to stormwater  
20          pollution prevention plans arbitrary and capricious, insufficiently clear or  
21          otherwise invalid?
14.    [Issue No. 67] Is Condition S10.C of the permit vague, unreasonable and  
          unlawful by requiring application of AKART to achieve water quality standards?

15           Board Members Kathleen D. Mix, Presiding, Andrea McNamara Doyle, Chair, and  
16           William H. Lynch, Member, reviewed and considered the written record before the Board on this  
17           motion, which included the following:

- 18           1.     Ecology's Motion for Summary Judgment Regarding Issues Raised By Appellants  
19           PSA and Boeing.

20  
21           ORDER ON SUMMARY JUDGMENT  
          LEGAL ISSUES NO. 15, 24-25, 31, 44, 46-48,  
          56, 61-62, and 65-67.  
          Ecology's Motion for Summary Judgment  
          Regarding Issues Raised By Appellants PSA and Boeing  
          PCHB Nos. 09-135 through 09-141

- 1           2. Declaration of Thomas J. Young in Support of Ecology's Motion for Summary  
2           Judgment Regarding Issues Raised By Appellants PSA and Boeing, with Exhibits A-  
3           C.
- 4           3. Puget Soundkeeper Alliance, Columbia Riverkeeper, and Olympians for Public  
5           Accountability's Response to Ecology's Motion for Summary Judgment, with  
6           Exhibits 1-3.
- 7           4. The Boeing Company's Response to Ecology's Motion for Summary Judgment  
8           Regarding Issues Raised By Appellants Puget Soundkeeper Alliance and The Boeing  
9           Company.
- 10          5. Declaration of Susan C. Paulsen, Ph.D, P.E. (CA) in Support of The Boeing  
11          Company's Responses to Summary Judgment Motions, with Exhibits 1-8.
- 12          6. Declaration of Paul Fendt P.E. in Support of The Boeing Company's Responses to  
13          Summary Judgment Motions, with Exhibits 1-3.
- 14          7. Declaration of Bradford Doll in Support of Boeing's Response to Ecology's Motion  
15          for Summary Judgment, with Exhibits A-E.
- 16          8. Department of Ecology's Reply in Support of Motion for Summary Judgment  
17          Regarding Issues Raised By Appellants PSA and Boeing.

18  
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20  
21 ORDER ON SUMMARY JUDGMENT  
LEGAL ISSUES NO. 15, 24-25, 31, 44, 46-48,  
56, 61-62, and 65-67.  
Ecology's Motion for Summary Judgment  
Regarding Issues Raised By Appellants PSA and Boeing  
PCHB Nos. 09-135 through 09-141

1 BACKGROUND AND FACTS

2 The ISGP is a National Pollutant Discharge Elimination System (NPDES) permit  
3 required under both the federal Clean Water Act, and state law authority which requires a  
4 discharge permit for the disposal of any waste material into waters of the state by any type of  
5 commercial or industrial operation. 33 U.S.C. § 1342(p)(2)(B); RCW 90.48.160. The ISGP is a  
6 statewide permit that applies to facilities conducting industrial activities that discharge  
7 stormwater to surface waters or to a storm sewer system that drains to surface waters. The ISGP  
8 is also a State Waste Discharge Permit that operates to protect groundwater from stormwater  
9 discharged or infiltrated to groundwater under the authority of RCW Chapter 90.48. *Condition*  
10 *SI.E (p. 10); Draft Fact Sheet (p. 60)*. The ISGP, like other general permits, allows Ecology to  
11 regulate and administer a single permit for multiple industries that discharge to waters of the  
12 State, rather than issuing individual NPDES discharge permits to multiple industrial dischargers.  
13 Ecology issued the ISGP on October 21, 2009, with an effective period of five years, from  
14 January 1, 2010, to January 1, 2015. This version of the General Permit replaces the 2004 ISGP,  
15 which was re-issued without changes on August 15, 2007, and October 15, 2008. *2010 ISGP;*  
16 *Draft Fact Sheet.*<sup>1</sup>

17 The General Permit identifies a wide range of industrial activities that require permit  
18 coverage, and specifies how currently permitted, and unpermitted existing and new facilities

19 <sup>1</sup> The 2010 ISGP and accompanying Draft Fact Sheet (dated June 3, 2009) are part of the Board's ongoing record in  
20 this case, filed with the Notices of Appeals filed by parties, or as attachments to a prior Summary Judgment Motion.  
21 The Board will also reference to Ecology's Stormwater Management Manuals, which are referenced in the General  
Permit, and available for review at Ecology's website.

1 should obtain permit coverage. The General Permit requires each facility to maintain and  
2 implement a Stormwater Pollution Prevention Plan (SWPPP), which is a site-specific document  
3 addressing several critical elements of stormwater management. The SWPPP must include a site  
4 map, a detailed assessment of the facility, a detailed description of Best Management Practices  
5 (BMPs) selected to eliminate or reduce the potential for contamination of stormwater and  
6 prevent water quality violations, and a sampling plan. The General Permit also defines  
7 benchmarks, effluent limitations and other specific, applicable sampling requirements.  
8 Additional terms set out requirements for discharges to 303(d)-listed water bodies or waters  
9 subject to total maximum daily loads (TMDLs). Other permit terms address inspections,  
10 corrective actions, and reporting and record keeping requirements, among other terms.

#### 11 ANALYSIS

12 Summary judgment is a procedure available to avoid unnecessary trials on formal issues  
13 that cannot be factually supported and could not lead to, or result in, a favorable outcome to the  
14 opposing party. *Jacobsen v. State*, 89 Wn.2d 104, 569 P.2d 1152 (1977). The summary  
15 judgment procedure is designed to eliminate trial if only questions of law remain for resolution.  
16 Summary judgment is appropriate when the only controversy involves the meaning of statutes,  
17 and neither party contests the facts relevant to a legal determination. *Rainier Nat'l Bank v.*  
18 *Security State Bank*, 59 Wn. App. 161, 164, 796 P.2d 443 (1990), review denied, 117 Wn.2d  
19 1004 (1991).

20  
21 ORDER ON SUMMARY JUDGMENT  
LEGAL ISSUES NO. 15, 24-25, 31, 44, 46-48,  
56, 61-62, and 65-67.  
Ecology's Motion for Summary Judgment  
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1           The party moving for summary judgment must show there are no genuine issues of  
2 material fact and the moving party is entitled to judgment as a matter of law. *Magula v. Benton*  
3 *Franklin Title Co., Inc.*, 131 Wn.2d 171, 182, 930 P.2d 307 (1997). A material fact in a  
4 summary judgment proceeding is one that will affect the outcome under the governing law.  
5 *Eriks v. Denver*, 118 Wn.2d 451, 456, 824 P.2d 1207 (1992). In a summary judgment, all facts  
6 and reasonable inferences must be construed in favor of the nonmoving party. *Jones v. Allstate*  
7 *Ins. Co.*, 146 Wn.2d 291, 300, 45 P.3d 1068 (2002). Summary judgment may also be granted to  
8 the non-moving party when facts are not in dispute. *Impecoven v. Department of Revenue*, 120  
9 Wn.2d 357, 365, 842 P.2d 470 (1992).

10           The Board will review the terms of a General Permit to determine if it is “invalid in any  
11 respect,” and whether it is consistent with applicable legal requirements. WA 371-08-540(2);  
12 *PSA v. Ecology*, PCHB No. 02-162, (Order Granting Summary Judgment, June 6, 2003). The  
13 Board addresses each of the issues raised by Ecology’s motion below, concluding that summary  
14 judgment should be granted to Ecology on several issues, but others issues must proceed to  
15 hearing.

- 16           1. [Issue No. 15] Is Ecology’s post-permit issuance change, through issuance of an  
17           errata sheet, to S1.A.1 to eliminate permit coverage requirements for transportation  
18           facilities that have material handling facilities, invalid?

19           After issuance of the ISGP, Ecology made a change to Condition S1.A.1. by means of an  
20 errata sheet, viewing the change as a minor permit modification that did not lessen the stringency  
21 of any effluent limitation of the ISGP. The change eliminated permit coverage requirements for

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1 transportation facilities that have material handling facilities, in order to make the permit term  
2 consistent with the applicable definition in federal regulations. 40 C.F.R. § 122.26(b)(14)(viii).  
3 PSA does not oppose granting summary judgment to Ecology on this issue, and Boeing asserts  
4 that summary judgment should be granted to Ecology. In the absence of material facts and  
5 opposing legal argument, the Board grants summary judgment to Ecology on Legal Issue 15, and  
6 it is dismissed from the appeal.

7 2. [Issue No. 24] Is Condition S2.B of the permit invalid by failing to adequately define  
8 the term “significant process change”?

9 In this issue, Boeing asserts that the definition of “significant process change” requires a  
10 “reasonable potential analysis” in order to obtain a modification of the permit coverage, and that  
11 such a requirement is unreasonable and costly, effectively precluding permit coverage  
12 modifications when there is a “significant process change” at a facility. PSA asserts that the  
13 Board should grant summary judgment to Ecology on this issue.

14 Condition S.2.B. of the ISGP requires that permittees anticipating a significant process  
15 change seek a modification of coverage from Ecology. The term in dispute is defined in  
16 Appendix 2 to the ISGP (Definitions) as follows (italicized terms are also defined in the  
17 definition section of the permit):

18 *Significant Process Change* means any modification of the *facility* that would  
19 result in any of the following: 1. Add different *pollutants* in a *significant amount*  
20 to the discharge. 2. Increase the *pollutants* in the *stormwater discharge* by a  
*significant amount*. 3. Add a new *industrial activity* (SIC) that was not  
previously covered. 4. Add additional impervious surface or acreage such that  
stormwater discharge would be increased by 25% or more.

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1 Ecology argues that Boeing misreads Condition S2.B. While this permit term requires  
2 permittees that anticipate a significant process change to file a modification of coverage form,  
3 Ecology asserts the permittee does not need to perform a “reasonable potential analysis.”  
4 Instead, Ecology says the permittee may rely on generalized assumptions, or data about  
5 anticipated discharges, and common sense, to determine if a change at the facility meets the  
6 definition of a “significant process change.”

7 The Board concludes that summary judgment should be granted to Ecology on this issue.  
8 The term “significant process change” is well-defined in the ISGP, and does not require the  
9 permittee to undertake a complex “reasonable potential analysis” in order to obtain a permit  
10 modification. The further definitions of “significant amount”<sup>2</sup> and “reasonable potential”<sup>3</sup> both  
11 allow the permittee to make judgments based on available information, and common  
12 understanding of terms, as to whether or not a change at a facility fits the definition of  
13 “significant process change.” Boeing reads the term “significant amount” in the disputed  
14 definition to require a reasonable potential analysis, but in doing so, ignores the first section of  
15 that definition, which defines “significant amount” as “an amount of a pollutant in a discharge  
16 that is amenable to available and reasonable methods of prevention, control, or treatment.” The  
17 alternative, or second part of the definition (“*or* an amount of a pollutant that has a reasonable

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18 <sup>2</sup> “*Significant Amount* means an amount of a *pollutant* in a *discharge* that is amendable to available and reasonable  
19 methods of prevention, control, or treatment; or an amount of a *pollutant* that has a *reasonable potential* to cause a  
20 violation of surface or *ground water quality standards* or *sediment* management standards.” ISGP, Appendix 2, p.  
21 56.

<sup>3</sup> “*Reasonable Potential*” means the likely probability for *pollutants* in the *discharge* to exceed the applicable water  
quality criteria in the receiving water body.” ISGP, Appendix 2, p. 55.

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1 potential....)” (emphasis added), refers to the term “reasonable potential” as an alternative  
2 method of defining the term “significant amount.” However, when read in the context of all  
3 definitions, we cannot conclude that the term “significant process change” requires the kind of  
4 analysis Boeing is concerned with. We also give some deference to Ecology’s interpretation of  
5 the terms it has set forth in its permit, as an exercise of the agency’s discretion based on  
6 professional judgment. *See PSA v. Ecology*, PCHB Nos. 07-021, 07-026 through -030, 07-037,  
7 (Phase I Order on Dispositive Motions, April 8, 2008). We conclude the definition of  
8 “significant process change” is a valid and well-defined permit term, and grant summary  
9 judgment to Ecology on this issue.

10 3. [Issue No. 25] May Ecology lawfully modify a general NPDES permit through  
11 modification of permit coverage as provided in Conditions S2.B, S8.C and S8.D?

12 This issue, raised by Boeing, raises questions about ISGP conditions that require a  
13 permittee to apply to modify permit coverage in the event of a significant process change, or in  
14 the event a permittee seeks an extension of time or waiver during the corrective action processes  
15 of permit condition S8. PSA supports granting summary judgment to Ecology on this issue. In  
16 its responsive brief Boeing states that it opposes summary judgment, “to the extent that it would  
17 preclude a hearing on Legal Issue 63, which is necessary to address an apparent conflict between  
18 the permit modification timelines under S2. and the modifications for permit waivers under S8.C.  
19 and S8.D.” *Boeing Response at 5*. The Board addressed the issue of an apparent conflict in these  
20 timelines in its Order on Summary Judgment (Legal Issues No. 18 and 23), December 10, 2010.

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1 We stated as follows in that decision:

2 “Under the ISGP, any permittee anticipating a “significant process change,” a  
3 term defined in the General Permit, or otherwise seeking a modification of  
4 permit coverage, must submit a “modification of coverage form” to Ecology.  
5 *Condition S2.B. (p. 11).* The General Permit then sets out timelines  
6 governing the modification of coverage, if Ecology does not otherwise give  
7 notice to the permittee. *Condition S2.C. (p. 12).* This condition provides that  
8 a permit modification automatically commences on whichever is later—the  
9 31<sup>st</sup> day following Ecology’s receipt of a modification of coverage form, *or*  
10 the 31<sup>st</sup> day following the end of a 30-day public comment period. PSA  
11 points out that the permit modification timeline is inconsistent with the  
12 provisions of Condition S8.C. and D., the latter timeframe stating that  
13 Ecology will approve or deny a permit modification related to a time  
14 extension or waiver within *60 days* of the modification request.”

15 The Board then concluded, in part: “We are also satisfied that when it comes to modifications  
16 related extensions of time or waivers under the corrective action provisions of Condition S8., the  
17 more specific permit term, which requires Ecology to approve or deny within 60 days, controls  
18 over the more general permit modification provision of S2.C.” *See Order on Summary Judgment*  
19 *at 11-13, December 10, 2010.*

20 Based on the same reasoning set forth in the previous Order on Summary Judgment  
21 regarding Issue No. 23, we reject Boeing’s argument in the instant motion that there is an  
apparent conflict between the permit modification timelines of Condition S2., and those of S8.C.  
and S8.D. Summary Judgment is granted to Ecology on Issue No. 25, and on Issue No. 63,  
which is simply another statement of the same issue. Summary Judgment has already been  
granted to Ecology on Issue No. 23.

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1 4. [Issue No. 31] Does the permit require in Condition S3.A.2.a, or in any other  
2 condition of the permit, facilities to install process, source and treatment stormwater  
3 best management practices (BMPs) that are not described in either the Western  
4 Washington or Eastern Washington Stormwater Management Manuals? If the permit  
5 requires BMPs that are not described in the Ecology stormwater management  
6 manuals, are those requirements vague, unreasonable and unlawful?

7 Ecology moves for summary judgment on both parts of this issue, which was raised by  
8 Boeing. In the first part of this issue, Boeing asks whether the ISGP requires permittees to install  
9 BMPs that are not described in the Eastern or Western Washington Stormwater Management  
10 Manuals (Manuals). If so, the second part of the issue asks whether this is a lawful and valid  
11 permit requirement. PSA agrees that Summary Judgment should be granted to Ecology on this  
12 issue.

13 Ecology argues that the ISGP correctly requires permittees to install BMPs that are not  
14 described in the Manuals because a permittee must comply both with technology-based effluent  
15 limitations and any water quality based effluent limitations necessary to meet water quality  
16 standards, citing 33 U.S.C. § 1311(b)(1)(C). Ecology explains that technology-based effluent  
17 limits are the BMPs contained in the Manuals, or otherwise approved by Ecology, and that such  
18 mandatory BMPs are necessary to meet state law requirements to apply all know, available and  
19 reasonable methods of treatment (the AKART standard). However, in addition to such a  
20 requirement, the ISGP also requires permittees make on-going efforts to meet benchmarks as  
21 part of the adaptive management regime of the permit, which is a narrative water quality based  
effluent limitation designed to ensure compliance with water quality standards. Because these

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1 are water quality based effluent limitations, permittees may be required to install BMPs that go  
2 beyond those described in the Manuals to meet water quality standards. The ISGP requires that a  
3 permittee that reaches a Level 3 corrective action must review its stormwater pollution  
4 prevention plan (SWPPP), and have a licensed professional engineer, geologist, hydrogeologist,  
5 or Certified Professional in Storm Water Quality design and stamp the portion of the SWPPP  
6 that addresses stormwater treatment structures and processes. *Condition S8.D.2.*

7 Boeing asserts that Ecology's position is contrary to the RCW 90.48.555(6), which states  
8 that compliance with water quality standards is presumed, unless discharge monitoring data or  
9 other site specific information demonstrates that a discharge causes or contributes to a violation  
10 of water quality standards. Boeing argues that requiring a permittee to employ unspecified  
11 BMPs is a vague permit term, and converts the benchmarks of the adaptive management scheme  
12 into numeric effluent limitations. Boeing also argues that the ISGP lacks clarity as to what a  
13 permittee is to do if they reach Level 3 in the adaptive management process, but is still unable to  
14 reach the benchmark(s).

15 The Board concludes that this issue presents a purely legal question of whether the ISGP  
16 may lawfully require permittees to implement BMPs beyond those set out in the Manuals. The  
17 Board concludes that the ISGP requires permittees to install BMPs beyond those described in the  
18 Manuals in defined circumstances, and that this is a lawful and valid permit term, for many of  
19 the reasons outlined in Ecology's motion. The ISGP must ensure compliance with water quality  
20 standards, and in order to do so, exceedances of benchmarks must continue to trigger an adaptive

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1 management response. Ecology would be remiss if it crafted a permit that condoned continued  
2 benchmark exceedances, or ignored the relationship between benchmark exceedances and  
3 potential water quality violations, as the agency points out in its Reply brief.

4 Boeing's reliance on the "presumption of compliance" of RCW 90.48.555(6) is  
5 misplaced. The requirement to implement more aggressive BMPs, and those outside the  
6 Manuals, would be triggered when a permittee is already at a Level 3 corrective action response,  
7 presumably based on data or other site-specific information that demonstrates continued inability  
8 to meet the benchmarks, and the possibility of discharges that cause or contribute to a violation  
9 of water quality standards. In such circumstances, no presumption of compliance is afforded the  
10 permittee under RCW 90.48.555(6).

11 We conclude that the ISGP term that anticipates a site-specific, professionally engineered  
12 response to ongoing exceedances of the benchmarks is a necessary and reasonable part of the  
13 adaptive management response required of this permit. *See* RCW 90.48.555(8). Such a  
14 requirement does not convert benchmarks into numeric effluent limitations, but rather puts the  
15 burden on the permittee to find solutions to meet benchmarks and ensure compliance with water  
16 quality standards. The permittee is advised when such a requirement is triggered (Level 3 of the  
17 corrective action), and given the opportunity to use professionally engineered solutions in a site-  
18 specific manner. We conclude that summary judgment should be granted to Ecology on Issue  
19 No. 31.

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1 5. [Issue No. 44] Does Ecology's development of numeric benchmarks for copper, zinc,  
2 and turbidity constitute rules of general applicability adopted in violation of Ch. 34.05  
RCW?

3 This issue, raised by Boeing, asks whether Ecology violated the Administrative  
4 Procedures Act (APA) by including numeric benchmarks in the ISGP without following rule-  
5 making procedures of the APA. Although this issue was initially raised by Boeing, it now  
6 concedes that the Board lacks jurisdiction over this question. PSA agrees that summary  
7 judgment should be granted to Ecology. Because there is no opposition to Ecology's motion,  
8 and for the same reasons set out in this Board's decision in the appeal of the Phase II municipal  
9 stormwater permit, this issue is dismissed for lack of jurisdiction. *Puget Soundkeeper Alliance v.*  
10 *Ecology*, PCHB Nos. 07-22, 07-23 at pp. 17-21 (Order on Summary Judgment, Sept. 29, 2008).

11 6. [Issue No. 46] Did Ecology invalidly fail to perform reasonable potential analysis in  
12 the development of the permit?

13 This issue, raised by PSA, presents the question of whether or not Ecology performed a  
14 reasonable potential analysis to determine if discharges covered under the ISGP have the  
15 reasonable potential to cause or contribute to violations of water quality standards. In response  
16 to Ecology's motion, PSA now concedes that it "is satisfied with the reasonable potential  
17 analysis performed by Ecology and thus willing to see Issue 46 dismissed..." Boeing joins in  
18 Ecology's motion. It is clear from the record that there is no dispute that Ecology did perform a  
19 generalized reasonable potential analysis related to stormwater discharges from industrial  
20 facilities. *Fact Sheet at 48; Young Decl., Ex. A at 61-62 (Killelea Dep., Vol. I)*. Accordingly,

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1 summary judgment is granted to Ecology, and Issue 46 is dismissed from this appeal.

2 7. [Issue No. 47] Did Ecology invalidly fail to make the determinations required by  
3 RCW 90.48.555 in the development of the permit?

4 This issue, also raised by PSA, raises a second aspect of the same question presented in  
5 Issue No. 46—whether Ecology made a determination that effluent limitations based on  
6 nonnumeric best management practices were not effective in achieving compliance with water  
7 quality standards, as required by RCW 90.48.555(3)(d). In response to Ecology’s motion, PSA  
8 now also agrees that Issue 47 should be dismissed, as Ecology did make the required  
9 determination under the statute. *Young Decl., Ex. A at 93 (Killelea Dep., Vol. I)*. We grant  
10 summary judgment to Ecology and dismiss Issue No. 47 from this appeal.

11 8. [Issue No. 48] Is the permit’s failure to establish numeric water quality-based  
12 effluent limitations invalid?

13 This issue, also raised by PSA, presents the question of whether the ISGP must include  
14 numeric water quality based effluent limitations, under RCW 90.48.555. We conclude that  
15 Ecology is not required to include such numeric effluent limitations, with some exceptions. As  
16 discussed above, Ecology performed a generalized reasonable potential analysis on industrial  
17 stormwater discharges. The agency then determined that application of Best Management  
18 Practices (BMPs) would be effective in achieving compliance with water quality standards in  
19 most cases. *Young Decl., Ex. A at 93 (Killelea Dep., Vol. I)*. Having made these determinations,  
20 RCW 90.48.555 (3)(d) does not require Ecology to develop numeric effluent limitations, except

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1 for impaired water bodies, as required under RCW 90.48.555(7). *See Order on Summary*  
2 *Judgment (PSA's Fourth Motion for Summary Judgment), December 23, 2010.*

3 As we noted in our previous Order on Summary Judgment in this case, the iterative  
4 adaptive management process of the ISGP is required by RCW 90.48.555(8), and, in turn,  
5 requires permittees to take corrective actions to meet numerically-stated benchmarks. However,  
6 the Board has consistently held in the context of other general permit appeals that while NPDES  
7 permits must contain conditions to ensure water quality standards are met, this does not require  
8 numeric water quality-based effluent limitations (unless otherwise specifically required in  
9 relation to 303(d) listed impaired water bodies or some other authority). *Id.*

10 We grant summary judgment on Issue No. 48 to Ecology. In doing so, we note that the  
11 issues of the adequacy of the adaptive management requirements of the ISGP, as well as issues  
12 related to development of numeric effluent limitations for certain discharges to impaired water  
13 bodies, will go to hearing.

14 9. [Issue No. 56] Do the numeric effluent limits applicable to discharges into Section  
15 303(d) listed water bodies in Condition S6.C, Table 5, violate RCW 90.48.555?  
(West) Are the additional sampling requirements of Table 5 adequate to ensure  
16 protection of impaired bodies of water?

17 This issue raises the question of whether the numeric effluent limitation in Condition  
18 S6.C., Table 5, of the ISGP, which are applicable to 303(d) listed impaired water bodies, violate  
19 RCW 90.48.555(7)(a). Although there is confusion among the parties as to who raised this issue,  
the first part of the issue raises an identical issue to that presented in Issue No. 52, raised by PSA.

20 The Board addressed this question in the Order on Summary Judgment (PSA's Fourth Motion

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1 for Summary Judgment), December 23, 2010. In that decision we determined that there were  
2 material issues of disputed fact on the question of whether Ecology appropriately derived  
3 numeric water quality based effluent limitations for discharges to impaired water bodies, as  
4 required by RCW 90.48.555(7), or correctly omitted such limitations for certain parameters  
5 (dissolved oxygen, temperature, and fish tissue/bioassay). Accordingly, we deny summary  
6 judgment to Ecology on this issue, and it will proceed to hearing.<sup>4</sup>

7 10. [Issue No. 61] Is Condition S8.A of the permit vague, unreasonable and unlawful by  
8 requiring compliance with a prior expired permit?

9 This issue, raised by Boeing, asks whether Condition S8.A. of the ISGP is unlawfully  
10 vague because it requires the permittee to implement applicable levels of corrective action  
11 responses that had been required under the previous version of the ISGP. Boeing now states that  
12 this issue is moot. PSA states summary judgment should be granted to Ecology. In the absence  
13 of disputed facts or any opposition to Ecology's motion, Issue No. 61 is dismissed from the  
14 appeal.

15 11. [Issue No. 62] Are Conditions S8.C.4 and S8.D.4 of the permit invalid in requiring  
16 source control BMPs and treatment BMPs "with the goal of achieving the applicable  
17 benchmark" without defining the specific BMPs or level of adaptive management  
18 necessary to meet the stated "goal"?

19 This issue, raised by Boeing, asks whether the Level 2 and Level 3 corrective action  
20 provisions of Condition S8.C. and D. are invalid because they require source control and  
21 treatment BMPs with the goal of achieving compliance with benchmark values, but without

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<sup>4</sup> Ecology's motion did not address the second portion of Legal Issue No. 56, related to sampling plans, and we do not address it on summary judgment.

1 defining the specific BMP or level of adaptive management necessary to meet that goal. PSA  
2 agrees that summary judgment should go to Ecology on this issue.

3 As presented, this issue involves the purely legal question of whether Condition S8.,  
4 which sets forth the adaptive management scheme of the ISGP, must specify which BMPs a  
5 permittee must install to comply with the permit. Boeing additionally asserts that this issue  
6 involves a challenge to the implicit requirement that a permittee meet a benchmark value, when  
7 benchmarks are not numeric effluent limitations.

8 The Board concludes that it has addressed the specific issue presented in Legal Issue No.  
9 62 in other analysis in this opinion, and in its Order on Summary Judgment (PSA's Fourth  
10 Motion for Summary Judgment), dated December 23, 2010. There is no legal requirement for  
11 Ecology to define in the ISGP the precise BMPs a permittee must install under any given set of  
12 circumstances—to do so would be impossible. RCW 90.48.555(8) requires Ecology to include  
13 an adaptive management program in the ISGP, with certain minimum elements, including  
14 monitoring benchmarks, and documentation of remedial actions taken. Condition S8. is  
15 responsive to this requirement, and it need not detail BMPs in a more precise manner. Ecology  
16 correctly places the burden on the permittee to meet these benchmarks through implementation  
17 of that adaptive management response. We concluded in our December 23, 2010 Order on  
18 Summary Judgment that there are factual questions that preclude summary judgment on the  
19 adequacy of the adaptive management program, particularly as it relates to the extent of a  
20 permittee's obligations under the permit, the timelines and triggers for corrective actions, and

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1 how the permit will address failure to meet benchmarks, However, the question presented in  
2 Legal Issue No. 62 is a different legal question involving how specific Ecology must be in  
3 setting out the details of the adaptive management requirements. Because we conclude the ISGP  
4 sets out adequate detail in this regard, we grant summary judgment to Ecology on this issue.

5 12. [Issue No. 65] Are Conditions S8.C.4, S8.D.4 and S10 of the permit invalid by  
6 requiring a demonstration as to the feasibility and necessity for additional BMPs?

7 This issue, raised by Boeing, raises the question of whether the ISGP is unlawful or  
8 invalid because it does not define the circumstances under which Ecology may grant waivers  
9 from certain aspects of the corrective action levels under Condition S8. Boeing complains that  
10 the ISGP does not set forth any explanation or criteria about what would constitute either “not  
11 feasible” or “not necessary” under Condition S8 Level 2 or 3 corrective action responses. PSA  
12 does not oppose giving summary judgment to Ecology on this issue. Ecology asserts that it  
13 cannot be expected to define all terms in the permit, and that when a waiver is ultimately  
14 granted, there will be comment and appeal opportunities, protecting the public and permittees  
15 from an abuse of discretion by Ecology.

16 It is undisputed that Ecology continues to work on guidelines or criteria for granting  
17 waivers under this section of the permit. *Doll Decl., Ex. B. at 442 (Killelea Dep., Vol. III)*. The  
18 Board considered arguments advanced by PSA related to the waiver provisions in an earlier  
19 summary judgment motion. The Board concluded in the December 23, 2010 Order on Summary  
20 Judgment as follows: “[T]estimony must also clarify how these adaptive response levels are  
21 triggered, *how waiver provisions apply*, and whether the calendar year system will result in

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1 unduly long delays in implementing corrective action BMPs, such that the adaptive management  
2 term is invalid.” (emphasis added.) *Order on Summary Judgment, December 23, 2010 at 21.*

3 We deny summary judgment to Ecology on this issue, as the waiver provisions go to the overall  
4 adequacy of the adaptive management requirements of the permit, and we have concluded that  
5 issues of fact preclude summary judgment. This issue will proceed to hearing.

6 13. [Issue No. 66] Are the provisions of S9.F concerning public access to stormwater  
7 pollution prevention plans arbitrary and capricious, insufficiently clear or otherwise  
8 invalid?

9 This issue, raised by Boeing, presents the question of whether Condition S9.F. is  
10 unlawful by requiring public access to stormwater pollution prevention plans. No party,  
11 including Boeing, opposes summary judgment on this issue at this time. Ecology correctly  
12 points out that the Board has rejected a similar argument in other cases, concluding the public  
13 has a legitimate interest in the Stormwater Pollution Prevention Plans. *Puget Soundkeeper  
Alliance v. Ecology*, PCHB Nos. 05-150, 05-151, 06-034, 06-040 (January 26, 2007), COL 28.

14 This issue is dismissed.

15 14. [Issue No. 67] Is Condition S10.C of the permit vague, unreasonable and unlawful by  
16 requiring application of AKART to achieve water quality standards?

17 Boeing raises this issue, asserting that while state law requires the ISGP to require  
18 compliance with AKART (RCW 90.48.520), it is unclear how permittees, agency inspectors, and  
19 third parties are to define these requirements. Boeing’s argument also restates its position that it  
20 is unreasonable for Ecology to require compliance or implementation of BMPs beyond those set  
21 out in the Stormwater Management Manuals. PSA agrees with Ecology’s motion on this issue.

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1 We conclude that the permit condition at issue, S10.C. (p. 40) is a correct statement of  
2 state law, and that the permit term is not invalid. See RCW 90.48.010, .520. We have concluded  
3 above that Ecology may, as part of the adaptive management regime, require implementation of  
4 BMPs beyond those specified in the Manuals. Accordingly, summary judgment is granted to  
5 Ecology on Legal Issue No. 67, and it is dismissed from the appeal.

6 ORDER

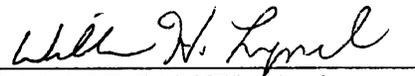
7 The Board **GRANTS** summary Judgment to Ecology on Legal Issues No. 15, 24, 25, 31,  
8 46, 47, 48, 62, 63, 66, and 67. The Board **DISMISSES** Legal Issues No. 44 and 61 for lack of  
9 jurisdiction, and as moot, respectively. The Board **DENIES** summary judgment to Ecology on  
10 Legal Issues No. 56 and 65, and those issues will proceed to hearing.

11 DONE this 5<sup>th</sup> day of January, 2011.

12 POLLUTION CONTROL HEARINGS BOARD

13   
14 KATHLEEN D. MIX, Presiding

15   
16 ANDREA MCNAMARA DOYLE, Chair

17   
18 WILLIAM H. LYNCH, Member

19  
20  
21 ORDER ON SUMMARY JUDGMENT  
LEGAL ISSUES NO. 15, 24-25, 31, 44, 46-48,  
56, 61-62, and 65-67.  
Ecology's Motion for Summary Judgment  
Regarding Issues Raised By Appellants PSA and Boeing  
PCHB Nos. 09-135 through 09-141

## APPENDIX 4

Order on Summary Judgment (Legal Issues  
No. 7, 9, 11, 41, 48, 49, 52, 58, 59, 60)  
(PSA's Fourth Motion for Summary  
Judgment)

*Copper Development Association, Inc., et al.*  
*v. Ecology, et al.*, PCHB Nos. 09-135 through  
09-141

December 23, 2010



1 on Issues No. 7, 9, 11, 41, 48, 49, 52, 58, 59, and 60 from the Pre-Hearing Order. This is PSA's  
2 Fourth Motion for Summary Judgment on various issues raised by the appeal. Respondent  
3 Department of Ecology, Appellant The Boeing Company (Boeing), and Intervenor  
4 Weyerhaeuser NR Company (Weyerhaeuser) oppose the motion for summary judgment.  
5 Attorney Richard A. Smith represents Appellant PSA. Assistant Attorney General Thomas J.  
6 Young and Senior Counsel Ronald L. Lavigne represent Respondent Ecology. Attorney James  
7 A. Tupper represents Appellant Boeing. Attorney Charles Douthwaite represents Weyerhaeuser.  
8 Other Appellants and Respondent Port of Olympia did not participate in this motion.

9 The Board heard oral argument on December 6, 2010, on the issues presented by PSA's  
10 Fourth Motion for Summary Judgment. The motion before the Board presents three issues,  
11 including 1) the proper interpretation and application of RCW 90.48.555(7) regarding numeric  
12 effluent limitations for discharges to impaired waters, 2) whether aspects of the effluent  
13 limitations in the General Permit violate antibacksliding provisions of the Clean Water Act  
14 (CWA), and 3) whether the corrective actions provisions of the ISGP ensure discharges will not  
15 contribute to violations of water quality standards. PSA asserts that these issues are  
16 encompassed within the following more specific issues set out in the Pre-Hearing Order:

- 17 1. [Issue No. 7] Are the Permit's effluent limitations consistent with federal and  
state law requirements?
- 18 2. [Issue No. 9] Are the Permit's adaptive management requirements (corrective  
19 actions) inconsistent with state law?
- 20 3. [Issue No. 11] Is the permit consistent with the requirements for general  
industrial stormwater permits under RCW 90.48.555?

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- 4. [Issue No. 41] Are the benchmarks, effluent limitations, monitoring and specific sampling requirements in Condition S5.A of the permit invalid or arbitrary and capricious?
- 5. [Issue No. 48] Is the permit's failure to establish numeric water quality-based effluent limitations invalid?
- 6. [Issue No. 49] Are the provisions of S5.B.5 concerning benchmarks for the timber and paper products industries invalid?
- 7. [Issue No. 52] Is the permit's omission and/or limited application of numeric water quality-based effluent limitations for discharges to some categories of 303(d)-listed water bodies inconsistent with the requirements of RCW 90.48.555 or otherwise invalid?
- 8. [Issue No. 58] Are the provisions of S8 concerning timelines and triggers for corrective actions arbitrary and capricious or otherwise invalid?
- 9. [Issue No. 59] Are the provisions of S8 concerning waivers from the requirements of Level 2 and Level 3 responses arbitrary and capricious or otherwise invalid?
- 10. [Issue No. 60] Are the provisions of S8.D concerning the requirements for treatment BMPs invalid?

Board Members Kathleen D. Mix, Presiding, Andrea McNamara Doyle, Chair, and

William H. Lynch, Member, reviewed and considered both the written record and oral arguments before the Board on this motion, including the following:

- 1. PSA's Fourth Motion for Summary Judgment, with Exhibits 1-25.
- 2. Declaration of Richard R. Horner, Ph.D, with Exhibit 1.
- 3. Department of Ecology's Response to PSA's Fourth Motion for Summary Judgment.
- 4. Declaration of Thomas J. Young in Support of Ecology's Response to PSA's Fourth Motion for Summary Judgment, with Exhibit A.
- 5. Declaration of Jeff Killelea in Support of Ecology's Response, with Exhibits A-C.
- 6. The Boeing Company's Response to PSA's Fourth Motion for Summary Judgment.

- 1 7. Declaration of Bradford Doll in Support of Boeing's Response to PSA's Fourth
- 2 Motion for Summary Judgment, with Exhibits A-Q.
- 3 8. Weyerhaeuser NR Company's Response in Opposition to PSA's Fourth Motion for
- 4 Summary Judgment.
- 5 9. Reply Supporting PSA's Fourth Motion for Summary Judgment, with Attachments.

#### 6 BACKGROUND

7 The ISGP is a National Pollutant Discharge Elimination System (NPDES) permit  
8 required under both the federal Clean Water Act, and state law authority which requires a  
9 discharge permit for the disposal of any waste material into waters of the state by any type of  
10 commercial or industrial operation. 33 U.S.C. § 1342(p)(2)(B); RCW 90.48.160. The ISGP is a  
11 statewide permit that applies to facilities conducting industrial activities that discharge  
12 stormwater to surface waters or to a storm sewer system that drains to surface waters. The ISGP  
13 is also a State Waste Discharge Permit that operates to protect groundwater from stormwater  
14 discharged or infiltrated to groundwater under the authority of RCW Chapter 90.48. *Condition*  
15 *Sl.E (p. 10); Draft Fact Sheet (p. 60)*. The ISGP, like other general permits, allows Ecology to  
16 regulate and administer a single permit for multiple industries that discharge to waters of the  
17 State, rather than issuing individual NPDES discharge permits to multiple industrial dischargers.  
18 Ecology issued the ISGP on October 21, 2009, with an effective period of five years, from  
19 January 1, 2010, to January 1, 2015. This version of the General Permit replaces the 2004 ISGP,

1 which was re-issued without changes on August 15, 2007, and October 15, 2008. 2010 ISGP;

2 *Draft Fact Sheet.*<sup>1</sup>

3 The General Permit identifies a wide range of industrial activities that require permit  
4 coverage, and specifies how currently permitted, and unpermitted existing and new facilities  
5 should obtain permit coverage. The General Permit requires each facility to maintain and  
6 implement a Stormwater Pollution Prevention Plan (SWPPP), which is a site-specific document  
7 addressing several critical elements of stormwater management. The SWPPP must include a site  
8 map, a detailed assessment of the facility, a detailed description of Best Management Practices  
9 (BMPs) selected to eliminate or reduce the potential for contamination of stormwater and  
10 prevent water quality violations, and a sampling plan. The General Permit also defines  
11 benchmarks, effluent limitations and other specific, applicable sampling requirements.  
12 Additional terms set out requirements for discharges to 303(d)-listed water bodies or waters  
13 subject to total maximum daily loads (TMDLs). Other permit terms address inspections,  
14 corrective actions, and reporting and record keeping requirements, among other terms.

## 15 ANALYSIS

16 Summary judgment is a procedure available to avoid unnecessary trials on formal issues  
17 that cannot be factually supported and could not lead to, or result in, a favorable outcome to the  
18 opposing party. *Jacobsen v. State*, 89 Wn.2d 104, 569 P.2d 1152 (1977). The summary  
19 judgment procedure is designed to eliminate trial if only questions of law remain for resolution.

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20 <sup>1</sup> The 2010 ISGP and accompanying Draft Fact Sheet (dated June 3, 2009) are part of the Board's ongoing record in  
21 this case, filed with the Notices of Appeals filed by parties, or as attachments to a prior Summary Judgment Motion.  
The Board will also reference to Ecology's Stormwater Management Manuals, which are referenced in the General  
Permit, and available for review at Ecology's website.

1 Summary judgment is appropriate when the only controversy involves the meaning of statutes,  
2 and neither party contests the facts relevant to a legal determination. *Rainier Nat'l Bank v.*  
3 *Security State Bank*, 59 Wn. App. 161, 164, 796 P.2d 443 (1990), review denied, 117 Wn.2d  
4 1004 (1991).

5 The party moving for summary judgment must show there are no genuine issues of  
6 material fact and the moving party is entitled to judgment as a matter of law. *Magula v. Benton*  
7 *Franklin Title Co., Inc.*, 131 Wn.2d 171, 182, 930 P.2d 307 (1997). A material fact in a  
8 summary judgment proceeding is one that will affect the outcome under the governing law.  
9 *Eriks v. Denver*, 118 Wn.2d 451, 456, 824 P.2d 1207 (1992). In a summary judgment, all facts  
10 and reasonable inferences must be construed in favor of the nonmoving party. *Jones v. Allstate*  
11 *Ins. Co.*, 146 Wn.2d 291, 300, 45 P.3d 1068 (2002). Summary judgment may also be granted to  
12 the non-moving party when facts are not in dispute. *Impeccoven v. Department of Revenue*, 120  
13 Wn.2d 357, 365, 842 P.2d 470 (1992).

14 The Board will review the terms of a General Permit to determine if it is "invalid in any  
15 respect," and whether it is consistent with applicable legal requirements. WAC 371-08-540(2);  
16 *PSA v. Ecology*, PCHB No. 02-162, (Order Granting Summary Judgment, June 6, 2003). The  
17 Board concludes that none of the issues addressed in PSA's Fourth Motion for Summary  
18 Judgment can be resolved on motions, as there are material issues of disputed fact. The Board  
19 addresses each of the issues raised by PSA's motion below.

1           1. Water Quality-Based Effluent Limitations for Impaired Water Bodies--Compliance  
2           with RCW 90.48.555(7)

3           Background

4           The ISGP contains both technology-based and water quality-based effluent limitations,  
5           which are two different kinds of restrictions on the quantity, rate, and concentration of  
6           constituents which are discharged in the stormwater from industrial facilities into water bodies.  
7           Technology-based limitations reflect both the technological and economic capability of  
8           permittees to control pollutants in their discharges. Such limitations also reflect the state law  
9           requirement to use "all known, available and reasonable methods of prevention, control, and  
10          treatment" (AKART). Water quality-based effluent limitations, often more stringent, are  
11          required by the CWA, and in Washington, are based on compliance with water quality standards  
12          for surface and groundwater, sediment quality standards, and toxics criteria. *Fact Sheet, pp. 38-*  
13          *42.*

14          NPDES permits may express these effluent limitations as either numeric or, if numeric  
15          limits are considered "infeasible," non-numeric narrative standards." 40 C.F.R. § 122.44(k)(3).  
16          Both EPA and Ecology determined that it was not feasible to calculate numeric effluent  
17          limitations for many of the discharges covered under the ISGP, and therefore chose to adopt non-  
18          numeric narrative limitations. This determination was based largely on the intermittent and  
19          variable nature of stormwater, which is characterized by very high flows occurring over  
20          relatively short time intervals, and which contains a variety of pollutants, the extent, source, and  
21          nature of which varies considerably. Non-numeric, technology-based limits are reflected in

1 those conditions of the ISGP, for example, that require implementation of a Stormwater  
2 Management Plan, and implementation of Best Management Practices to prevent and control  
3 stormwater runoff. Condition S3. (pp. 13-21), *Fact Sheet*, pp. 38-42.

4 In response to both federal regulations and state law, Ecology also made a determination  
5 that stormwater discharges from industrial facilities, on a general and ongoing basis, may cause,  
6 or have a reasonable potential to cause a violation of water quality standards for a variety of  
7 pollutant parameters. As a result of this so-called "reasonable potential analysis," Ecology also  
8 developed water quality-based effluent limitations to control industrial discharges in order to  
9 meet applicable water quality standards, in addition to the technology-based limitations. *Fact*  
10 *Sheet*, pp. 48-58. One such water quality-based effluent limitation for the ISGP is contained at  
11 Condition S6.C. (pp. 30-33) related to discharges to water bodies listed as impaired according to  
12 33 U.S.C. § 1313(d) of the Clean Water Act (CWA) (referred to as 303(d)-listed water bodies).  
13 *Fact Sheet*, pp. 49-51. These numeric effluent limitations are set out at Condition S6.C., Table 5,  
14 and also implement a requirement of state law (RCW 90.48.555(7)). Other water quality-based  
15 limitations are contained in Condition S6.D., which requires facilities to comply with TMDLs;  
16 Conditions S5.A. and B., and S8., which require facilities that exceed water quality-based  
17 numeric benchmark values to implement escalating levels of source control and treatment BMPs  
18 in order to meet water quality standards; Condition S10, which prohibits discharges that violate  
19 listed water quality surface, groundwater, sediment standards, or human health-based criteria;  
20 and finally, Condition S12., which addresses solid and liquid waste management. *Id.*

1 In developing the water quality-based numeric effluent limitations for discharges to  
2 303(d)-listed water bodies (set out at Condition S6.), Ecology applied a critical assumption that  
3 limited the type and extent of numeric water quality-based effluent limitations an industrial  
4 facility would have to comply with. *Fact Sheet, pp. 49-50*. This assumption is stated as follows:  
5 “Ecology applied the basic assumption that numeric effluent limitations would only be applied to  
6 facilities discharging to impaired water bodies that were ‘listed’ due to pollutants that are  
7 typically present in industrial stormwater discharges.” *Id.* In other words, Ecology read the  
8 applicable statute (RCW 90.48.555(7)) to require numeric effluent limits only if the pollutants  
9 causing the impairment reasonably could be expected to be a component of stormwater  
10 discharges associated with industrial activity—or “only when a reasonable potential to violate  
11 water quality standards exists.” *Ecology’s Response at pp. 2-3*.

12 Based on this assumption, Ecology did not include a numeric effluent limitation for  
13 discharges to water bodies listed as impaired for temperature and low dissolved oxygen. Water  
14 bodies listed as impaired due to contaminated fish tissue or bioassessment are also not subject to  
15 a numeric effluent limitation. While Ecology’s decision to omit numeric effluent limitations for  
16 these parameters rested in part on the assumption discussed above, it also was based on a number  
17 of other factors, or varying rationale, including the nature of the impairment, Ecology’s ability to  
18 come up with effluent limitations based on either statewide or site-specific data, and perceived  
19 technical difficulty in establishing effluent limitations for some discharges. *PSA Motion, Ex. 1*  
20 *(Killelea Dep., pp. 295-310); Ex 4*. The ISGP sets a numeric effluent limitation for discharges  
21 to water bodies impaired for fecal coliform, but only if the industrial facility is a potential source

1 of bacteria. With the exception of the circumstances noted above, the ISGP then sets numeric  
2 effluent limitations and sampling frequency applicable to discharges to 303(d)-listed water  
3 bodies at Table 5 of Condition S6.C. (pp. 30-32). *Fact Sheet, pp. 49-53.*

4 Analysis

5 In its first issue in the Fourth Motion for Summary Judgment, PSA argues that Ecology's  
6 failure to impose numeric water quality-based effluent limitations for discharges to water bodies  
7 that are 303(d)-listed for dissolved oxygen, temperature, and fish tissue/bioassay violates state  
8 law. PSA relies on the language of RCW 90.48.555 which sets out a long list of requirements  
9 applicable to development of effluent limitations for the ISGP, and in particular RCW  
10 90.48.555(7). The initial sections of that statute state as follows:

11 The provisions of this section apply to the construction and industrial  
12 storm water general permits issued by the department pursuant to the  
federal clean water act, 33 U.S.C. Sec. 1251 et seq., and this chapter.

13 (1) Effluent limitations shall be included in construction and industrial  
14 storm water general permits as required under the federal clean water act,  
15 33 U.S.C. Sec. 1251 et seq., and its implementing regulations. In  
16 accordance with federal clean water act requirements, pollutant specific,  
17 water quality-based effluent limitations shall be included in construction  
and industrial storm water general permits *if there is a reasonable  
18 potential to cause or contribute to an excursion of a state water quality  
19 standard.*

(2) Subject to the provisions of this section, both technology and water  
20 quality-based effluent limitations may be expressed as:

19 (a) Numeric effluent limitations;

20 (b) Narrative effluent limitations; or

1 (c) A combination of numeric and narrative effluent discharge  
2 limitations.

3 (3) The department must condition storm water general permits for  
4 industrial and construction activities issued under the national pollutant  
5 discharge elimination system of the federal clean water act to require  
6 compliance with numeric effluent discharge limits when such discharges  
7 are subject to:

8 (a) Numeric effluent limitations established in federally adopted,  
9 industry-specific effluent guidelines;

10 (b) State developed, industry-specific performance-based numeric  
11 effluent limitations;

12 (c) Numeric effluent limitations based on a completed total  
13 maximum daily load analysis or other pollution control measures;  
14 or

15 (d) A determination by the department that:

16 (i) The discharges covered under either the construction or  
17 industrial storm water general permits have a reasonable  
18 potential to cause or contribute to violation of state water  
19 quality standards; and

20 (ii) Effluent limitations based on nonnumeric best  
21 management practices are not effective in achieving  
compliance with state water quality standards.

RCW 90.48.555(1)-(3) (*emphasis added*).

A later section of this same statute, RCW 90.48.555(7) addresses effluent limitations for  
existing discharges to water bodies listed as impaired under the CWA. It states as follows:

(7)(a) By November 1, 2009, the department shall modify or reissue the industrial storm  
water general permit *to require compliance with appropriately derived numeric water  
quality-based effluent limitations for existing discharges to water bodies listed as*

1 impaired according to 33 U.S.C. Sec. 1313(d) (Sec. 303(d) of the federal clean water act,  
2 33 U.S.C. Sec. 1251 et seq.).

3 (b) The industrial storm water general permit must require permittees to comply  
4 with appropriately derived numeric water quality-based effluent limitations in the  
5 permit, as described in (a) of this subsection, by no later than six months after the  
6 effective date of the modified or reissued industrial storm water general permit.

7 (c) For permittees that the department determines are unable to comply with the  
8 numeric water quality-based effluent limitations required by (a) of this subsection,  
9 within the timeline established in (b) of this subsection, the department shall  
10 establish a compliance schedule as follows:

11 (i) Any compliance schedule provided by the department must require  
12 compliance as soon as possible, and must require compliance by no later  
13 than twenty-four months, or two complete wet seasons, after the effective  
14 date of the industrial storm water general permit. For purposes of this  
15 subsection (7)(c)(i), "wet seasons" means October 1st through June 30th.

16 (further sub sections not included).

17 RCW 90.48.555(7) (*emphasis added*).

18 PSA argues that RCW 90.48.555(7) requires that the ISGP include appropriately derived  
19 numeric water quality-based effluent limitations for all discharges to water bodies that are  
20 included on the 303(d) list as impaired for any parameter, including those impaired for dissolved  
21 oxygen, temperature, and fish tissue/bioassay. PSA asserts that Ecology created an  
impermissible exception to the requirement set out in RCW 90.48.555(7), by requiring effluent  
limits only if the pollutants causing the impairment reasonably could be expected to be a  
component of stormwater discharges associated with industrial activity. PSA points out that  
water bodies that are 303(d) listed, by definition, do not meet water quality standards, and that it  
is fair to assume the discharges of pollutants of concern present a reasonable likelihood of

1 contributing to the impairment. PSA reasons that until a TMDL is finalized, thereby bringing a  
2 303(d)-listed water body off the impaired list, there are no grounds to relieve any potential  
3 contributors of responsibility, as Ecology has done with its “exception.” PSA also asserts that  
4 even if Ecology could correctly read an “exception” into the statute, Ecology can “appropriately  
5 derive” numeric effluent limitations for dissolved oxygen, temperature and fish tissue/bioassay,  
6 but has failed to do so.

7 In response to PSA’s argument, Ecology argues that, under RCW 90.48.555(1), it may  
8 require water quality-based numeric effluent limits only where there is a “reasonable potential  
9 for the discharge to cause or contribute to a violation of water quality standards,” and if so, then  
10 only if Ecology can “appropriately derive” such limitation(s). Ecology states that basic  
11 principles of statutory construction support reading the applicable statute, RCW 90.48.555(7), in  
12 context with the rest of the statute and with the Clean Water Act, both of which call for an initial  
13 determination of “reasonable potential” to violate water quality standards prior to imposing a  
14 regulatory standard. Ecology argues that the Board must give deference to the agency’s  
15 technical expertise in deciding how to set effluent limitations for particular parameters of  
16 concern. In that regard, Ecology states that with respect to each of the three parameters at issue,  
17 there are good and valid reasons why the agency could not define an appropriate numeric  
18 effluent limitation.

19 Boeing also opposes summary judgment on this issue, arguing among things, that the  
20 applicable statute directs Ecology to require compliance with “appropriately derived” numeric  
21 water quality-based effluent limitations for discharges to impaired water bodies. RCW

1 90.48.555(7). Boeing asserts that this language gives Ecology discretion to determine what  
2 constitutes an appropriate water quality-based effluent limitation for impaired water bodies.  
3 Boeing also urges the Board to develop a full factual record as it considers whether Ecology  
4 acted consistently with the statute to “appropriately derive” effluent limitations.

5 Like the courts, our primary duty in interpreting any statute is to discern and implement  
6 the intent of the Legislature. *State v. J.P.*, 149 Wn.2d 444, 450, 69 P.3d 318 (2003). Our  
7 starting point must always be the statute’s plain language and ordinary meaning. *Id.* When the  
8 plain language is unambiguous, admitting of only one meaning, the legislative intent is apparent,  
9 and the Board cannot construe the statute otherwise. *Id.* We cannot add words or clauses to an  
10 unambiguous statute when the legislature has chosen not to include that language. *Id.*

11 Consistent with such precedent, the Board first concludes that RCW 90.48.555(7) clearly  
12 and unambiguously requires Ecology to include numeric water quality-based effluent limitations  
13 for discharges to impaired water bodies in the ISGP. In doing so, Ecology must require  
14 compliance with “appropriately derived” numeric water quality-based effluent limitations for  
15 discharges to 303(d)-listed water bodies. The statute dealing with discharges to impaired water  
16 bodies does not allow Ecology to exclude, based on the “reasonable potential” language of an  
17 earlier section of the statute, certain types of discharges to impaired water bodies. Rather, it  
18 directs to Ecology to set “appropriately derived” numeric effluent limitations for discharges to  
19 impaired waters.

20 To the extent that this requirement conflicts with, or otherwise raises a question about,  
21 RCW 90.48.555(1), which requires a determination by Ecology of “reasonable potential”

1 whether certain pollutants cause or contribute to an excursion of water quality standards, we  
2 conclude that sub-section (7) is the more specific statute, and prevails in defining Ecology's  
3 obligations to address effluent limitations for impaired water bodies. *See Wright v. Miller*, 93  
4 Wn. App. 189, 198, 963 P.2d 934 (1998). It is undisputed that Ecology made an overarching  
5 conclusion that industrial stormwater discharges have a "reasonable potential" to cause, or  
6 contribute to excursions of water quality standards. *Fact Sheet*, p. 48. However, nothing in the  
7 language of sub-section (7) calls for a second level of "reasonable potential" analysis when it  
8 comes to discharges to impaired water bodies. The statutory requirement in sub-section (7)  
9 embodies the assumption that impaired water bodies do not meet water quality standards, and  
10 further discharges will continue to contribute to such impairment. We conclude that Ecology  
11 impermissibly crafted an exception or assumption onto sub-section (7), and then used it, at least  
12 in part, as a basis to omit an effluent limitation for dissolved oxygen, temperature and fish  
13 tissue/bioassay impaired water bodies.

14 Even if we were to accept Ecology's reading of sub-section (7) to require an initial  
15 determination of whether the "listed" pollutants are typically present in industrial stormwater  
16 discharges, we would conclude there are questions of fact as to Ecology's decision to exclude  
17 dissolved oxygen, temperature, and fish tissue/bioassay from further efforts to define numeric  
18 effluent limitations. PSA supports its argument that these parameters should be subject to  
19 numeric effluent limitations with references that suggest industrial stormwater discharges, at  
20 least for some industry groups, are likely to include such parameters. *See Fact Sheet at 8, 14, 20,*  
21 *34; PSA Motion, Ex. 14 (Herrera Data Analysis Report); Horner Decl.*

1           Although we disagree with Ecology’s crafting of the “reasonable potential” language  
2 onto sub-section (7) of the statute, there remains the question of whether Ecology “appropriately  
3 derived” numeric effluent limitations for the ISGP under RCW 90.48.555(7), and whether  
4 Ecology could omit effluent limitations for the three parameters of concern on the basis that it  
5 cannot derive appropriate limitations. In this regard, we note that PSA correctly argues that the  
6 statute does not state that Ecology will require numeric water quality-based effluent limitations,  
7 “where appropriate.” It requires appropriately derived limitations.

8           The parties devote considerable argument as to why Ecology’s decision was valid or not  
9 with respect to omission of effluent limits for dissolved oxygen, temperature, and fish  
10 tissue/bioassay. However, the Board concludes that these arguments raise material issues of  
11 disputed fact, and that summary judgment must be denied on this issue. The question for hearing  
12 is whether Ecology established “appropriately derived” numeric water quality-based effluent  
13 limitations for discharges to impaired water bodies, as required by RCW 90.48.555(7). Implicit  
14 in this question is the issue of whether Ecology can, based on this same language, omit a numeric  
15 effluent limitation for certain parameters altogether, as it has with dissolved oxygen,  
16 temperature, and fish tissue/bioassay, on the basis that an effluent limitation cannot be  
17 appropriately derived. This issue will proceed to hearing.

18           2. Water Quality-Based Effluent Limitations for Dissolved Oxygen--Antibacksliding

19           Issues

20           PSA asserts that two aspects of the ISGP are less stringent than the previous permit,  
21 thereby violating the antibacksliding prohibition of the CWA, 33 U.S.C § 1342(o). First, PSA

1 argues that the previous permit contained a narrative effluent limitation, in the form of numeric  
2 benchmarks and related corrective actions, for discharges to water bodies 303(d) –listed as  
3 impaired for dissolved oxygen. PSA asserts that approximately 80 permittees were subject to  
4 such benchmarks under the old permit, while the current permit has no comparable requirement.  
5 PSA asserts that Ecology has changed the existing standard to a benchmark that is based on an  
6 unsupported conversion ratio applicable to chemical oxygen demand (COD) and biochemical  
7 oxygen demand (BOD). *Horner Decl. at 10-11.* PSA asserts that this benchmark is less  
8 demanding than the one it replaced, and will result in exceedances of the water quality standards.  
9 *Id.*

10 PSA's second backsliding argument relates to the benchmark applicable to permittees in  
11 the lumber and wood products industry or in the paper and allied products industry. However, in  
12 its reply brief, PSA concedes that factual issues concerning the relative stringency of benchmarks  
13 applicable to these industries precludes summary judgment, and the issue must proceed to  
14 hearing.

15 Ecology asserts that under the prior permit, dischargers to impaired water bodies were  
16 required to monitor for the pollutant for which the water body was impaired, and were required  
17 to meet benchmarks for that parameter. However, Ecology concluded that the benchmark in the  
18 earlier version of the ISGP did not make sense given how the dissolved oxygen standard applies  
19 in the receiving water. Thus, because the standard was not technically sound, Ecology asserts it  
20 changed the nature of the benchmark in the current version of the permit to one stated as a ratio  
21 of COD to BOD, resulting in a COD benchmark of 120mg/L, for some industries. Jeff Killelea,

1 the lead permit writer for the ISGP, states that COD benchmark “is not less stringent than the  
2 previous ISGP’s BOD benchmark,” disagreeing with PSA’s expert. *Killelea Decl. at 6*. Ecology  
3 argues that there is no backsliding because they either acted to correct a problem, or set a new,  
4 and comparable, standard in the current ISGP.

5 The Board concludes that there are disputed facts on the question of whether the new  
6 standard and/or benchmark of the ISGP is less stringent than the previous permit, and whether  
7 the replacement standard constitutes backsliding. If the standard is less stringent, there are also  
8 questions of fact as to whether or not Ecology acted properly to correct a “technical mistake,”  
9 which Ecology asserts is allowed under 33 U.S.C. § 1342(o)(2)(B)(ii). The Board needs further  
10 factual development of issues surrounding the use of a ratio of COD to BOD as an appropriate  
11 standard, and is left with questions that preclude ruling on this issue as a matter of law. We  
12 therefore deny summary judgment to PSA on this issue.

13 3. Adequacy of the Corrective Action/Adaptive Management Process

14 Background

15 The ISGP is required by state law to include “an enforceable adaptive management  
16 mechanism that includes appropriate monitoring, evaluation, and reporting.” RCW  
17 90.48.555(8). At a minimum, the adaptive management mechanisms must include an indicator,  
18 such as monitoring benchmarks, monitoring, review and revisions to stormwater pollution  
19 prevention plans, documentation of remedial actions taken, and reporting to Ecology. RCW  
20 90.48.555(8)(a)(i)-(v).

1 Ecology implemented this requirement through Condition S5.A. and B. (benchmarks,  
2 effluent limitations), (pp. 24-29), and Condition S8. (corrective actions), (pp. 34-36) of the ISGP.  
3 Condition S8. is a non-numeric, narrative effluent limitation that requires facilities that exceed  
4 water quality-based numeric benchmarks (Condition S5.A. and B.) to undertake incremental  
5 revisions to the facility stormwater pollution prevention plan (SWPPP), and implement BMPs to  
6 correct benchmark exceedances. *Fact Sheet at 54-55.* As Ecology has pointed out, benchmarks  
7 themselves are the numeric component of a narrative effluent limitation that also includes the  
8 corrective actions and the adaptive management process set out in Condition S8. The ISGP  
9 requires escalating levels of response (Level 1, 2, or 3), depending on the number of times a  
10 facility exceeds a benchmark in a given time frame. *Id.* Ecology asserts that “the plain language  
11 of Condition S8. requires permittees to continue taking corrective action to meet benchmarks.”  
12 *Ecology Response at 11.*

13 Analysis

14 PSA’s third issue in this motion seeks summary judgment on several aspects of the  
15 benchmark and corrective action provisions of the ISGP. PSA argues that the corrective action  
16 provisions of S8. are not adequate to ensure that the benchmarks of Condition S5.A. and B. will  
17 be attained, because the permit does not expressly require attainment of benchmarks, and there  
18 are loopholes in the corrective action, or adaptive management responses. More specifically,  
19 PSA argues that nothing in Condition S8. requires that the permittee ever attain the benchmarks,  
20 that it fails to specify when corrective actions begin, and that the waiver provisions are unlawful  
21 and allow for violations of water quality standards. PSA also asserts that the adaptive

1 management scheme includes ambiguities, particularly in the Level 3 response requirements, that  
2 are impermissibly vague. Finally, PSA complains that the calendar year counting of benchmark  
3 exceedances, combined with footnote 4 of Condition S8. (p. 35) (limiting when a facility must  
4 start a Level 3 response after a Level 2 response is triggered), results in a system where a  
5 permittee can never reach the more rigorous Level 3 response, and therefore the adaptive  
6 management scheme is seriously flawed and invalid.

7 Ecology responds to PSA's arguments by pointing out that benchmarks are not numeric  
8 effluent limits, but that they do trigger corrective actions, including implementation of BMPs,  
9 with the goal of meeting the benchmark, and the requirement to continue taking corrective action  
10 to meet the benchmark. *Ecology Response at 10-11*. Ecology explains other requirements of the  
11 adaptive management scheme, and asserts that the ISGP complies with requirements this Board  
12 set out in its decision on review of the Boatyard General Permit, *PSA v. Ecology*, PCHB Nos. 05-  
13 150-151, 06-034, 06-040 (2007) or alternatively, that Ecology can issue administrative orders to  
14 noncompliant facilities if benchmarks are not met. *Ecology Response at 11-12*. Boeing responds  
15 that PSA is attempting to turn benchmarks into numeric effluent limitations, a position rejected  
16 by this Board in other cases. Boeing urges the Board to have an evidentiary hearing on the  
17 question of the adequacy of the adaptive management requirements of the ISGP, including issues  
18 regarding the extent of a permittee's obligations once a Level 3 response is triggered under the  
19 terms of the permit.

20 The Board agrees with Boeing that this issue must go to hearing, and therefore denies  
21 PSA's motion for summary judgment on issues related to the adequacy of the adaptive

1 management program set out in the ISGP. As we have concluded in review of several other  
2 general permit challenges involving the adaptive management and associated benchmark  
3 standard, issues of fact are involved in assessing the full extent of a permittee's obligation under  
4 the general permit, and understanding the triggers and timelines set forth for corrective actions.  
5 This seems particularly true in this case, where after oral argument, the Board was left with  
6 substantial questions as to the manner in which the corrective actions were triggered, how a  
7 permittee would move through the corrective action response levels under the ISGP, and to what  
8 extent or in what manner the ISGP addresses the possibility of a permittee failing to meet  
9 benchmarks despite implementing various levels of corrective action. The referenced footnote 4  
10 (p. 35), related to when a Level 3 corrective action must start in relation to the implementation of  
11 a Level 2 response, is confusing at best, and potentially compromises the effectiveness of the  
12 permit's escalating adaptive management scheme. Testimony at hearing is necessary to clarify  
13 the meaning and application of the footnote. Testimony must also clarify how these adaptive  
14 response levels are triggered, how waiver provisions apply, and whether the calendar year  
15 system will result in unduly long delays in implementing corrective action BMPs, such that the  
16 adaptive management term is invalid.

17 Finally, although we deny summary judgment on all issues related to the adaptive  
18 management process of the ISGP, some clarification on the issue of benchmarks and adaptive  
19 response mechanisms may be helpful to the parties, given arguments advanced on summary  
20 judgment. The iterative adaptive management process of the ISGP is required by RCW  
21 90.48.555(8), and, in turn, requires permittees to take corrective actions to meet benchmarks.

1 The Board has consistently held in the context of other general permit appeals that while NPDES  
2 permits must contain conditions to ensure water quality standards are met, this does not require  
3 numeric water quality-based effluent limitations (unless otherwise specifically required as  
4 discussed above in relation to 303(d)-listed impaired water bodies). *See Boatyard General*  
5 *Permit Decision*. In the context of the Construction Stormwater General Permit, we interpreted  
6 RCW 90.48.555(8) as follows: “A benchmark is not a numeric effluent limitation, even if it is  
7 stated in numeric terms. Exceedances of the benchmark are not permit violations. Rather, the  
8 benchmark is a threshold or indicator value. When that threshold is reached, a permittee must  
9 implement a responsive protocol...” *Associated General Contractors v. Ecology*, PCHB Nos.  
10 05-157, 158, 159 (2007), COL 22.

11 All parties have relied on the Board’s 2007 Boatyard General Permit Decision to support  
12 their arguments. That decision ultimately required that the General Permit “explicitly require  
13 that permittees must continue implementing required remedial actions unless and until the  
14 benchmarks and other limits are achieved,” and further required the permit to address the  
15 contingency that implementation of all BMPs and corrective actions might fail to achieve the  
16 benchmarks. The Board did not construe the benchmark as a numeric effluent limitation, or  
17 nonattainment of a benchmark as a permit violation, but did require Ecology to modify the  
18 permit to specify further actions Ecology would take in response to continued failure of a  
19 permittee to achieve the benchmark. *Boatyard Decision at 65-66*.

20 The arguments on this motion for summary judgment have not changed this Board’s  
21 consistent interpretation of the benchmark and adaptive management schemes of recent general

1 permit appeals. However, there remain questions of fact as to exactly how this adaptive  
2 management scheme will work under the ISGP, which has a different set of requirements than  
3 other permits. These issues will proceed to hearing.

4 ORDER

5 PSA's Fourth Motion for Summary Judgment is DENIED, and the issues will proceed to  
6 hearing.

7 DONE this 23<sup>rd</sup> day of December 2010.

8  
9 POLLUTION CONTROL HEARINGS BOARD

10 Kathleen D. Mix

11 KATHLEEN D. MIX, Presiding

12 Andrea M. Doyle

13 ANDREA MCNAMARA DOYLE, Chair

14 William H. Lynch

15 WILLIAM H. LYNCH, Member

**APPENDIX 5**

**RCW 90.48.555**

**RCW 90.48.555**

**Construction and industrial storm water general permits —  
Effluent limitations — Report. (Expires January 1, 2015.)**

The provisions of this section apply to the construction and industrial storm water general permits issued by the department pursuant to the federal clean water act, 33 U.S.C. Sec. 1251 et seq., and this chapter.

(1) Effluent limitations shall be included in construction and industrial storm water general permits as required under the federal clean water act, 33 U.S.C. Sec. 1251 et seq., and its implementing regulations. In accordance with federal clean water act requirements, pollutant specific, water quality-based effluent limitations shall be included in construction and industrial storm water general permits if there is a reasonable potential to cause or contribute to an excursion of a state water quality standard.

(2) Subject to the provisions of this section, both technology and water quality-based effluent limitations may be expressed as:

(a) Numeric effluent limitations;

(b) Narrative effluent limitations; or

(c) A combination of numeric and narrative effluent discharge limitations.

(3) The department must condition storm water general permits for industrial and construction activities issued under the national pollutant discharge elimination system of the federal clean water act to require compliance with numeric effluent discharge limits when such discharges are subject to:

(a) Numeric effluent limitations established in federally adopted, industry-specific effluent guidelines;

(b) State developed, industry-specific performance-based numeric effluent limitations;

(c) Numeric effluent limitations based on a completed total

maximum daily load analysis or other pollution control measures; or

(d) A determination by the department that:

(i) The discharges covered under either the construction or industrial storm water general permits have a reasonable potential to cause or contribute to violation of state water quality standards; and

(ii) Effluent limitations based on nonnumeric best management practices are not effective in achieving compliance with state water quality standards.

(4) In making a determination under subsection (3)(d) of this section, the department shall use procedures that account for:

(a) Existing controls on point and nonpoint sources of pollution;

(b) The variability of the pollutant or pollutant parameter in the storm water discharge; and

(c) As appropriate, the dilution of the storm water in the receiving waters.

(5) Narrative effluent limitations requiring both the implementation of best management practices, when designed to satisfy the technology and water quality-based requirements of the federal clean water act, 33 U.S.C. Sec. 1251 et seq., and compliance with water quality standards, shall be used for construction and industrial storm water general permits, unless the provisions of subsection (3) of this section apply.

(6) Compliance with water quality standards shall be presumed, unless discharge monitoring data or other site specific information demonstrates that a discharge causes or contributes to violation of water quality standards, when the permittee is:

(a) In full compliance with all permit conditions, including planning, sampling, monitoring, reporting, and recordkeeping conditions; and

(b)(i) Fully implementing storm water best management practices contained in storm water technical manuals approved by the department, or practices that are demonstrably equivalent to practices contained in storm water technical manuals approved by the department, including the proper selection, implementation, and maintenance of all applicable and appropriate best management practices for on-site pollution control.

(ii) For the purposes of this section, "demonstrably equivalent" means that the technical basis for the selection of all storm water best management practices are documented within a storm water pollution prevention plan. The storm water pollution prevention plan must document:

(A) The method and reasons for choosing the storm water best management practices selected;

(B) The pollutant removal performance expected from the practices selected;

(C) The technical basis supporting the performance claims for the practices selected, including any available existing data concerning field performance of the practices selected;

(D) An assessment of how the selected practices will comply with state water quality standards; and

(E) An assessment of how the selected practices will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment.

(7)(a) By November 1, 2009, the department shall modify or reissue the industrial storm water general permit to require compliance with appropriately derived numeric water quality-based effluent limitations for existing discharges to water bodies listed as impaired according to 33 U.S.C. Sec. 1313(d) (Sec. 303(d) of the federal clean water act, 33 U.S.C. Sec. 1251 et seq.).

(b) The industrial storm water general permit must require permittees to comply with appropriately derived numeric water

quality-based effluent limitations in the permit, as described in (a) of this subsection, by no later than six months after the effective date of the modified or reissued industrial storm water general permit.

(c) For permittees that the department determines are unable to comply with the numeric water quality-based effluent limitations required by (a) of this subsection, within the timeline established in (b) of this subsection, the department shall establish a compliance schedule as follows:

(i) Any compliance schedule provided by the department must require compliance as soon as possible, and must require compliance by no later than twenty-four months, or two complete wet seasons, after the effective date of the industrial storm water general permit. For purposes of this subsection (7)(c)(i), "wet seasons" means October 1st through June 30th.

(ii) The department shall post on its web site the name, location, industrial storm water permit number, and the reason for requesting a compliance schedule for each permittee who requests a compliance schedule according to this subsection (7)(c). The department shall post this information no later than thirty days after receiving a permittee's request for a compliance schedule under this subsection (7)(c). The department shall also prepare a list of organizations and individuals seeking to be notified when such requests for compliance schedules are made, and notify them within thirty days after receiving a permittee's request for a compliance schedule. Notification under this subsection may be accomplished electronically.

(d) The department shall report to the appropriate committees of the legislature specifying how the numeric effluent limitation in (a) of this subsection would be implemented. The report shall identify the number of dischargers to impaired water bodies and provide an assessment of anticipated compliance with the numeric effluent limitation established by (a) of this subsection.

(8)(a) Construction and industrial storm water general permits issued by the department shall include an enforceable adaptive management mechanism that includes appropriate monitoring, evaluation, and reporting. The adaptive management mechanism

shall include elements designed to result in permit compliance and shall include, at a minimum, the following elements:

(i) An adaptive management indicator, such as monitoring benchmarks;

(ii) Monitoring;

(iii) Review and revisions to the storm water pollution prevention plan;

(iv) Documentation of remedial actions taken; and

(v) Reporting to the department.

(b) Construction and industrial storm water general permits issued by the department also shall include the timing and mechanisms for implementation of treatment best management practices.

(9) Construction and industrial storm water discharges authorized under general permits must not cause or have the reasonable potential to cause or contribute to a violation of an applicable water quality standard. Where a discharge has already been authorized under a national pollutant discharge elimination system storm water permit and it is later determined to cause or have the reasonable potential to cause or contribute to the violation of an applicable water quality standard, the department may notify the permittee of such a violation.

(10) Once notified by the department of a determination of reasonable potential to cause or contribute to the violation of an applicable water quality standard, the permittee must take all necessary actions to ensure future discharges do not cause or contribute to the violation of a water quality standard and document those actions in the storm water pollution prevention plan and a report timely submitted to the department. If violations remain or recur, coverage under the construction or industrial storm water general permits may be terminated by the department, and an alternative general permit or individual permit may be issued. Compliance with the requirements of this subsection does not

preclude any enforcement activity provided by the federal clean water act, 33 U.S.C. Sec. 1251 et seq., for the underlying violation.

(11) Receiving water sampling shall not be a requirement of an industrial or construction storm water general permit except to the extent that it can be conducted without endangering the health and safety of persons conducting the sampling.

(12) The department may authorize mixing zones only in compliance with and after making determinations mandated by the procedural and substantive requirements of applicable laws and regulations.

[2009 c 449 § 1; 2004 c 225 § 2.]

## APPENDIX 6

### Industrial Stormwater General Permit

October 21, 2009

Issuance Date: October 21, 2009  
Effective Date: January 1, 2010  
Expiration Date: January 1, 2015

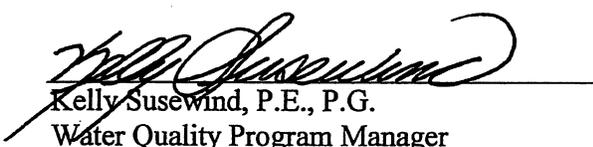
# INDUSTRIAL STORMWATER GENERAL PERMIT

A National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge  
General Permit for Stormwater Discharges Associated With  
Industrial Activities

**State of Washington**  
**Department of Ecology**  
Olympia, Washington 98504-7600

In compliance with the provisions of  
The State of Washington Water Pollution Control Law  
Chapter 90.48 Revised Code of Washington  
and  
The Federal Water Pollution Control Act  
(The Clean Water Act)  
Title 33 United States Code, Section 1251 et seq.

Until this permit expires, is modified or revoked, Permittees that have properly obtained  
coverage under this general permit are authorized to discharge in accordance with the special and  
general conditions which follow.

  
Kelly Susewind, P.E., P.G.  
Water Quality Program Manager  
Washington State Department of Ecology

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## SUMMARY OF PERMIT REPORTS & SUBMITTALS

Permit Section	Submittal	Frequency	Due Date(s)
S1.F	Conditional “No Exposure” Certification Form	As necessary	As necessary
S2.B	<i>Application</i> for Permit Coverage	As necessary	As necessary
S2.B.	Request Modification of Permit Coverage	As necessary	As necessary
S2.D	Request Transfer of Coverage	As necessary	As necessary
S9.A	Discharge Monitoring Reports (DMRs)	1/quarter	within 45 days after the end of each quarter
S9.B	Annual Report	1/year	May 15 <sup>th</sup> (except 2010)
S9.C.	SWPPP, if requested by <i>Ecology</i>	Per <i>Ecology</i> request	Within 14 days of request
S9.D	Noncompliance Notification	As necessary	Within 30 days of noncompliance event

## SUMMARY OF REQUIRED ONSITE DOCUMENTATION<sup>1</sup>

Permit Condition(s)	Document Title
S3.A.4.a	<i>Stormwater Pollution Prevention Plan (SWPPP)</i> <sup>2</sup>
S9.B	Copies of Annual Reports
S9.C.1.a	Copy of Permit
S9.C.1.b	Copy of Permit Coverage Letter
S9.C.1.c	Original Sampling Records (Field Notes and Laboratory Reports)
S7.C & S9.C.1.d	Site Inspection Reports
S9.C.1.j	Copies of Discharge Monitoring Reports (DMRs)

<sup>1</sup> A complete list is contained in Condition S9.C. The permittee shall make all plans, documents and records required by this permit immediately available to Ecology or the local jurisdiction upon request.

<sup>2</sup> With signed and completed SWPPP Certification Form(s) – see Appendix 3

## SPECIAL CONDITIONS

### S1. PERMIT COVERAGE

#### A. Facilities Required to Seek Coverage Under This General Permit

This statewide permit applies to *facilities* conducting *industrial activities* that *discharge stormwater* to a surface water body or to a *storm sewer* system that drains to a surface water body. Beginning on the effective date of this permit and lasting through its expiration date, the Permittee is authorized to *discharge stormwater* and conditionally approved non-stormwater *discharges* to *waters of the state*. All *discharges* and activities authorized by this permit shall be consistent with the terms and conditions of this permit.

The permit requires coverage for private entities, state, and *local government* facilities, and includes *existing facilities* and *new facilities*. Facilities conducting industrial activities listed in Table 1 or referenced in S1.A3 shall apply for coverage under this permit or apply for a Conditional No Exposure exemption, if eligible (Condition S1.F). The *Department of Ecology (Ecology)* may also require permit coverage for any *facility* on a case-by-case basis in order to protect *waters of the state* (Condition S1.B).

1. Facilities engaged in any industrial activities in Table 1 shall apply for coverage if *stormwater* from the *facility discharges* to a surface water body, or to a *storm sewer* system that *discharges* to a surface water body. The *Standard Industrial Classification (SIC)* groups generally, but not always, associated with these activities are listed in Table 1.

**Table 1: Activities Requiring Permit Coverage and the Associated SIC Code Groups**

<b>Industrial Activities</b>	<b>SIC Code</b>
Metal Mining	10xx
Coal Mining	12xx
Oil and Gas Extraction	13xx
Mining and Quarrying of Nonmetallic Minerals, except Fuels (except facilities in SIC Codes must apply for the Sand and Gravel General Permit: 1411 -; 1422 1423 1429 1442 - 1446 1445; 1459; 1499 -	14xx
Food and Kindred Products	20xx
Tobacco Products	21xx
Textile Mill Products	22xx
Apparel and Other Finished Products Made from Fabrics and Similar Material	23xx
Lumber and Wood Products	24xx
Furniture and Fixtures	25xx
Paper and Allied Products	26xx
Printing, Publishing and Allied Industries	27xx
Chemicals and Allied Products	28xx
Petroleum Refining and Related Industries	29xx
Rubber and Miscellaneous Products	30xx
Leather and Leather Products	31xx
Stone, Clay, Glass, and Concrete Products	32xx

<b>Industrial Activities</b>	<b>SIC Code</b>
Primary Metal Industries	33xx
Fabricated Metal Products	34xx
Industrial and Commercial Machinery and Computer Equipment	35xx
Electronic and Other Electrical Equipment and Components	36xx
Transportation Equipment	37xx
Measuring, Analyzing, and Controlling Instruments; Photographic, Medical, and Optical Goods; Watches and Clocks	38xx
Miscellaneous Manufacturing Industries	39xx
Farm Product Storage	4221
Refrigerated Storage	4222
General Storage	4225
Recycling facilities involved in the recycling of materials, including but not limited to, metal scrap yards, battery reclaimers, salvage yards, auto recyclers, and automobile junkyards.	5015 and 5093
Steam Electric Power Generation, including coal handling sites	N/A
Active <i>landfills</i> , including, but not limited to, wood waste and inert <i>landfills</i> , transfer stations, open dumps, compost facilities, and <i>land application sites</i> , except as described in S1.C.6 or C.7.	4953
Hazardous waste treatment, storage, and disposal (TSD) facilities, and recycling facilities regulated under Chapter 173-303 WAC.	N/A
Treatment works treating domestic sewage, or any other sewage sludge, or wastewater treatment device or system, used in the storage, recycling, and reclamation of municipal or domestic sewage (including land dedicated to the disposal of sewage sludge that are located within the confines of the <i>facility</i> ) with the design flow capacity of 1 million gallons per day (MGD) or more, or required to have a pretreatment program under 40 CFR §403.	4952
Transportation facilities which have <i>vehicle maintenance</i> shops, <i>material handling</i> facilities, equipment cleaning operations, or airport deicing operations:	
• Railroad Transportation	40xx
• Local and Suburban Transit and Interurban Highway Passenger Transportation	41xx
• Motor Freight Transportation (except SIC 4221–25)	42xx
• United States Postal Service	43xx
• Water Transportation	44xx
• Air Transportation	45xx
• Petroleum Bulk Stations and Terminals	5171

2. Any *facility* that has an existing *National Pollutant Discharge Elimination System (NPDES)* permit which does not address all *stormwater discharges associated with industrial activity* [40 CFR Subpart 122.26(b)(14)] shall obtain permit coverage.
3. Any *inactive facility* which is listed under 40 CFR Subpart 122.26(b)(14) where *significant materials* remain onsite and are exposed to *stormwater* shall obtain permit coverage.

**B. Significant Contributors of Pollutants**

*Ecology* may require a *facility* to obtain coverage under this permit if *Ecology* determines the *facility*:

1. Is a *significant contributor of pollutants* to *waters of the state*, including *ground water*;
2. May reasonably be expected to cause a violation of any *water quality standard*; or
3. Conducts *industrial activity*, or has a SIC code, with *stormwater* characteristics similar to any *industrial activity* or SIC code listed in Table 1 in S1.A1.

**C. Facilities Not Required to Obtain Coverage**

*Ecology* does not require the types of facilities listed below to obtain coverage under this permit, unless determined to be a *significant contributor of pollutants*.

1. Industrial facilities that submit an *application* and qualify for a Conditional “No Exposure” Exemption. (Condition S1.F)
2. Industrial facilities that *discharge stormwater* only to a municipal *combined sewer* or *sanitary sewer*. *Discharge* of stormwater to sanitary or *combined sewers* shall only occur as authorized by the municipal sewage authority.
3. Industrial facilities that *discharge stormwater* only to groundwater (e.g., on-site infiltration) with no *discharge* to *surface waters of the state* under any condition.
4. Office buildings and/or administrative parking lots from which *stormwater* does not commingle with stormwater from areas associated with *industrial activity*.
5. Any part of a *facility* with a *discharge* that is in compliance with the instructions of an On-Scene-Coordinator pursuant to 40 CFR part 300 (The National Oil and Hazardous Substances Pollution Contingency Plan) or 33 CFR 153.10(e) (Pollution by Oil and Hazardous Substances), in accordance with 40 CFR 122.3(d).
6. Any *land application site* used for the beneficial use of industrial or municipal wastewater for agricultural activities or when applied for landscaping purposes at agronomic rates.
7. Any farmland, domestic garden, or land used for sludge management where domestic sewage sludge (biosolids) is beneficially reused (nutrient builder or soil conditioner) and which is not physically located in the confines of domestic sewage treatment

works, or areas that are in compliance with Section 405 (Disposal of Sewage Sludge) of the *Clean Water Act (CWA)*.

8. Any inactive coal mining operation if:
  - a. The performance bond issued to the *facility* by the appropriate Surface Mining Control and Reclamation Act (SMCRA) authority has been released from applicable state or federal reclamation requirements after December 17, 1990.
  - b. The mine does not have a *discharge of stormwater* that comes in contact with any overburden, raw material, intermediate products, finished products, byproducts, or waste products located on the site of the *facility*.
9. Inactive mining, inactive oil and gas operations, or inactive *landfills* where neither an owner nor an operator can be identified.
10. Closed *landfills* that are capped and stabilized, in compliance with Chapter 173-304 WAC, and in which no *significant materials* or industrial *pollutants* remain exposed to *stormwater*. Permittee's with existing coverage may submit a *Notice of Termination* in accordance with Special Condition S13.A.1.

D. Facilities Excluded from Coverage

*Ecology* will not cover the following facilities or activities under this permit:

1. Any part of a *facility* that has a *stormwater discharge* subject to *stormwater* Effluent Limitations Guidelines, New Source Performance Standards (NSPS) Under *40 CFR* Subchapter N, or Toxic Pollutant Effluent Standards under *40 CFR* Subchapter D Part 129; these facilities must apply for NPDES permit coverage in an individual or industry-specific *general permit* for those *stormwater discharges*.

Below is a list of categories of industries specified in *40 CFR* Subchapter N for which at least one subpart includes *stormwater* effluent limitations guidelines or NSPS. Industries included in this list should review the Subchapter N guidelines to determine if they are subject to a *stormwater* effluent limitation guideline for activities which they perform at their site.

40 CFR 411 Cement manufacturing	40 CFR 423 Steam electric power generating
40 CFR 412 Feedlots	40 CFR 434 Coal mining
40 CFR 418 Fertilizer manufacturing	40 CFR 436 Mineral mining and processing
40 CFR 419 Petroleum refining	40 CFR 440 Ore mining and dressing
40 CFR 422 Phosphate manufacturing	40 CFR 443 Paving and roofing materials (tars & asphalt)

Facilities discharging any of the following toxic *pollutants*, which are limited by effluent standards in *40 CFR* Subchapter D Part 129: Aldrin/Dieldrin; DDT; Endrin; Toxaphene; Benzidine; or Polychlorinated Biphenyls (PCBs); these facilities shall obtain coverage under an individual NPDES permit.

2. Nonpoint source silvicultural activities with natural *runoff* that are excluded in *40 CFR* Subpart 122.27.

3. Facilities located on federal land or are federally owned or operated.
  4. Facilities located on Tribal lands or facilities that *discharge stormwater* to receiving waters subject to *water quality standards* of Indian Tribes, including portions of the Puyallup River and other waters on trust or restricted lands within the 1873 Survey Area of the Puyallup Tribe of Indians Reservation.
  5. Any *facility* authorized to *discharge stormwater* associated with *industrial activity* under an existing NPDES individual or other *general permit*.
  6. All *construction activities*. Operators of these construction activities shall seek coverage under the Construction Stormwater General Permit or an individual NPDES permit for *stormwater* associated with *construction activity*.
  7. Facilities that *discharge* to a water body with a *control plan*, unless this *general permit* adequately provides the level of protection required by the *control plan*.
  8. *New dischargers* to a water body listed pursuant to Section 303(d) of the CWA, unless the Permittee meets the requirements of Condition S6.B.
  9. Hazardous waste *landfills* subject to 40 CFR Part 445, Subpart A.
- E. Discharges to Ground
1. For sites that *discharge* to both surface water and *ground water*, the terms and conditions of this permit shall apply to all *ground water discharges*.
  2. Facilities that *discharge* to *ground water* through an *underground injection control well* shall comply with any applicable requirements of the Underground Injection Control (UIC) regulations, Chapter 173-218 WAC.
- F. Conditional "No Exposure" Exemption
1. Any *industrial activity* identified for coverage under Condition S1.A. that is eligible for a "No Exposure" exemption from the permit under 40 CFR 122.26 (g), may submit a No Exposure Certification Form to *Ecology*, either in writing or electronically.
    - a. A Permittee is automatically granted a No Exposure exemption 90 days from *Ecology's* receipt of a complete and accurate No Exposure Certification Form, unless *Ecology* informs the applicant in writing or electronically within 90 days that it has denied or approved the request.
    - b. *Ecology* will automatically terminate permit coverage when it grants the No Exposure exemption to a permitted *facility*.
    - c. Facilities which are granted a No Exposure exemption must submit a No Exposure Certification Form to *Ecology* once every five years, or by October 1, 2013, whichever is earlier.
    - d. No Exposure exemptions are conditional. If there is a change at the *facility* that results in the exposure of industrial activities or materials to *stormwater*, the *facility* is required to immediately apply for and obtain a permit.

## S2. APPLICATION FOR COVERAGE

### A. Obtaining Permit Coverage

#### 1. Permitted Facilities

Permittees with coverage under the existing industrial *stormwater general permit* (effective date Nov 15, 2008) are automatically covered under this permit unless otherwise notified by *Ecology*.

#### 2. Unpermitted Facilities

Unpermitted facilities that require coverage under this permit shall submit a complete and accurate permit *application* to *Ecology* as follows:

##### a. Existing Facilities

- i. Unpermitted existing facilities that require coverage under this permit shall submit a complete and accurate permit *application* to *Ecology*.
- ii. Existing facilities are facilities in operation prior to the effective date of this permit, January 1, 2010.

##### b. New Facilities

*New facilities* are facilities that begin operation on or after the effective date of this permit, January 1, 2010. All unpermitted new facilities shall:

- i. Submit a complete and accurate permit *application* to *Ecology* at least 60 days before the commencement of *stormwater discharge* from the *facility*.
- ii. The *application* shall include certification that the *facility* has met the applicable public notice and *State Environmental Policy Act (SEPA)* requirements in WAC 173-226-200(f).

### B. Modification of Permit Coverage

A Permittee anticipating a *significant process change*, or otherwise requesting a modification of permit coverage, shall submit a complete Modification of Coverage Form to *Ecology*. The Permittee shall:

1. Apply for modification of coverage at least 60 days before implementing a *significant process change*; or by June 1<sup>st</sup> prior to a Corrective Action deadline, if requesting a Level 2 or 3 time extension or waiver request per Condition S8.B-D.
2. Complete the public notice requirements in WAC 173-226-130(5) as part of a complete *application* for modification of coverage.
3. Comply with SEPA as part of a complete *application* for modification of coverage if undergoing a *significant process change*.

### C. Permit Coverage or Permit Modification Timeline

1. If the applicant does not receive notification from *Ecology*, permit coverage or modification of coverage automatically commences on whichever of the following dates occurs last:
  - a. The 31<sup>st</sup> day following receipt by *Ecology* of a completed *application* for coverage or modification of coverage form.
  - b. The 31<sup>st</sup> day following the end of a 30-day public comment period.
  - c. The effective date of the *general permit*.
2. *Ecology* may need additional time to review the *application*:
  - a. If the *application* is incomplete.
  - b. If it requires additional site-specific information.
  - c. If the public requests a public hearing.
  - d. If members of the public file comments.
  - e. When more information is necessary to determine whether coverage under the *general permit* is appropriate.
3. When *Ecology* needs additional time:
  - a. *Ecology* will notify the applicant in writing within 30 days and identify the issues that the applicant must resolve before a decision can be reached.
  - b. *Ecology* will submit the final decision to the applicant in writing. If *Ecology* approves the *application* for coverage/modification, coverage begins the 31<sup>st</sup> day following approval, or the date the approval letter is issued, whichever is later.

### D. Transfer of Permit Coverage

Coverage under this *general permit* shall automatically transfer to a *new discharger*, if all of the following conditions are met:

1. The Permittee (existing *discharger*) and *new discharger* submit to *Ecology* a complete, written, signed agreement (Transfer of Coverage Form) containing a specific date for transfer of permit responsibility, coverage, and liability.
2. The type of industrial activities and practices remain substantially unchanged.
3. *Ecology* does not notify the Permittee of the need to submit a new *application* for coverage under the *general permit* or for an individual permit pursuant to Chapters 173-216, 173-220, and 173-226 WAC.
4. *Ecology* does not notify the existing *discharger* and *new discharger* of its intent to revoke coverage under the *general permit*. The transfer is effective on the date specified in the written agreement unless *Ecology* gives this notice.

### S3. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

#### A. General Requirements

1. All Permittees and applicants for coverage under this permit shall develop and implement a SWPPP for the permitted *facility* as follows:
2. The SWPPP shall specify the *Best Management Practices* (BMPs) necessary to:
  - a. Provide *all known, available, and reasonable methods of prevention, control, and treatment (AKART)* of *stormwater pollution*.
  - b. Ensure the *discharge* does not cause or contribute to a violation of the *Water Quality Standards*.
  - c. Comply with applicable federal technology-based treatment requirements under *40 CFR 125.3*.
3. Proper Selection and Use of *Stormwater Management Manuals (SWMM)*:

BMPs shall be consistent with:

  - a. *Stormwater Management Manual* for Western Washington (2005 edition), for sites west of the crest of the Cascade Mountains.
  - b. *Stormwater Management Manual* for Eastern Washington (2004 edition), for sites east of the crest of the Cascade Mountains.
  - c. Revisions to the manuals in S3.A.3. a & b., or other *stormwater* management guidance documents or manuals which provide an equivalent level of *pollution* prevention, that are approved by *Ecology* and incorporated into this permit in accordance with the permit modification requirements of WAC 173-220-190. For purposes of this section, the documents listed in Appendix 10 of the Phase I Municipal Stormwater Permit are hereby incorporated into this permit.
  - d. Documentation in the SWPPP that the BMPs selected are *demonstrably equivalent* to practices contained in stormwater technical manuals approved by *Ecology*, including the proper selection, implementation, and maintenance of all applicable and appropriate *best management practices* for on-site *pollution* control.
4. Update of the SWPPP
  - a. The Permittee shall modify the SWPPP if the owner/operator or the applicable local or state regulatory authority determines during inspections or investigations that the SWPPP is, or would be, ineffective in eliminating or significantly minimizing *pollutants* in *stormwater* discharges from the site. The Permittee shall modify the SWPPP:
    - i. As necessary to include additional or modified BMPs designed to correct problems identified.
    - ii. To correct the deficiencies identified in writing from *Ecology* within 30 days of notice.

- b. The Permittee shall modify the SWPPP whenever there is a change in design, construction, operation, or maintenance at the *facility* that significantly changes the nature of *pollutants* discharged in *stormwater* from the *facility*, or significantly increases the quantity of pollutants discharged.

5. *Other Pollution Control Plans*

The Permittee may incorporate by reference applicable portions of plans prepared for other purposes at their *facility*. Plans or portions of plans incorporated by reference into a SWPPP become enforceable requirements of this permit and must be available along with the SWPPP as required in S9.F. A *Pollution Prevention Plan* prepared under the Hazardous Waste Reduction Act, Chapter 70.95C RCW, is an example of such a plan.

6. *Signatory Requirements*

The Permittee shall sign and certify all SWPPPs in accordance with General Condition G2, each time it revises or modifies a SWPPP to comply with Conditions S3.A.4 (Update of the SWPPP), S7 (Inspections) or S8 (Corrective Actions). A SWPPP Certification Form is contained in Appendix 3 of this permit.

B. Specific SWPPP Requirements

The SWPPP shall contain a site map, a detailed assessment of the *facility*, a detailed description of the BMPs, Spill Prevention and Emergency Cleanup Plan, and a sampling plan. The Permittee shall identify any parts of the SWPPP which the *facility* wants to claim as Confidential Business Information.

1. The site map shall identify:
  - a. The scale or include relative distances between significant structures and drainage systems.
  - b. Significant features.
  - c. The *stormwater* drainage and *discharge* structures and identify, by name, any other party other than the Permittee that owns any *stormwater* drainage or discharge structures.
  - d. The *stormwater* drainage areas for each *stormwater discharge* point off-site (including discharges to *ground water*) and assign a unique identifying number for each discharge point.
  - e. Each sampling location by unique identifying number.
  - f. Paved areas and buildings.
  - g. Areas of *pollutant* contact (actual or potential) associated with specific industrial activities.
  - h. Conditionally approved non-*stormwater* discharges (Condition S5.D).
  - i. Surface water locations (including wetlands and drainage ditches).
  - j. Areas of existing and potential soil *erosion* (in a *significant amount*).

- k. *Vehicle maintenance* areas.
  - l. Lands and waters adjacent to the site that may be helpful in identifying *discharge* points or drainage routes.
2. The *facility* assessment shall include a description of the *facility*; an inventory of *facility* activities and equipment that contribute to or have the potential to contribute any *pollutants* to *stormwater*; and, an inventory of materials that contribute to or have the potential to contribute pollutants to *stormwater*.
- a. The *facility* description shall describe:
    - i. The industrial activities conducted at the site.
    - ii. *Regular business hours* and seasonal variations in business hours or industrial activities.
    - iii. The general layout of the *facility* including buildings and storage of raw materials, and the flow of goods and materials through the *facility*.
  - b. The inventory of industrial activities shall identify all areas associated with industrial activities (see Table 1) that have been or may potentially be sources of *pollutants*, including, but not limited to, the following:
    - i. Loading and unloading of dry bulk materials or liquids.
    - ii. Outdoor storage of materials or products.
    - iii. Outdoor manufacturing and processing.
    - iv. On-site dust or particulate generating processes.
    - v. On-site waste treatment, storage, or disposal.
    - vi. *Vehicle* and equipment fueling, maintenance, and/or cleaning (includes washing).
    - vii. Roofs or other surfaces exposed to *air emissions* from a manufacturing building or a process area.
    - viii. Roofs or other surfaces composed of materials that may be mobilized by *stormwater* (e.g., galvanized roofs, galvanized fences, etc.).
  - c. The inventory of materials shall list:
    - i. The types of materials handled at the site that potentially may be exposed to precipitation or *runoff* and could result in *stormwater pollution*.
    - ii. A short narrative for each material describing the potential of the *pollutant* to be present in *stormwater* discharges. The Permittee shall update this narrative when data become available to verify the presence or absence of these pollutants.
    - iii. A narrative description of any potential sources of *pollutants* from past activities, materials and spills that were previously handled, treated, stored, or disposed of in a manner to allow ongoing exposure to *stormwater*. Include the

method and location of on-site storage or disposal. List significant spills and significant leaks of toxic or hazardous pollutants.

3. The SWPPP shall identify specific individuals by name or by title within the organization (*pollution* prevention team) whose responsibilities include: SWPPP development, implementation, maintenance, and modification.

4. *Best Management Practices* (BMPs)

- a. General BMP Requirements

The Permittee shall describe each BMP selected to eliminate or reduce the potential to contaminate *stormwater* and prevent violations of *water quality standards*.

- b. No later than July 1, 2010, the Permittee shall include each of the following mandatory BMPs in the SWPPP and implement the BMPs. The Permittee may omit individual BMPs if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMPs; if the Permittee clearly justifies each BMP omission in the SWPPP. Prior to July 1, 2010, the Permittee shall implement the BMP requirements of the previous Industrial *Stormwater General Permit*, or Condition S3.B.4 of this permit.

- i. *Operational Source Control BMPs*

- 1) The SWPPP shall include the *Operational Source Control BMPs* listed as “applicable” in *Ecology’s* SWMMs, or other guidance documents or manuals approved in accordance with S3.A.3.c.

- 2) Good Housekeeping: The SWPPP shall include BMPs that define ongoing maintenance and cleanup, as appropriate, of areas which may contribute *pollutants* to *stormwater* discharges. The SWPPP shall include the schedule/frequency for completing each housekeeping task, based upon *industrial activity*, sampling results and observations made during inspections. The Permittee shall:

- a) Vacuum paved surfaces with a vacuum sweeper (or a sweeper with a vacuum attachment) to remove accumulated *pollutants* a minimum of once per quarter.
- b) Identify and control all on-site sources of dust to minimize *stormwater* contamination from the deposition of dust on areas exposed to precipitation.
- c) Inspect and maintain bag houses monthly to prevent the escape of dust from the system. Immediately remove any accumulated dust at the base of exterior bag houses.
- d) Keep all dumpsters under cover or fit with a lid that must remain closed when not in use.

- 3) Preventive Maintenance: The SWPPP shall include BMPs to inspect and maintain the *stormwater* drainage, source controls, treatment systems (if

any), and plant equipment and systems that could fail and result in contamination of *stormwater*. The SWPPP shall include the schedule/frequency for completing each maintenance task. The Permittee must:

- a) Clean catch basins when the depth of debris reaches 60% of the sump depth. In addition, the Permittee must keep the debris surface at least 6 inches below the outlet pipe.
  - b) Inspect all equipment and vehicles during monthly site inspections for leaking fluids such as oil, antifreeze, etc. Take leaking equipment and *vehicles* out of service or prevent leaks from spilling on the ground until repaired.
  - c) Immediately clean up spills and leaks (e.g., using absorbents, vacuuming, etc.) to prevent the *discharge* of *pollutants*.
- 4) Spill Prevention and Emergency Cleanup Plan (SPECP): The SWPPP shall include a SPECP that includes BMPs to prevent spills that can contaminate *stormwater*. The SPECP shall specify BMPs for *material handling* procedures, storage requirements, cleanup equipment and procedures, and spill logs, as appropriate. The Permittee shall:
- a) Store all chemical liquids, fluids, and petroleum products, on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater.
  - b) Prevent precipitation from accumulating in containment areas with a roof or equivalent structure or include a plan on how it will manage and dispose of accumulated water if a containment area cover is not practical.
  - c) Locate spill kits within 25 feet of all stationary fueling stations, fuel transfer stations, and mobile fueling units. At a minimum, spill kits shall include:
    - i) Oil absorbents capable of absorbing 15 gallons of fuel.
    - ii) A storm drain plug or cover kit.
    - iii) A non-water containment boom, a minimum of 10 feet in length with a 12 gallon absorbent capacity.
    - iv) A non-metallic shovel.
    - v) Two five-gallon buckets with lids.
  - d) Not lock shut-off fueling nozzles in the open position. Do not “top-off” tanks being refueled.

- e) Block, plug or cover storm drains that receive *runoff* from areas where fueling, during fueling.
  - f) Use drip pans or equivalent containment measures during all petroleum transfer operations.
  - g) Locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone *vehicles* and equipment awaiting maintenance to protected areas).
  - h) Use drip pans and absorbents under or around leaky *vehicles* and equipment or store indoors where feasible. Drain fluids from equipment and *vehicles* prior to on-site storage or disposal.
  - i) Maintain a spill log that includes the following information for chemical and petroleum spills: date, time, amount, location, and reason for spill; date/time clean-up completed, notifications made and staff involved.
- 5) Employee Training: The SWPPP shall include BMPs to provide SWPPP training for employees who have duties in areas of industrial activities subject to this permit. At a minimum, the training plan shall include:
- a) The content of the training,
    - i) An overview of what is in the SWPPP.
    - ii) How employees make a difference in complying with the SWPPP and preventing contamination of *stormwater*.
    - iii) Spill response procedures, good housekeeping, maintenance requirements, and material management practices.
  - b) How the Permittee will conduct training.
  - c) The frequency/schedule of training. The Permittee shall train employees annually, at a minimum.
  - d) A log of the dates on which specific employees received training.
- 6) Inspections and Recordkeeping: The SWPPP shall include documentation of procedures to ensure compliance with permit requirements for inspections and recordkeeping. At a minimum, the SWPPP shall:
- a) Identify *facility* personnel who will inspect designated equipment and *facility* areas as required in Condition S7.
  - b) Contain a visual inspection report or check list that includes all items required by Condition S7.C.

- c) Provide a tracking or follow-up procedure to ensure that a report is prepared and any appropriate action taken in response to visual inspections.
  - d) Define how the Permittee will comply with signature requirements and records retention identified in Special Condition S9, Reporting and Recordkeeping Requirements.
  - e) Include a certification of compliance with the SWPPP and permit for each inspection using the language in S7.C.1.c.
- 7) *Illicit Discharges*: The SWPPP shall include measures to identify and eliminate the *discharge of process wastewater, domestic wastewater, noncontact cooling water, and other illicit discharges, to stormwater sewers, or to surface waters and ground waters of the state*. The Permittee can find BMPs to identify and eliminate *illicit discharges* in Volume IV of *Ecology's SWMM for Western Washington* and Chapter 8 of the SWMM for Eastern Washington.

Water from washing *vehicles* or equipment, steam cleaning and/or pressure washing is considered *process wastewater*. The Permittee must not allow this process wastewater to comingle with *stormwater* or enter storm drains; and must collect in a tank for off-site disposal, or *discharge* it to a *sanitary sewer*, with written approval from the local sewage authority.

ii. *Structural Source Control BMPs*

- 1) The SWPPP shall include the *Structural Source Control BMPs* listed as “applicable” in *Ecology's SWMMs*, or other guidance documents or manuals approved in accordance with S3.A.3.c.
- 2) The SWPPP shall include BMPs to minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and *runoff* by either locating these industrial materials and activities inside or protecting them with storm resistant coverings.

Permittees shall:

- a) Use grading, berming, or curbing to prevent *runoff* of contaminated flows and divert run-on away from these areas.
- b) Perform all cleaning operations indoors, under cover, or in bermed areas that prevent *stormwater runoff* and run-on and also that capture any overspray.
- c) Ensure that all washwater drains to a collection system that directs the washwater to further treatment or storage and not to the *stormwater drainage system*.

iii. *Treatment BMPs*

The Permittee shall:

- 1) Use *Treatment BMPs* consistent with the applicable documents referenced in Condition S3.A.3.
- 2) Employ oil/water separators, booms, skimmers or other methods to eliminate or minimize oil and grease contamination of *stormwater* discharges.
- 3) Obtain *Ecology* approval before beginning construction/installation of all *treatment BMPs* that include the addition of chemicals to provide treatment.

iv. *Stormwater Peak Runoff Rate and Volume Control BMPs*

Facilities with *new development* or *redevelopment* shall evaluate whether flow control BMPs are necessary to satisfy the state's AKART requirements, and prevent violations of water quality standards. If flow control BMPs are required, they shall be selected according to S3.A.3.

v. *Erosion and Sediment Control BMPs*

The SWPPP shall describe the BMPs necessary to prevent the *erosion* of soils and other earthen materials (crushed rock/gravel, etc.) and prevent off-site *sedimentation* and violations of *water quality standards*. The Permittee shall implement and maintain:

- 1) *Sediment* control BMPs such as *detention* or retention ponds or traps, vegetated filter strips, bioswales, or other permanent *sediment* control BMPs to minimize *sediment* loads in *stormwater* discharges.
- 2) Filtration BMPs to remove solids from catch basins, sumps or other *stormwater* collection and conveyance system components (filter socks, modular canisters, sand filtration, centrifugal separators, etc.).

5. Sampling Plan

The SWPPP shall include a sampling plan. The plan shall:

- a. Identify points of *discharge* to surface water, *storm sewers*, or discrete *ground water* infiltration locations, such as dry wells or *detention* ponds.
- b. Include documentation of why each *discharge* point is not sampled per S4.B.2.c (if applicable):
  - i. Location of which *discharge* points the Permittee does not sample because the *pollutant* concentrations are substantially identical to a discharge point being sampled.
  - ii. General industrial activities conducted in the drainage area of each *discharge* point.
  - iii. *Best Management Practices* conducted in the drainage area of each outfall.

- iv. Exposed materials located in the drainage area of each *discharge* point that are likely to be significant contributors of *pollutants* to *stormwater discharges*.
  - v. Impervious surfaces in the drainage area that could affect the percolation of *stormwater runoff* into the ground (e.g., asphalt, crushed rock, grass, etc.).
  - vi. Reasons why the Permittee expects the *discharge* points to discharge substantially identical effluents.
- c. Identify each sampling location by its unique identifying number such as A1, A2, etc.
  - d. Identify staff responsible for conducting *stormwater* sampling.
  - e. Specify procedures for sample collection and handling.
  - f. Specify procedures for sending samples to a laboratory.
  - g. Identify parameters for analysis, holding times and preservatives, laboratory *quantitation levels*, and analytical methods.
  - h. Specify the procedure for submitting results to *Ecology*.

#### **S4. GENERAL SAMPLING REQUIREMENTS**

##### **A. General Requirements**

The Permittee shall conduct sampling of *stormwater* in accordance with this permit and the SWPPP.

##### **B. Sampling Requirements**

###### **1. Sample Timing and Frequency**

- a. The Permittee shall sample the *discharge* from each designated location at least once per quarter:
  - 1<sup>st</sup> Quarter = January, February, and March
  - 2<sup>nd</sup> Quarter = April, May, and June
  - 3<sup>rd</sup> Quarter = July, August, and September
  - 4<sup>th</sup> Quarter = October, November, and December
- b. Permittees shall sample the *stormwater discharge* from the first fall storm event each year. "First fall storm event" means the first time after October 1<sup>st</sup> of each year that precipitation occurs and results in a *stormwater discharge* from a *facility*.
- c. Permittees shall collect samples within the first 12 hours of *stormwater discharge* events. If it is not possible to collect a sample within the first 12 hours of a *stormwater* discharge event, the Permittee must collect the sample as soon as practicable after the first 12 hours, and keep documentation with the sampling records (Condition S4.B.3) explaining why they could not collect samples within the first 12 hours.

- d. The Permittee shall obtain *representative samples*, which may be a single grab sample, a time-proportional sample, or a flow-proportional sample.
  - e. Permittees need not sample outside of *regular business hours*, during unsafe conditions, or during quarters where there is no discharge, but shall submit a Discharge Monitoring Report each reporting period (Condition S9.A).
2. Sample Location(s)
- a. The Permittee shall designate sampling location(s) at the point(s) where it discharges *stormwater* associated with *industrial activity* off-site.
  - b. The Permittee is not required to sample on-site discharges to ground (e.g., infiltration, etc.) or *sanitary sewer* discharges, unless specifically required by *Ecology* (Condition G12).
  - c. The Permittee shall sample each distinct point of *discharge* off-site except as otherwise exempt from monitoring as a “substantially identical outfall” per S3.B.5.b. The Permittee is required to monitor only one of the “substantially identical outfalls” if two or more outfalls discharge substantially identical effluents (based on similar industrial activities and site conditions).
  - d. The exception to sampling each point of *discharge* in S4.B.2.c does not apply to any point of discharge subject to numeric effluent limitations (Conditions S5.C, S6.C & S6.D).

3. Sample Documentation

For each *stormwater* sample taken, the Permittee shall record the following information and retain it on-site for *Ecology* review:

- a. Sample date.
- b. Sample time.
- c. A notation describing if the Permittee collected the sample within the first 30 minutes of *stormwater* discharge events.
- d. An explanation of why it could not collect a sample within the first 30 minutes of a *stormwater discharge* event, if it was not possible.
- e. Sample location (using SWPPP identifying number).
- f. Method of sampling, and method of sample preservation, if applicable.
- g. Individual who performed the sampling.

#### 4. Laboratory Documentation

The Permittee shall retain laboratory reports on-site for *Ecology* review and shall ensure that all laboratory reports providing data for all parameters include the following information:

- a. Date of analysis.
  - b. Parameter name.
  - c. CAS number, if applicable.
  - d. Analytical method(s).
  - e. Individual who performed the analysis.
  - f. Method detection limit (MDL).
  - g. Laboratory *quantitation level* (QL) achieved by the laboratory.
  - h. Reporting units.
  - i. Sample result.
  - j. Quality assurance/quality control data.
5. The Permittee shall maintain the original records onsite and make them available to *Ecology* upon request.
6. The Permittee may suspend sampling for one or more parameters (other than “visible oil sheen”) based on consistent attainment of *benchmark* values when:
- a. Four consecutive quarterly samples, collected after the effective date of this permit, demonstrate a reported value equal to or less than the *benchmark* value; or for pH, within the range of 5.0 – 9.0.
  - b. For purposes of tallying “consecutive quarterly samples”:
    - i. Do not include any quarters in which the Permittee did not collect a sample, but should have (e.g., discharge(s) occurred during normal working hours, and during safe conditions; but no sample was collected during the entire quarter). If this occurs, the tally of consecutive quarterly samples is reset to zero.
    - ii. Do not include any quarters in which the Permittee did not collect a sample because there was no *discharge* during the quarter (or the discharges during the quarter occurred outside normal working hours or during unsafe conditions). These quarters are not included in the calculation of four consecutive quarters, but do not cause the tally to be reset; i.e., they are skipped over.
  - c. Permittees monitoring more than once per quarter shall average all of the monitoring results for each parameter (except pH and “visible oil sheen”) and compare the average value to the *benchmark* value.

7. A Permittee who has a *significant process change* shall not use previous sampling results to demonstrate consistent attainment.
8. Suspension of sampling based on consistent attainment does not apply to *pollutant* parameters subject to numeric effluent limits based on federal Effluent Limitation Guidelines (Condition S5.C) or Section 303(d) of the *Clean Water Act* (Condition S6).

C. Analytical Procedures for Sampling Requirements

The Permittee shall ensure that analytical methods used to meet the sampling requirements specified in this permit conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136.

D. Laboratory Accreditation

1. The Permittee shall ensure that all analytical data required by *Ecology* is prepared by a laboratory registered or accredited under the provisions of, Accreditation of Environmental Laboratories, Chapter 173-50 WAC.
2. *Turbidity* and pH are exempt from this requirement, unless the laboratory must be registered or accredited for any other parameter.

**S5. BENCHMARKS, EFFLUENT LIMITATIONS AND SPECIFIC SAMPLING REQUIREMENTS**

A. Benchmarks and Sampling Requirements

1. Permittees shall sample their *stormwater discharges* as specified in Condition S4 and as specified in Table 2.
2. Additional sampling and/or requirements apply to specific industrial categories (S5.B), and facilities subject to effluent limitation guidelines (S5.C), and certain discharges to impaired waterbodies (S6).
3. If a Permittee's discharge exceeds a *benchmark* listed in Table 2, the Permittee shall take the actions specified in Condition S8. Permittees sampling more than once per quarter shall average the sample results for each parameter (except pH and “visible oil sheen”) and compare the average value to the *benchmark* to determine if the discharge has exceeded a *benchmark* value.

**Table 2: Benchmarks and Sampling Requirements Applicable to All Facilities**

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level <sup>a</sup>	Minimum Sampling Frequency <sup>b</sup>
Turbidity	NTU	25	EPA 180.1 Meter	0.5	1/quarter
pH	Standard Units	Between 5.0 and 9.0	Meter/Paper <sup>c</sup>	±0.5	1/quarter
Oil Sheen	Yes/No	No Visible Oil Sheen	N/A	N/A	1/quarter
Copper, Total	µg/L	Western WA: 14 Eastern WA: 32	EPA 200.8	2.0	1/quarter
Zinc, Total	µg/L	117	EPA 200.8	2.5	1/quarter

<sup>a</sup> The Permittee shall ensure laboratory results comply with the *quantitation level* specified in the table. However, if a Permittee knows that an alternate, less sensitive method (higher detection level and *quantitation level*) from 40 CFR Part 136 is sufficient to produce measurable results in its effluent, it may use that method for analysis.

<sup>b</sup> 1/quarter means 1 sample taken each quarter, year-round.

<sup>c</sup> Permittees shall use either a calibrated pH meter or narrow-range pH indicator paper with a resolution not greater than ± 0.5 SU.

**B. Additional Sampling Requirements for Specific Industrial Groups**

1. In addition to the requirements in Table 2, all Permittees identified by an *industrial activity* in Table 3 shall sample *stormwater* discharges as specified in Condition S4 and in Table 3.
2. If a *discharge* exceeds a *benchmark* listed in Table 3, the Permittee shall take the actions specified in Condition S8. Permittees sampling more than once per quarter shall average the sample results for each parameter and compare the average value to the *benchmark* to determine if it the discharge has exceeded a *benchmark*.

**Table 3: Additional Benchmarks and Sampling Requirements Applicable to Specific Industries**

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level <sup>a</sup>	Minimum Sampling Frequency <sup>b</sup>
<b>1. Chemical and Allied Products (28xx), Food and Kindred Products (20xx)</b>					
BOD <sub>5</sub>	mg/L	30	EPA 405.1 or SM 5210B	2	1/quarter
Nitrate/Nitrite, as Nitrogen	mg/L	0.68	EPA 353.1	0.10	1/quarter
Phosphorus, Total	mg/L	2.0	EPA 365.1	0.10	1/quarter
<b>2. Primary Metals(33xx), Metals Mining (10xx), Automobile Salvage and Scrap Recycling (5015 and 5093), Metals Fabricating (34xx)</b>					
Lead, Total	µg/L	81.6	EPA 200.8	0.5	1/quarter
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1	1/quarter
<b>3. Hazardous Waste Treatment, Storage and Disposal Facilities and Dangerous Waste Recyclers subject to the provisions of Resource Conservation and Recovery Act (RCRA) Subtitle C</b>					
Chemical Oxygen Demand (COD)	mg/L	120	SM5220-D	10	1/quarter
Ammonia, Total, as N	mg/L	2.1	SM4500-NH3- GH	0.3	1/quarter
TSS	mg/L	100	SM2540-D	5	1/quarter
Arsenic, Total	µg/L	150	EPA 200.8	0.5	1/quarter
Cadmium, Total	µg/L	2.1	EPA 200.8	0.25	1/quarter
Cyanide, Total	µg/L	22	SM 4500-CN I	10	1/quarter
Lead, Total	µg/L	81.6	EPA 200.8	0.5	1/quarter
Magnesium, Total	µg/L	64	EPA 200.7	80	1/quarter
Mercury, Total	µg/L	1.4	EPA 1631E	0.0005	1/quarter
Selenium, Total	µg/L	5.0	EPA 200.8	1.0	1/quarter
Silver, Total	µg/L	3.8	EPA 200.8	0.2	1/quarter
Total Petroleum Hydrocarbons (TPH)	mg/L	10	NWTPH-Dx	0.1	1/quarter
<b>4. Air Transportation<sup>c</sup> (45xx)</b>					
Ammonia	mg/L	2.1	SM4500-NH3- GH	0.3	1/quarter
BOD <sub>5</sub>	mg/L	30	EPA 405.1 or SM 5210B	2	1/quarter
COD	mg/L	120	EPA 410.2	5	1/quarter
Nitrate/Nitrite, as N	mg/L	0.68	EPA 4500-NO3-E/F/H	0.10	1/quarter

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level <sup>a</sup>	Minimum Sampling Frequency <sup>b</sup>
5. Timber Product Industry (24xx), Paper and Allied Products (26xx)					
COD	mg/L	120	SM5220-D	10	1/quarter
TSS	mg/L	100	SM2540-D	5	1/quarter

- <sup>a</sup> The Permittee shall ensure laboratory results comply with the *quantitation level* specified in the table. However, if a Permittee knows that an alternate, less sensitive method (higher detection level and *quantitation level*) from 40 CFR Part 136 is sufficient to produce measurable results in their effluent, that method may be used for analysis.
- <sup>b</sup> 1/quarter means 1 sample taken each quarter, year-round.
- <sup>c</sup> For airports where a single permittee, or a combination of permitted facilities use more than 100,000 gallons of glycol-based deicing chemicals and/or 100 tons or more of urea on an average annual basis, monitor these additional four parameters in those outfalls that collect *runoff* from areas where deicing activities occur (SIC 4512-4581).

### C. Stormwater Discharges Subject to Effluent Limitation Guidelines

1. Permittees with discharges from the following activities shall comply with the effluent limits and monitor as specified in Condition S4 and Tables 4 and 5.
2. The *discharge* of the *pollutants* at a level more than that identified and authorized by this permit for these activities shall constitute a violation of the terms and conditions of this permit.
3. Permittees operating non-hazardous waste *landfills* subject to the provisions of 40 CFR Part 445 Subpart B shall not exceed the effluent limits<sup>3</sup> listed in Table 4.

<sup>3</sup> As set forth in 40 CFR Part 445 Subpart B, these numeric effluent limits apply to contaminated *stormwater* discharges from Municipal Solid Waste Landfills that have not been closed in accordance with 40 CFR 258.60, and to contaminated *stormwater* discharges from those landfills that are subject to the provisions of 40 CFR Part 257 except for discharges from any of the following facilities:

- (a) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives only wastes generated by the industrial or commercial operation directly associated with the landfill;
- (b) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes, provided that the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation, or that the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation;
- (c) landfills operated in conjunction with CWT facilities subject to 40 CFR Part 437, so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills; or
- (d) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities, so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

**Table 4: Effluent Limits Applicable to Non-Hazardous Waste Landfills Subject to 40 CFR Part 445 Subpart B**

Parameter	Units	Average Monthly <sup>a</sup>	Maximum Daily <sup>b</sup>	Analytical Method <sup>c</sup>	Laboratory Quantitation Level <sup>d</sup>	Minimum Sampling Frequency <sup>e</sup>
BOD <sub>5</sub>	mg/L	37	140	EPA 405.1 or SM 5210B	2	1/quarter
TSS	mg/L	27	88	SM2540-D	5	1/quarter
Ammonia (total as N)	mg/L	4.9	10	SM4500-NH <sub>3</sub> -GH.	0.3	1/quarter
Alpha Terpineol	µg/L	16	33	EPA 625	5	1/quarter
Benzoic Acid	µg/L	71	120	EPA 625	50	1/quarter
p-Cresol (4-methylphenol)	µg/L	14	25	EPA 8270D	10 µg/L	1/quarter
Phenol	µg/L	15	26	EPA 625	4.0	1/quarter
Zinc, Total	µg/L	110	200	EPA 200.8	2.5	1/quarter
pH	SU	Between 6.0 and 9.0		Meter/Paper <sup>e</sup>	±0.1	1/quarter

- <sup>a</sup> Average monthly effluent limit means the highest allowable average of daily discharges over a calendar month. To calculate the *discharge* value to compare to the limit, you add the value of each daily discharge measured during a calendar month and divide this sum by the total number of daily discharges measured. If only one sample is taken during the calendar month, the average monthly effluent limitation applies to that sample. If only one sample is taken during the reporting period, the average monthly effluent limitation applies to that sample.
- <sup>b</sup> Maximum daily effluent limit means the highest allowable daily discharge. The daily *discharge* means the *discharge of a pollutant* measured during a calendar day. The daily discharge is the average measurement of the *pollutant* over the day; this does not apply to pH.
- <sup>c</sup> Or other equivalent EPA-approved method with the same or lower *quantitation level*.
- <sup>d</sup> The Permittee shall ensure laboratory results comply with the *quantitation level* specified in the table. However, if a Permittee knows that an alternate, less sensitive (higher detection level and *quantitation level*) from 40 CFR Part 136 method will provide measurable results in its effluent, it may use that method for analysis.
- <sup>e</sup> 1/quarter means 1 sample taken each quarter, year-round.

**D. Conditionally Authorized Non-Stormwater Discharges**

1. The categories and sources of non-*stormwater* discharges identified in Condition S5. D.2, below, are conditionally authorized, provided:
  - a. The *discharge* is otherwise consistent with the terms and conditions of this permit, including Condition S5, S6 and S10.

- b. The Permittee conducts the following assessment for each non-*stormwater discharge* (except for S5.D.2.a & f) and documents the assessment in the SWPPP, consistent with Condition S3.B.2. The Permittee shall:
    - i. Identify each source.
    - ii. Identify the location of the discharge into the *stormwater* collection system.
    - iii. Characterize the discharge including estimated flows or flow volume, and likely *pollutants* which may be present.
    - iv. Evaluate and implement available and reasonable *source control BMPs* to reduce or eliminate the discharge.
    - v. Evaluate compliance of the *discharge* with the state *water quality standards*.
    - vi. Identify appropriate BMPs for each discharge to control *pollutants* and or flow volumes.
2. Conditionally authorized non-*stormwater* discharges include:
    - a. Discharges from fire fighting activities.
    - b. Fire protection system flushing, testing, and maintenance.
    - c. Discharges of potable water including water line flushing, provided that water line flushing must be de-chlorinated prior to discharge.
    - d. Uncontaminated air conditioning or compressor condensate.
    - e. Landscape watering and irrigation drainage.
    - f. Uncontaminated *ground water* or spring water.
    - g. Discharges associated with dewatering of foundations, footing drains, or utility vaults where flows are not contaminated with process materials such as solvents.
    - h. Incidental windblown mist from cooling towers that collects on rooftops or areas adjacent to the cooling tower. This does not include intentional discharges from cooling towers such as piped cooling tower blow down or drains.

#### E. Prohibited Discharges

Unless authorized by a separate NPDES or state waste *discharge* permit, the following discharges are prohibited:

1. The discharge of *process wastewater* is not authorized. *Stormwater* that commingles with *process wastewater* is considered *process wastewater*.
2. *Illicit discharges* are not authorized by this permit. Conditionally authorized non-*stormwater* discharges in compliance with Condition S5.D are not *illicit discharges*.

F. General Prohibitions

Permittees shall manage *stormwater* to prevent the *discharge* of:

1. Synthetic, natural or processed oil or oil-containing products as identified by an oil sheen, and
2. Trash and floating debris.

**S6. DISCHARGES TO 303(D)-LISTED OR TMDL WATERS**

A. General Requirements for Discharges to 303(d)-listed Waters

Permittees with coverage under this permit that *discharge* to a *303(d)-listed water body* shall conduct sampling and inspections in accordance with Conditions S4, S6, and S7.

B. Limits on Coverage for New Discharges to TMDL or 303(d)-listed Waters

Facilities that meet the definition of “*new discharger*” and *discharge* to a *303(d) listed waterbody* are not eligible for coverage under this permit unless the *facility*:

1. Prevents all exposure to *stormwater* of the *pollutant(s)* for which the waterbody is impaired, and retains documentation of procedures taken to prevent exposure onsite with its SWPPP; or
2. Documents that the *pollutant(s)* for which the waterbody is impaired is not present at the *facility*, and retains documentation of this finding with the SWPPP; or
3. Provides *Ecology* with data to support a showing that the *discharge* is not expected to cause or contribute to an exceedance of a water quality standard, and retain such data onsite with its SWPPP. The *facility* must provide data and other technical information to *Ecology* sufficient to demonstrate:
  - a. For discharges to waters without an *EPA* approved or established *TMDL*, that the *discharge* of the *pollutant* for which the water is impaired will meet in-stream water quality criteria at the point of discharge to the waterbody; or
  - b. For discharges to waters with an *EPA* approved or established *TMDL*, that there are sufficient remaining *wasteload allocations* in an *EPA* approved or established *TMDL* to allow industrial *stormwater discharge* and that existing *dischargers* to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with *water quality standards*.

Facilities are eligible for coverage under this permit if *Ecology* issues permit coverage based upon an affirmative determination that the *discharge* will not cause or contribute to the existing impairment.

C. Additional Sampling Requirements and Effluent Limits for Discharges to Certain 303(d)-listed Waters

1. Beginning July 1, 2010, Permittees discharging to a *303(d)-listed water body* that does not have an *EPA*-approved *total maximum daily load (TMDL)* shall comply with

the applicable sampling requirements and effluent limits in Table 5, unless a compliance schedule is requested and granted in accordance with S6.C.1.b&c.

- a. Facilities subject to these limits include, but may not be limited to, facilities listed in Appendix 4.
- b. For purposes of this condition, “applicable sampling requirements and effluent limits” means the sampling and effluent limits in Table 5 that correspond to the specific parameter(s) the receiving water is *303(d)-listed* for at the time of permit coverage, or Total Suspended Solids (TSS) if the waterbody is *303(d)-listed* for any *sediment* quality parameter at the time of permit coverage.
- c. Permittees may request a compliance schedule for relief from the July 1, 2010 deadline to comply with an applicable effluent limit in Condition S6.C. Permittees shall submit requests for compliance schedules in writing to *Ecology* no later than January 31, 2010 and shall include the company name, *facility* location, industrial *stormwater* permit number, and the reason for requesting a compliance schedule.
- d. *Ecology* will consider all compliance schedule requests submitted by January 31, 2010. If *Ecology* determines that a Permittee is unable to comply with the applicable effluent limits by July 1, 2010, *Ecology* will establish a compliance schedule to require compliance as soon as possible, and no later than twenty-four months, or two complete wet seasons, after the effective date of this permit. *Ecology* will send its decision regarding the request for compliance schedule to the Permittee no sooner than April 1, 2010.
- e. For purposes of this condition, “wet season” means Oct 1<sup>st</sup> through June 30<sup>th</sup>.

**Table 5: Sampling and Effluent Limits Applicable to Discharges to 303(d)-listed Waters**

Parameter	Units	Effluent Limit		Analytical Method <sup>a</sup>	Laboratory Quantitation Level <sup>b</sup>	Sampling Frequency
		Fresh Water	Marine			
Turbidity	NTUs	25	25	EPA 180.1 Meter	0.5	1/quarter <sup>c</sup>
pH	SU	<sup>i</sup>	Between 7.0 and 8.5	Meter <sup>d</sup>	±0.5	1/quarter <sup>c</sup>
Fecal Coliform Bacteria	# colonies/100 mL	<sup>h</sup>	<sup>h</sup>	SM 9222D	20 CFU/100 mL	1/quarter <sup>c</sup>
TSS <sup>e</sup>	mg/L	30	30	SM2540-D	5	1/quarter <sup>c</sup>
Phosphorus, Total	mg/L	<sup>f</sup>	<sup>f</sup>	EPA 365.1	0.01	1/quarter <sup>c</sup>
Ammonia, total as N	mg/L	<sup>f</sup>	<sup>f</sup>	SM 4500 NH <sub>3</sub> -GH	0.3	1/quarter <sup>c</sup>
Copper, Total	µg/L	<sup>f</sup>	<sup>f</sup>	EPA 200.8	2.0	1/quarter <sup>c</sup>
Lead, Total	µg/L	<sup>f</sup>	<sup>f</sup>	EPA 200.8	0.5	1/quarter <sup>c</sup>
Mercury, Total	µg/L	2.1	1.8	EPA 1631E	0.0005	1/quarter <sup>c</sup>
Zinc, Total	µg/L	<sup>f</sup>	<sup>f</sup>	EPA 200.8	2.5	1/quarter <sup>c</sup>
Pentachlorophenol	µg/L	9 <sup>g</sup>	<sup>f</sup>	EPA 625	1.0	1/quarter <sup>c</sup>

<sup>a</sup> Or other equivalent method with the same reporting level.

<sup>b</sup> The Permittee shall ensure laboratory results comply with the *quantitation level* specified in the table.

<sup>c</sup> 1/quarter means 1 sample taken each quarter, e.g., Q1 = Jan 1 – March 31<sup>st</sup>, Q2 = April 1 – June 30<sup>th</sup>, etc.

<sup>d</sup> Permittees shall use either a calibrated pH meter consistent with EPA 9040 or an approved state method.

<sup>e</sup> A Permittee who discharges to a water body *303(d)-listed* for any *sediment* quality parameter shall sample the *discharge* for TSS.

<sup>f</sup> Site-specific effluent limitation will be assigned at the time of permit coverage.

<sup>g</sup> Based on a pH of 7.0.

<sup>h</sup> The effluent limit is the water recreation bacteria criteria (WAC 173-201A) applicable to the receiving waterbody.

<sup>i</sup> The effluent limit for a Permittee who discharges to a fresh water body *303(d)-listed* for pH is: Between 6.0 and 8.5, if the 303(d)-listing is for high pH only; Between 6.5 and 9.0, if the 303(d)-listing is for low pH only; and Between 6.5 and 8.5 if the 303(d)-listing is for both low and high pH. All pH effluent limits are applied end-of-pipe.

#### D. Requirements for Discharges to Waters with Applicable TMDLs

2. The Permittee shall comply with *applicable TMDL* determinations. *Applicable TMDLs* or *TMDL* determinations are *TMDLs* which have been completed by the issuance date of this permit, or which have been completed prior to the date that the Permittee's *application* is received by *Ecology*, whichever is later. *Ecology* will list the Permittee's requirements to comply with this condition on the letter of permit coverage.
3. *TMDL* requirements associated with *TMDLs* completed after the issuance date of this permit only become effective if they are imposed through an administrative order issued by *Ecology*.

4. Where *Ecology* has established a *TMDL wasteload allocation* and sampling requirements for the Permittee's discharge, the Permittee shall comply with all requirements of the *TMDL* as listed in Appendix 5.
5. Where *Ecology* has established a *TMDL general wasteload allocation* for industrial *stormwater* discharges for a parameter present in the Permittee's discharge, but has not identified specific requirements, *Ecology* will assume the Permittee's compliance with the terms and conditions of the permit complies with the approved *TMDL*.
6. Where *Ecology* has not established a *TMDL wasteload allocation* for industrial *stormwater* discharges for a parameter present in the Permittee's discharge, but has not excluded these discharges, *Ecology* will assume the Permittee's compliance with the terms and conditions of this permit complies with the approved *TMDL*.
7. Where a *TMDL* for a parameter present in the Permittee's *discharge* specifically precludes or prohibits discharges of *stormwater* associated with *industrial activity*, the Permittee is not eligible for coverage under this permit.

## S7. INSPECTIONS

### A. Inspection Frequency and Personnel

1. The Permittee shall conduct and document visual inspections of the site each month.
2. The Permittee shall ensure that inspections are conducted by *qualified personnel*.

### B. Inspection Components

Each inspection shall include:

1. Observations made at *stormwater* sampling locations and areas where *stormwater* associated with *industrial activity* is discharged off-site; or discharged to *waters of the state*, or to a *storm sewer* system that drains to *waters of the state*.
2. Observations for the presence of floating materials, visible oil sheen, discoloration, *turbidity*, odor, etc. in the *stormwater* discharge(s).
3. Observations for the presence of *illicit discharges* such as *domestic wastewater*, *noncontact cooling water*, or *process wastewater* (including *leachate*).
  - a. If an *illicit discharge* is discovered, the Permittee shall notify *Ecology* within seven days.
  - b. The Permittee shall eliminate the *illicit discharge* within 30 days.
4. A verification that the descriptions of potential *pollutant* sources required under this permit are accurate.
5. A verification that the site map in the SWPPP reflects current conditions.
6. An assessment of all BMPs that have been implemented, noting all of the following:
  - a. Effectiveness of BMPs inspected.
  - b. Locations of BMPs that need maintenance.

- c. Reason maintenance is needed and a schedule for maintenance.
- d. Locations where additional or different BMPs are needed and the rationale for the additional or different BMPs.

C. Inspection Results

- 1. The Permittee shall record the results of each inspection in an inspection report or checklist and keep the records on-site for *Ecology* review. The Permittee shall ensure each inspection report documents the observations, verifications and assessments required in S7.B and includes:
  - a. Time and date of the inspection.
  - b. Locations inspected.
  - c. Statements that, in the judgment of 1) the person conducting the site inspection, and 2) the person described in Condition G2.A, the site is either in compliance or out of compliance with the terms and conditions of the SWPPP and this permit.
  - d. A summary report and a schedule of implementation of the remedial actions that the Permittee plans to take if the site inspection indicates that the site is out of compliance. The remedial actions taken must meet the requirements of the SWPPP and the permit.
  - e. Name, title, and signature of the person conducting site inspection; and the following statement: "I certify that this report is true, accurate, and complete, to the best of my knowledge and belief."
  - f. Certification and signature of the person described in Condition G2.A, or a duly authorized representative of the *facility*, in accordance with Condition G.2.B.

D. Reports of Non-Compliance

The Permittee shall prepare reports of non-compliance identified during an inspection in accordance with the requirements of Condition S9.E.

**S8. CORRECTIVE ACTIONS**

A. Implementation of Source Control and Treatment BMPs from Previous Permit

In addition to the Corrective Action Requirements of S8.B-D, Permittees shall implement any applicable Level 1, 2 or 3 Responses required by the previous Industrial Stormwater *General Permit(s)*. Permittees shall continue to operate and/or maintain any source control or *treatment BMPs* related to Level 1, 2 or 3 Responses implemented prior to the effective date of this permit.

B. Level One Corrective Actions – Operational Source Control BMPs

Permittees that exceed any applicable *benchmark* value(s) in Table 2 or Table 3, shall complete a Level 1 Corrective Action for each parameter exceeded in accordance with the following:

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3, and contains the correct BMPs from the applicable *Stormwater Management Manual*.
2. Make appropriate revisions to the SWPPP to include additional *Operational Source Control BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges. The Permittee shall sign and certify the revised SWPPP in accordance with S3.A.6.
3. Summarize the Level 1 Corrective Actions in the Annual Report (Condition S9.B)
4. **Level One Deadline:** The Permittee shall fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than the DMR due date for the quarter the *benchmark* was exceeded.

C. Level Two Corrective Actions – Structural Source Control BMPs

Permittees that exceed an applicable *benchmark* value (for a single parameter) for any two quarters during a calendar year shall complete a Level 2 Corrective Action in accordance with the following<sup>4</sup>:

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3.
2. Make appropriate revisions to the SWPPP to include additional *Structural Source Control BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges. The Permittee shall sign and certify the revised SWPPP in accordance with S3.A.6.
3. Summarize the Level 2 Corrective Actions (planned or taken) in the Annual Report (Condition S9.B).
4. **Level 2 Deadline:** The Permittee shall fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than September 30<sup>th</sup> the following year.
  - a. If installation of necessary *Structural Source Control BMPs* is not feasible by September 30<sup>th</sup> the following year, *Ecology* may approve additional time, by approving a *Modification of Permit Coverage*.
  - b. If installation of *Structural Source Control BMPs* is not feasible or not necessary to prevent discharges that may cause or contribute to a violation of a water quality standard, *Ecology* may waive the requirement for additional *Structural Source Control BMPs* by approving a *Modification of Permit Coverage*.
  - c. To request a time extension or waiver, a Permittee shall submit a detailed explanation of why it is making the request (technical basis), and a *Modification of Coverage* form to *Ecology* in accordance with Condition S2.B, by June 1<sup>st</sup> prior to Level 2 Deadline. *Ecology* will approve or deny the request within 60 days of receipt of a complete *Modification of Coverage* request.

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<sup>4</sup> Facilities that continue to exceed benchmarks after a Level 2 Corrective Action is triggered, but prior to the Level 2 Deadline, are not required to complete another Level 2 or 3 Corrective Action the following year for the same parameter. However, a Level 1 Corrective Action is required each time a benchmark is exceeded.

#### D. Level Three Corrective Actions – Treatment BMPs

Permittees that exceed an applicable *benchmark* value (for a single parameter) for any three quarters during a calendar year shall complete a Level 3 Corrective Action in accordance with the following<sup>5</sup>:

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3.
2. Make appropriate revisions to the SWPPP to include additional *Treatment BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges.
  - a. The Permittee shall sign and certify the revised SWPPP in accordance with S3.A.6.
  - b. A licensed professional engineer, geologist, hydrogeologist, or Certified Professional in Storm Water Quality (CPSWQ) shall design and stamp the portion of the SWPPP that addresses *stormwater* treatment structures or processes.
    - i. *Ecology* may waive the requirement for a licensed or certified professional upon request of the Permittee and demonstration that the Permittee or treatment device vendor can properly design and install the treatment device.
    - ii. *Ecology* will not waive the Level 3 requirement for a licensed or certified professional more than one time during the permit cycle.
3. Summarize the Level 3 Corrective Actions (planned or taken) in the Annual Report (Condition S9.B).
4. **Level 3 Deadline:** The Permittee shall fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than September 30<sup>th</sup> the following year.
  - a. If installation of necessary *Treatment BMPs* is not feasible by the Level 3 Deadline; *Ecology* may approve additional time by approving a *Modification of Permit Coverage*.
  - b. If installation of *Treatment BMPs* is not feasible or not necessary to prevent discharges that may cause or contribute to violation of a water quality standard, *Ecology* may waive the requirement for *Treatment BMPs* by approving a *Modification of Permit Coverage*.
  - c. To request a time extension or waiver, a Permittee shall submit a detailed explanation of why it is making the request (technical basis), and a Modification of Coverage form to *Ecology* in accordance with Condition S2.B, by June 1<sup>st</sup> prior to the Level 3 Deadline. *Ecology* will approve or deny the request within 60 days of receipt of a complete *Modification of Coverage* request.

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<sup>5</sup> Facilities that continue to exceed benchmarks after a Level 3 Corrective Action is triggered, but prior to the Level 3 Deadline, are not required to complete another Level 2 or 3 Corrective Action the following year for the same parameter. However, a Level 1 Corrective Action is required each time a benchmark is exceeded.

## S9. REPORTING AND RECORDKEEPING

### A. Discharge Monitoring Reports

1. The Permittee shall submit sampling data obtained during each reporting period on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by *Ecology*.
2. The Permittee shall submit sampling results within 45 days of the end of each reporting period.
3. The first reporting period shall begin on the effective date of permit coverage.
4. Upon permit coverage, the Permittee shall ensure that DMRs are postmarked or received by *Ecology* by the DMR Due Dates below:

**Table 7: Reporting Dates and DMR Due Dates**

Reporting Period	Months	DMR Due Date
1 <sup>st</sup>	January-March	May 15
2 <sup>nd</sup>	April-June	August 14
3 <sup>rd</sup>	July-Sept	November 14
4 <sup>th</sup>	October-December	February 14

5. DMRs shall be submitted using *Ecology*'s WebDMR system or by mail to the following address:  

Department of Ecology  
Water Quality Program – Industrial Stormwater  
PO Box 47696  
Olympia, Washington 98504-7696
6. Upon permit coverage, the Permittee shall submit a DMR each reporting period, whether or not the *facility* has discharged *stormwater* from the site.
  - a. If no *stormwater* sample was obtained from the site during a given reporting period, the Permittee shall submit the DMR form indicating “no sample obtained”, or “no discharge during the quarter”, as applicable.
  - b. If a Permittee has suspended sampling for a parameter due to consistent attainment, the Permittee shall submit a DMR and indicate that it has achieved Consistent Attainment for that parameter(s).

### B. Annual Reports

1. The Permittee shall submit a complete and accurate Annual Report to the Department of *Ecology* no later than May 15<sup>th</sup> of each year (except 2010) using a form provided by or otherwise approved by *Ecology*.
2. The annual report shall include corrective action documentation as required in S8.B-D. If corrective action is not yet completed at the time of submission of this annual report, the Permittee must describe the status of any outstanding corrective action(s).

3. Permittees shall include the following information with each annual report. The Permittee shall:
  - a. Identify the condition triggering the need for corrective action review.
  - b. Describe the problem(s) and identify the dates they were discovered.
  - c. Summarize any Level 1, 2 or 3 corrective actions completed during the previous calendar year and include the dates it completed the corrective actions.
  - d. Describe the status of any Level 2 or 3 corrective actions triggered during the previous calendar year, and identify the date it expects to complete corrective actions.
4. Permittees shall retain a copy of all annual reports onsite for *Ecology* review.

C. Records Retention

1. The Permittee shall retain the following documents onsite for a minimum of five years:
  - a. A copy of this permit.
  - b. A copy of the permit coverage letter.
  - c. Records of all sampling information specified in Condition S4.B.3.
  - d. Inspection reports including documentation specified in Condition S7.
  - e. Any other documentation of compliance with permit requirements.
  - f. All equipment calibration records.
  - g. All BMP maintenance records.
  - h. All original recordings for continuous sampling instrumentation.
  - i. Copies of all laboratory reports as described in Condition S3.B.4.
  - j. Copies of all reports required by this permit.
  - k. Records of all data used to complete the *application* for this permit.
2. The Permittee shall extend the period of records retention during the course of any unresolved litigation regarding the *discharge of pollutants* by the Permittee, or when requested by *Ecology*.
3. The Permittee shall make all plans, documents and records required by this permit immediately available to *Ecology* or the local jurisdiction upon request; or within 14 days of a written request from *Ecology*.

D. Additional Sampling by the Permittee

If the Permittee samples any *pollutant* at a designated sampling point more frequently than required by this permit, then the Permittee shall include the results in the calculation and reporting of the data submitted in the Permittee's DMR.

#### E. Reporting Permit Violations

1. In the event the Permittee is unable to comply with any of the terms and conditions of this permit which may endanger human health or the environment, or the facility experiences any *bypass* or upset which causes an exceedance of any effluent limitation in the permit, the Permittee shall:
  - a. Immediately take action to minimize potential *pollution* or otherwise stop the noncompliance and correct the problem.
  - b. Immediately notify the appropriate *Ecology* regional office of the failure to comply.
  - c. Submit a detailed written report to *Ecology* within 30 days unless *Ecology* requests an earlier submission. The Permittee's report shall contain:
    - i. A description of the noncompliance, including exact dates and times.
    - ii. Whether the noncompliance has been corrected and, if not, when the noncompliance will be corrected.
    - iii. The steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
2. Compliance with the requirements of this section does not relieve the Permittee from responsibility to maintain continuous compliance with the terms and conditions of this permit or the resulting liability for failure to comply.

#### F. Public Access to SWPPP

The Permittee shall provide access to, or a copy of, the SWPPP to the public when requested in writing. Upon receiving a written request from the public for the SWPPP, the Permittee shall:

1. Provide a copy of the SWPPP to the requestor within 14 days of receipt of the written request; or
2. Notify the requestor within 10 days of receipt of the written request of the location and times within normal business hours when the requestor may view the SWPPP, and provide access to the SWPPP within 14 days of receipt of the written request; or
3. Provide a copy of the plans and records to *Ecology*, where the requestor may view the records, within 14 days of a request; or may arrange with the requestor for an alternative, mutually agreed upon location for viewing and/or copying of the plans and records. If access to the plans and records is provided at a location other than at an *Ecology* office, the Permittee will provide reasonable access to copying services for which it may charge a reasonable fee.

## **S10. COMPLIANCE WITH STANDARDS**

- A. Discharges shall not cause or contribute to a violation of *Surface Water Quality Standards* (Chapter 173-201A WAC), *Ground Water Quality Standards* (Chapter 173-200 WAC), *Sediment Management Standards* (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (*40 CFR* 131.36). Discharges that are not in compliance with these standards are prohibited.
- B. *Ecology* will presume compliance with *water quality standards*, unless *discharge* monitoring data or other site specific information demonstrates that a discharge causes or contributes to violation of *water quality standards*, when the Permittee is:
  - 1. In full compliance with all permit conditions, including planning, sampling, monitoring, reporting, and recordkeeping conditions.
  - 2. Fully implementing storm water *best management practices* contained in storm water technical manuals approved by the department, or practices that are *demonstrably equivalent* to practices contained in storm water technical manuals approved by *Ecology*, including the proper selection, implementation, and maintenance of all applicable and appropriate *best management practices* for on-site *pollution* control.
- C. Prior to the *discharge* of *stormwater* and non-stormwater to *waters of the state*, the Permittee shall apply all known and reasonable methods of prevention, control, and treatment (*AKART*). To comply with this condition, the Permittee shall prepare and implement an adequate SWPPP, with all applicable and appropriate BMPs, including the BMPs necessary to meet the standards identified in Condition S10.A, and shall install and maintain the BMPs in accordance with the SWPPP, applicable SWMMs, and the terms and conditions of this permit.

## **S11. PERMIT FEES**

- A. The Permittee shall pay permit fees assessed by *Ecology* and established in Chapter 173-224 WAC.
- B. *Ecology* will continue to assess permit fees until it terminates a permit in accordance with Special Condition S13 or revoked in accordance with General Condition G5.

## **S12. SOLID AND LIQUID WASTE MANAGEMENT**

The Permittee shall not allow solid waste material or *leachate* to cause violations of the State *Surface Water Quality Standards* (Chapter 173-201A WAC), the *Ground Water Quality Standards* (Chapter 173-200 WAC) or the *Sediment Management Standards* (Chapter 173-204 WAC).

### **S13. NOTICE OF TERMINATION (NOT)**

#### **A. Conditions for a NOT**

*Ecology* may approve a *Notice of Termination* (NOT) request when the Permittee meets one or more of the following conditions:

1. All permitted *stormwater* discharges associated with *industrial activity* that are authorized by this permit cease because the *industrial activity* has ceased, and no *significant materials* or industrial *pollutants* remain exposed to *stormwater*.
2. The party that is responsible for permit coverage (signatory to *application*) sells or otherwise legally transfers responsibility for the *industrial activity*.
3. All *stormwater* discharges associated with *industrial activity* are prevented because the *stormwater* is redirected to a *sanitary sewer*, or discharged to ground (e.g., infiltration, etc.).

#### **B. Procedure for Obtaining Termination**

1. The Permittee shall apply for a NOT on a form specified by *Ecology* (NOT Form).
2. The Permittee seeking permit coverage termination shall sign the NOT in accordance with Condition G2. of this permit.
3. The Permittee shall submit the completed NOT form to *Ecology* at the address in Condition S9.A.5.

## GENERAL CONDITIONS

### G1. DISCHARGE VIOLATIONS

All discharges and activities authorized by this *general permit* shall be consistent with the terms and conditions of this *general permit*. Any *discharge* of any *pollutant* more frequently than, or at a level in excess of that identified and authorized by the *general permit*, shall constitute a violation of the terms and conditions of this permit.

### G2. SIGNATORY REQUIREMENTS

- A. All permit *applications* shall be signed:
1. In the case of corporations, by a responsible corporate officer of at least the level of vice president of a corporation.
  2. In the case of a partnership, by a general partner of a partnership.
  3. In the case of sole proprietorship, by the proprietor.
  4. In the case of a municipal, state, or other public *facility*, by either a principal executive officer or ranking elected official.
- B. All reports required by this permit and other information requested by *Ecology* shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
1. The authorization is made in writing by a person described above and submitted to the *Ecology*.
  2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated *facility*, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.
- C. Changes to authorization. If an authorization under paragraph G2.B.2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the *facility*, a new authorization satisfying the requirements of paragraph G2.B.2 above shall be submitted to *Ecology* prior to, or together with, any reports, information, or *applications* to be signed by an authorized representative.
- D. Certification. Any person signing a document under this section shall make the following certification:
- “I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that *qualified personnel* properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there

are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

### **G3. RIGHT OF INSPECTION AND ENTRY**

The Permittee shall allow an authorized representative of *Ecology*, upon the presentation of credentials and such other documents as may be required by law:

- A. To enter upon the premises where a *discharge* is located or where any records shall be kept under the terms and conditions of this permit.
- B. To have access to and copy, at reasonable times and at reasonable cost, any records required to be kept under the terms and conditions of this permit.
- C. To inspect, at reasonable times, any facilities, equipment (including sampling and control equipment), practices, methods, or operations regulated or required under this permit.
- D. To sample or monitor, at reasonable times, any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the *Clean Water Act*.

### **G4. GENERAL PERMIT MODIFICATION AND REVOCATION**

This permit may be modified, revoked and reissued, or terminated in accordance with the provisions of Chapter 173-226 WAC. Grounds for modification, revocation and reissuance, or termination include, but are not limited to, the following:

- A. When a change which occurs in the technology or practices for control or abatement of *pollutants* applicable to the category of *dischargers* covered under this permit.
- B. When effluent limitation guidelines or standards are promulgated pursuant to the CWA or Chapter 90.48 RCW, for the category of *dischargers* covered under this permit.
- C. When a water quality management plan containing requirements applicable to the category of *dischargers* covered under this permit is approved.
- D. When information is obtained which indicates that cumulative effects on the environment from *dischargers* covered under this permit are unacceptable.

### **G5. REVOCATION OF COVERAGE UNDER THE PERMIT**

- A. Pursuant with Chapter 43.21B RCW and Chapter 173-226 WAC, *Ecology* may terminate coverage for any *discharger* under this permit for cause. Cases where coverage may be terminated include, but are not limited to, the following:
  1. Violation of any term or condition of this permit.
  2. Obtaining coverage under this permit by misrepresentation or failure to disclose fully all relevant facts.
  3. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

4. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090.
  5. A determination that the permitted activity endangers human health or the environment, or contributes to *water quality standards* violations.
  6. Nonpayment of permit fees or penalties assessed pursuant to RCW 90.48.465 and Chapter 173-224 WAC.
  7. Failure of the Permittee to satisfy the public notice requirements of WAC 173-226-130(5), when applicable.
- B. *Ecology* may require any *discharger* under this permit to apply for and obtain coverage under an individual permit or another more specific *general permit*.
- C. Permittees who have their coverage revoked for cause according to WAC 173-226-240 may request temporary coverage under this permit during the time an individual permit is being developed, provided the request is made within 90 days from the time of revocation and is submitted along with a complete individual permit *application* form.

#### **G6. REPORTING A CAUSE FOR MODIFICATION**

The Permittee shall submit a new *application*, or a supplement to the previous *application*, whenever a material change to the *industrial activity* or in the quantity or type of *discharge* is anticipated which is not specifically authorized by this permit. This *application* shall be submitted at least 60 days prior to any proposed changes. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not relieve the Permittee of the duty to comply with the existing permit until it is modified or reissued.

#### **G7. COMPLIANCE WITH OTHER LAWS AND STATUTES**

Nothing in this permit shall be construed as excusing the Permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations.

#### **G8. DUTY TO REAPPLY**

The Permittee shall apply for permit renewal at least 180 days prior to the expiration date of this permit.

#### **G9. REMOVED SUBSTANCES**

Collected screenings, grit, solids, sludges, filter backwash, or other *pollutants* removed in the course of treatment or control of *stormwater* shall not be resuspended or reintroduced to the final effluent stream for *discharge* to state waters.

#### **G10. DUTY TO PROVIDE INFORMATION**

The Permittee shall submit to *Ecology*, within a reasonable time, all information which *Ecology* may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also submit to *Ecology*, upon request, copies of records required to be kept by this permit [40 CFR 122.41(h)].

#### **G11. OTHER REQUIREMENTS OF 40 CFR**

All other requirements of 40 CFR 122.41 and 122.42 are incorporated in this permit by reference.

#### **G12. ADDITIONAL SAMPLING**

*Ecology* may establish specific sampling requirements in addition to those contained in this permit by administrative order or permit modification.

#### **G13. PENALTIES FOR VIOLATING PERMIT CONDITIONS**

Any person who is found guilty of willfully violating the terms and conditions of this permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to \$10,000 and costs of prosecution, or by imprisonment at the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation.

Any person who violates the terms and conditions of this permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to \$10,000 for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation.

#### **G14. UPSET**

Definition – “Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of the following paragraph are met.

A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that: 1) an upset occurred and that the Permittee can identify the cause(s) of the upset; 2) the permitted *facility* was being properly operated at the time of the upset; 3) the Permittee submitted notice of the upset as required in condition S5.F; and 4) the Permittee complied with any remedial measures required under this permit.

In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

#### **G15. PROPERTY RIGHTS**

This permit does not convey any property rights of any sort, or any exclusive privilege.

#### **G16. DUTY TO COMPLY**

The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the *Clean Water Act* and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal *application*.

#### **G17. TOXIC POLLUTANTS**

The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the *Clean Water Act* for toxic *pollutants* within the time provided in the regulations that establish those standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

#### **G18. PENALTIES FOR TAMPERING**

The *Clean Water Act* provides that any person who falsifies, tampers with, or knowingly renders inaccurate any sampling device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this Condition, punishment shall be a fine of not more than \$20,000 per day of violation, or imprisonment of not more than four years, or both.

#### **G19. REPORTING PLANNED CHANGES**

The Permittee shall, as soon as possible, give notice to *Ecology* of planned physical alterations, modifications or additions to the permitted *industrial activity*, which will result in:

- A. The permitted *facility* being determined to be a new source pursuant to 40 CFR 122.29(b).

- B. A *significant process change*, as defined in the glossary of this permit.
- C. A change in the location of *industrial activity* that affects the Permittee's sampling requirements in Conditions S3, S4, S5, and S6.

Following such notice, permit coverage may be modified, or revoked and reissued pursuant to 40 CFR 122.62(a) to specify and limit any *pollutants* not previously limited. Until such modification is effective, any new or increased *discharge* in excess of permit limits or not specifically authorized by this permit constitutes a violation.

## **G20. REPORTING OTHER INFORMATION**

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit *application*, or submitted incorrect information in a permit *application* or in any report to *Ecology*, it shall promptly submit such facts or information.

## **G21. REPORTING ANTICIPATED NON-COMPLIANCE**

The Permittee shall give advance notice to *Ecology* by submission of a new *application*, or supplement to the existing *application*, at least 45 days prior to commencement of such discharges, of any *facility* expansions, production increases, or other planned changes, such as process modifications, in the permitted *facility* or activity which may result in noncompliance with permit limits or conditions. Any maintenance of facilities, which might necessitate unavoidable interruption of operation and degradation of effluent quality, shall be scheduled during non-critical water quality periods and carried out in a manner approved by *Ecology*.

## **G22. REQUESTS TO BE EXCLUDED FROM COVERAGE UNDER THE PERMIT**

- A. Any *discharger* authorized by this permit may request to be excluded from coverage under the *general permit* by applying for an individual permit.
- B. The *discharger* shall submit to *Ecology* an *application* as described in WAC 173-220-040 or WAC 173-216-070, whichever is applicable, with reasons supporting the request. These reasons shall fully document how an individual permit will apply to the applicant in a way that the *general permit* cannot.
- C. *Ecology* may make specific requests for information to support the request. *Ecology* shall either issue an individual permit or deny the request with a statement explaining the reason for the denial.
- D. When an individual permit is issued to a *discharger* otherwise subject to the industrial *stormwater general permit*, the applicability of the industrial *stormwater general permit* to that Permittee is automatically terminated on the effective date of the individual permit.

## **G23. APPEALS**

- A. The terms and conditions of this *general permit*, as they apply to the appropriate class of *dischargers*, are subject to appeal by any person within 30 days of issuance of this *general permit*, in accordance with Chapter 43.21B RCW, and Chapter 173-226 WAC.
- B. The terms and conditions of this *general permit*, as they apply to an individual *discharger*, are appealable in accordance with Chapter 43.21B RCW within 30 days of the effective date of coverage of that *discharger*. Consideration of an appeal of *general permit* coverage of an individual *discharger* is limited to the *general permit*'s applicability or nonapplicability to that individual *discharger*.
- C. The appeal of *general permit* coverage of an individual *discharger* does not affect any other *dischargers* covered under this *general permit*. If the terms and conditions of this *general permit* are found to be inapplicable to any individual *discharger(s)*, the matter shall be remanded to *Ecology* for consideration of issuance of an individual permit or permits.

## **G24. SEVERABILITY**

The provisions of this permit are severable, and if any provision of this permit, or *application* of any provision of this permit to any circumstance, is held invalid, the *application* of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

## **G25. BYPASS PROHIBITED**

*Bypass*, which is the intentional diversion of waste streams from any portion of a treatment facility, is prohibited, and *Ecology* may take enforcement action against a Permittee for *bypass* unless one of the following circumstances (A, B, or C) is applicable.

A. *Bypass for Essential Maintenance without the Potential to Cause Violation of Permit Limits or Conditions*

*Bypass* is authorized if it is for essential maintenance and does not have the potential to cause violations of limitations or other conditions of this permit, or adversely impact public health as determined by *Ecology* prior to the *bypass*. The Permittee must submit prior notice, if possible, at least ten (10) days before the date of the *bypass*.

B. *Bypass Which is Unavoidable, Unanticipated, and Results in Noncompliance of this Permit*

This *bypass* is permitted only if:

1. *Bypass* is unavoidable to prevent loss of life, personal injury, or *severe property damage*. "*Severe property damage*" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a *bypass*.

2. There are no feasible alternatives to the *bypass*, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment downtime (but not if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a *bypass* which occurred during normal periods of equipment downtime or preventative maintenance), or transport of untreated wastes to another treatment *facility*.
3. *Ecology* is properly notified of the *bypass* as required in condition S3E of this permit.

C. *Bypass* which is Anticipated and has the Potential to Result in Noncompliance of this Permit

The Permittee must notify *Ecology* at least thirty (30) days before the planned date of *bypass*. The notice must contain (1) a description of the *bypass* and its cause; (2) an analysis of all known alternatives which would eliminate, reduce, or mitigate the need for bypassing; (3) a cost-effectiveness analysis of alternatives including comparative resource damage assessment; (4) the minimum and maximum duration of *bypass* under each alternative; (5) a recommendation as to the preferred alternative for conducting the *bypass*; (6) the projected date of *bypass* initiation; (7) a statement of compliance with SEPA; (8) a request for modification of *water quality standards* as provided for in WAC 173-201A-410, if an exceedance of any water quality standard is anticipated; and (9) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the *bypass*.

For probable construction bypasses, the need to *bypass* is to be identified as early in the planning process as possible. The analysis required above must be considered during preparation of the engineering report or facilities plan and plans and specifications and must be included to the extent practical. In cases where the probable need to *bypass* is determined early, continued analysis is necessary up to and including the construction period in an effort to minimize or eliminate the *bypass*.

*Ecology* will consider the following prior to issuing an administrative order for this type *bypass*:

1. If the *bypass* is necessary to perform construction or maintenance-related activities essential to meet the requirements of this permit.
2. If there are feasible alternatives to *bypass*, such as the use of auxiliary treatment facilities, retention of untreated wastes, stopping production, maintenance during normal periods of equipment down time, or transport of untreated wastes to another treatment *facility*.
3. If the *bypass* is planned and scheduled to minimize adverse effects on the public and the environment.

After consideration of the above and the adverse effects of the proposed *bypass* and any other relevant factors, *Ecology* will approve or deny the request. The public must be notified and given an opportunity to comment on *bypass* incidents of significant duration, to the extent feasible. Approval of a request to *bypass* will be by administrative order issued by *Ecology* under RCW 90.48.120.

## APPENDIX 1 - ACRONYMS

BMP	Best Management Practice
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
CWA	Centralized Waste Treatment
EPA	Environmental Protection Agency
ESC	Erosion and Sediment Control
FWPCA	Federal Water Pollution Control Act
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
SARA	Superfund Amendment and Reauthorization Act
SEPA	State Environmental Policy Act
SIC	Standard Industrial Classification
SMCRA	Surface Mining Control and Reclamation Act
SWMM	Stormwater Management Manual
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WQ	Water Quality

## APPENDIX 2 - DEFINITIONS

40 CFR means Title 40 of the Code of Federal Regulations, which is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.

303(d)-listed water body means waterbodies as listed as Category 5 on Washington State's Water Quality Assessment.

Air Emission means a release of air contaminants into the ambient air.

AKART is an acronym for “all known, available, and reasonable methods of prevention, control, and treatment.” AKART represents the most current methodology that can be reasonably required for preventing, controlling, or abating the *pollutants* and controlling *pollution* associated with a discharge.

Applicable TMDL means any *TMDL* which has been completed either before the issuance date of this permit or the date the permittee first obtains coverage under this permit, whichever is later.

Application means a request for coverage under this *general permit* pursuant to WAC 173-226-200. Also called a *Notice of Intent (NOI)*.

Best Management Practices (BMPs - general definition) means schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the *pollution of waters of the state*. BMPs include treatment systems, operating procedures, and practices to control: plant site *runoff*, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. In this permit BMPs are further categorized as operational source control, structural source control, *erosion* and *sediment* control, and *treatment BMPs*.

Benchmark means a *pollutant* concentration used as a permit threshold, below which a pollutant is considered unlikely to cause a water quality violation, and above which it may. When pollutant concentrations exceed benchmarks, corrective action requirements take effect. Benchmark values are not *water quality standards* and are not numeric effluent limitations; they are indicator values.

Bypass means the intentional diversion of waste streams from any portion of a treatment *facility*.

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

Combined Sewer means a sewer which has been designed to serve as a *sanitary sewer* and a *storm sewer*, and into which inflow is allowed by local ordinance.

Construction Activity means clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, industrial buildings, and demolition activity.

Control Plan means a *total maximum daily load (TMDL)* determination, restrictions for the protection of endangered species, a *ground water* management plan, or other limitations that regulate or set limits on discharges to a specific water body or *ground water* recharge area.

Demonstrably Equivalent means that the technical basis for the selection of all storm water *best management practices* are documented within a storm water *pollution* prevention plan. The storm water *pollution* prevention plan must document: 1) The method and reasons for choosing the storm water *best management practices* selected; 2) The *pollutant* removal performance expected from the practices selected; 3) The technical basis supporting the performance claims for the practices selected, including any available existing data concerning field performance of the practices selected; 4) An assessment of how the selected practices will comply with state *water quality standards*; and 5) An assessment of how the selected practices will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment.

Detention means the temporary storage of *stormwater* to improve quality and/or to reduce the mass flow rate of discharge.

Discharge [of a pollutant] means any addition of any *pollutant* or combination of pollutants to waters of the United States from any point source. This definition includes additions of pollutants into waters of the United States from: surface *runoff* which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, *municipality*, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works.

Discharger means an owner or operator of any *facility* or activity subject to regulation under Chapter 90.48 RCW or the Federal *Clean Water Act*.

Domestic Wastewater means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such *ground water* infiltration or surface waters as may be present.

Ecology means the Washington State Department of *Ecology*.

EPA means the United States Environmental Protection Agency.

Equivalent BMPs means operational, source control, treatment, or innovative BMPs which result in equal or better quality of *stormwater discharge* to surface water or to *ground water* than BMPs selected from the SWMM.

Erosion means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

Erosion and Sediment Control BMPs means BMPs that are intended to prevent *erosion* and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, and *sediment* traps and ponds.

Existing Facility means a *facility* that was in operation prior to the effective date of this permit. It also includes any *facility* that is not categorically included for coverage but is in operation when identified by *Ecology* as a *significant contributor of pollutants*.

Facility means any NPDES “point source” (including land or appurtenances thereto) that is subject to regulation under the NPDES program. See *40 CFR* 122.2.

General Permit means a permit which covers multiple *dischargers* of a point source category within a designated geographical area, in lieu of individual permits being issued to each *discharger*.

Ground Water means water in a saturated zone or stratum beneath the land surface or a surface water body.

Illicit Discharge means any *discharge* that is not composed entirely of *stormwater* except (1) discharges authorized pursuant to a separate NPDES permit, or (2) conditionally authorized non-*stormwater* discharges identified in Condition S5.D.

Inactive Facility means a *facility* that no longer engages in business, production, providing services, or any auxiliary operation.

Industrial Activity means (1) the 11 categories of industrial activities identified in *40 CFR* 122.26(b)(14)(i-xi) that must apply for either coverage under this permit or no exposure certification, (2) any *facility* conducting any activities described in Table 1, and (3) identified by *Ecology* as a *significant contributor of pollutants*. Table 1 lists the 11 categories of industrial activities identified in *40 CFR* 122.26(b)(14)(i-xi) in a different format.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a *land application site*, surface impoundment, injection well, or waste pile.

Land Application Site means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Leachate means water or other liquid that has percolated through raw material, product or waste and contains substances in solution or suspension as a result of the contact with these materials.

Local Government means any county, city, or town having its own government for local affairs.

Material Handling means storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product.

Municipality means a political unit such as a city, town or county; incorporated for local self-government.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking, and reissuing, terminating, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

New Development means land disturbing activities, including Class IV -general forest practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of impervious surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.

New Discharge(r) means a facility from which there is a discharge, that did not commence the discharge at a particular site prior to August 13, 1979, which is not a new source, and which has never received a finally effective NPDES permit for discharges at that site. See 40 CFR 122.2.

New Facility means a facility that begins activities that result in a discharge or a potential discharge to waters of the state on or after the effective date of this general permit.

Noncontact Cooling Water means water used for cooling which does not come into direct contact with any raw material, intermediate product, waste product, or finished product.

Notice of Termination (NOT) means a request for termination of coverage under this general permit as specified by Special Condition S11 of this permit.

Operational Source Control BMPs means schedule of activities, prohibition of practices, maintenance procedures, employee training, good housekeeping, and other managerial practices to prevent or reduce the pollution of waters of the state. Not included are BMPs that require construction of pollution control devices.

Pollutant means the discharge of any of the following to waters of the state: dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste. This term does not include sewage from vessels within the meaning of section 312 of the FWPCA nor does it include dredged or fill material discharged in accordance with a permit issued under section 404 of the FWPCA.

Pollution means contamination or other alteration of the physical, chemical, or biological properties of waters of the state; including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial,

industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish, or other aquatic life.

Process Wastewater means any water which, during manufacturing or processing, comes into direct contact or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Qualified Personnel means those who possess the knowledge and skills to assess conditions and activities that could impact *stormwater* quality at the *facility*, and evaluate the effectiveness of *best management practices* required by this permit.

Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) means the lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Reasonable Potential means the likely probability for *pollutants* in the *discharge* to exceed the applicable water quality criteria in the receiving water body.

Redevelopment means on a site that is already substantially developed (i.e., has 35% or more of existing impervious surface coverage), the creation or addition of impervious surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities.

Regular Business Hours means those time frames when the *facility* is engaged in its primary production process, but does not include additional shifts or weekends when partial staffing is at the site primarily for maintenance and incidental production activities. *Regular business hours* do not include periods of time that the *facility* is inactive and *unstaffed*.

Representative [sample] means a sample of the *discharge* that accurately characterizes *stormwater runoff* generated in the designated drainage area of the *facility*.

Runoff means that portion of rainfall or snowmelt water not absorbed into the ground that becomes surface flow.

Sanitary Sewer means a sewer which is designed to convey *domestic wastewater*.

Sediment means the fragmented material that originates from the weathering and *erosion* of rocks, unconsolidated deposits, or unpaved yards, and is transported by, suspended in, or deposited by water.

Severe Property Damage means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent

loss of natural resources which can reasonably be expected to occur in the absence of a *bypass*. *Severe property damage* does not mean economic loss caused by delays in production.

*Significant Amount* means an amount of a *pollutant* in a *discharge* that is amenable to available and reasonable methods of prevention, control, or treatment; or an amount of a *pollutant* that has a *reasonable potential* to cause a violation of surface or *ground water quality standards* or *sediment management standards*.

*Significant Contributor of Pollutant(s)* means a *facility* determined by *Ecology* to be a contributor of a *significant amount(s)* of a *pollutant(s)* to *waters of the state*.

*Significant Materials* includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the *facility* is required to report pursuant to section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with *stormwater* discharges.

*Significant Process Change* means any modification of the *facility* that would result in any of the following:

1. Add different *pollutants* in a *significant amount* to the discharge.
2. Increase the *pollutants* in the *stormwater discharge* by a *significant amount*.
3. Add a new *industrial activity* (SIC) that was not previously covered.
4. Add additional impervious surface or acreage such that *stormwater* discharge would be increased by 25% or more.

*Source Control BMPs* means physical, structural or mechanical devices or facilities that are intended to prevent *pollutants* from entering *stormwater*.

*Standard Industrial Classification (SIC)* is the statistical classification standard underlying all establishment-based federal economic statistics classified by industry as reported in the 1987 SIC Manual by the Office of Management and Budget.

*State Environmental Policy Act (SEPA)* means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

*Storm Sewer* means a sewer that is specifically designed to carry *stormwater*. Also called a storm drain.

*Stormwater* means that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a *stormwater drainage system* into a defined surface water body, or a constructed infiltration *facility*.

*Stormwater Discharge Associated with Industrial Activity* means the *discharge* from any conveyance that is used for collecting and conveying *stormwater* and that is directly related to

manufacturing, processing or raw materials storage areas at an industrial plant (see 40 CFR 122(b)(14)).

Stormwater Drainage System means constructed and natural features which function together as a system to collect, convey, channel, hold, inhibit, retain, detain, infiltrate or divert *stormwater*.

Stormwater Management Manual (SWMM) or Manual means the technical manuals prepared by Ecology for *stormwater* management in western and eastern Washington.

Stormwater Pollution Prevention Plan (SWPPP) means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of *stormwater*.

Structural Source Control BMPs means physical, structural, or mechanical devices or facilities that are intended to prevent *pollutants* from entering *stormwater*.

Surface Waters of the State includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state.

Total Maximum Daily Load (TMDL) means a calculation of the maximum amount of a *pollutant* that a water body can receive and still meet state *water quality standards*. Percentages of the *total maximum daily load* are allocated to the various *pollutant* sources. A *TMDL* is the sum of the allowable loads of a single *pollutant* from all contributing point and nonpoint sources. The *TMDL* calculations include a "margin of safety" to ensure that the water body can be protected in case there are unforeseen events or unknown sources of the *pollutant*. The calculation also accounts for seasonable variation in water quality.

Treatment BMPs means BMPs that are intended to remove *pollutants* from *stormwater*.

Turbidity means the clarity of water expressed as nephelometric *turbidity* units (NTU) and measured with a calibrated turbidimeter.

Underground Injection Control Well means a well that is used to *discharge* fluids into the subsurface. An *underground injection control well* is one of the following:

1. A bored, drilled, or driven shaft,
2. An improved sinkhole, or
3. A subsurface fluid distribution system. (WAC 173-218-030)

Unstaffed means the *facility* has no assigned staff. A site may be "unstaffed" even when security personnel are present, provided that *pollutant* generating activities are not included in their duties.

Vehicle means a motor-driven conveyance that transports people or freight, such as an automobile, truck, train, or airplane.

Vehicle Maintenance means the rehabilitation, mechanical repairing, painting, fueling, and/or lubricating of a motor-driven conveyance that transports people or freight, such as an automobile, truck, train, or airplane.

Wasteload Allocation (WLA) means the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of *pollution*. WLAs constitute a type of water quality based effluent limitation (*40 CFR* 130.2(h)).

Water Quality Standards means the Water Quality Standards for *Surface Waters of the State* of Washington, Chapter 173-201A WAC, Ground Water Quality Standards (Chapter 173-200 WAC), Sediment Management Standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (*40 CFR* 131.36).

Waters of the State includes those waters defined as "waters of the United States" in *40 CFR* Subpart 122.2 within the geographic boundaries of Washington State. State statute defines "*waters of the state*" to include lakes, rivers, ponds, streams, wetlands, inland waters, *underground waters*, salt waters and all other surface waters and water courses within the jurisdiction of the state of Washington (Chapter 90.48 RCW).

### APPENDIX 3 - SWPPP CERTIFICATION FORM

The Permittee shall use this form to sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3 and S8 of the Industrial Stormwater General Permit.

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

Is this SWPPP certification in response to a Level 1, 2 or 3 Corrective Action?  Yes  No

**If Yes:**

- Type of Corrective Action?:  Level 1  Level 2  Level 3
- Date SWPPP update/revision completed: \_\_\_\_\_.

"I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

\_\_\_\_\_  
Operator's Printed Name \*

\_\_\_\_\_  
Title

\_\_\_\_\_  
Operator's Signature \*

\_\_\_\_\_  
Date

\* Federal regulations require this document to be signed as follows:

- For a corporation, by a principal executive officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

This document shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Ecology.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

Changes to authorization. If an authorization under number 2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of number 2 above shall be submitted to Ecology prior to, or together with, any reports, information, or applications to be signed by an authorized representative.

#### **APPENDIX 4 - EXISTING DISCHARGERS TO IMPAIRED WATER BODIES**

This appendix has a link below to a website list of existing Permittees that *discharge pollutants* of concern to impaired water bodies.

<http://www.ecy.wa.gov/programs/wq/stormwater/industrial/permitdocs/iswgpapp4.pdf>

This list is based on the best information available to *Ecology*. There will be changes and updates to this list based on new, more accurate information. If changes or updates are made, *Ecology* will notify the affected permittees directly. Such changes or updates will not become effective until 30 days after the affected *dischargers* are notified.

This list is generated by comparing the *discharge* point of each individual *discharger* permitted under the *Industrial Stormwater General Permit* with the 2008 list of Category 5 impaired waters (the *303(d) list*), approved by US *EPA* on January 29, 2009.

#### **APPENDIX 5 - DISCHARGERS SUBJECT TO TMDL REQUIREMENTS**

The list of *dischargers* identified as discharging to water bodies which have completed water quality clean-up plans or *TMDLs* and associated monitoring requirements can be viewed on *Ecology's* website at: <http://www.ecy.wa.gov/programs/wq/stormwater/industrial/index.html>

The most current list can also be obtained by contacting *Ecology* at:

Industrial Stormwater General Permit  
Washington State Department of Ecology  
P.O. Box 47696  
Olympia, WA 98504-7600

This list is based on the best information available to *Ecology*. There will be changes and updates to this list based on new, more accurate information. If changes or updates are made, *Ecology* will notify the affected permittees directly. Such changes or updates will not become effective until 30 days after the affected *dischargers* are notified.

## **APPENDIX 7**

### **Industrial Stormwater General Permit Appendix 4**

#### **List of Existing Permittees that Discharge Pollutants of Concern to Impaired Water Bodies**

Industrial Stormwater General Permit Appendix 4  
List of Existing Permits that Discharge Pollutants of Concern to Impaired Water Bodies

Permit ID	Name	County	Location	Waterbody	Parameter(s)
WAR000139	ALASKAN COPPER WORKS	King	47122F3H4	DUWAMISH WATERWAY	TSS
WAR011723	ALGAS SDI	King	47122F3E3	DUWAMISH WATERWAY	pH
WAR003411	AMERICAN ROOFING RECYCLERS LLC	Snohomish	280N060E07	BLACKMAN'S LAKE	Fecal Coliform
WAR002830	AMERIFLIGHT INC HANGAR 5	King	47122F3C1	DUWAMISH WATERWAY	Fecal Coliform
WAR000087	APPLIED INDUSTRIES INC	Cowlitz	27.535	CDID DITCH #3	Fecal Coliform
WAR002110	ARGENT CHEMICAL LABORATORIES	King	33.991	SAMMAMISH RIVER	Fecal Coliform
WAR000350	ARIMA MARINE	King	4.557	MILL CREEK	Fecal Coliform
WAR006709	ARREOLA'S AUTOMOTIVE INC	Yakima	186.685	YAKIMA RIVER	pH
WAR002789	AURORA AUTO WRECKING SEA	King	250N040E06	GREEN LAKE	Fecal Coliform, Total Phosphorus
WAR000597	BELLINGHAM COLD STORAGE CO ORCHARD	Whatcom	3.356	SQUALICUM CREEK	Fecal Coliform
WAR000929	BIGGE CRANE AND RIGGING CO	King	4.656	MILL CREEK	Fecal Coliform
WAR000146	BOEING A & M DEVELOPMENTAL CENTER	King	47122F3B0	DUWAMISH WATERWAY	TSS
WAR000232	BOEING COMPANY RENTON PLANT	King	19.947	CEDAR RIVER	Fecal Coliform, pH
WAR000232	BOEING COMPANY RENTON PLANT	King	47122F2A0	LAKE WASHINGTON	Fecal Coliform
WAR000150	BOEING MILITARY FLIGHT CENTER	King	47122F3C1	DUWAMISH WATERWAY	Fecal Coliform
WAR000482	BOEING PLANT 2	King	47122F3C1	DUWAMISH WATERWAY	Fecal Coliform
WAR011422	BROWN STRAUSS STEEL	Cowlitz	46122B9A5	COLUMBIA RIVER	Fecal Coliform
WAR001859	CASCADE HYDRAULICS AND MACHINE INC	Cowlitz	25.802	CDID DITCH #3	Fecal Coliform
WAR000056	CERTAINTED GYPSUM MANUFACTURING	King	47122F3E3	DUWAMISH WATERWAY	TSS
WAR001767	CLALLAM TRANSIT SYSTEM ADM MTCE OP	Clallam	1.797	TUMWATER CREEK	Fecal Coliform
WAR010569	CONGLOBAL INDUSTRIES	King	47122F3G4	DUWAMISH WATERWAY	TSS
WAR001761	CONTINENTAL MILLS	King	3.568	UNNAMED	Fecal Coliform

Industrial Stormwater General Permit Appendix 4  
List of Existing Permittees that Discharge Pollutants of Concern to Impaired Water Bodies

Permit ID	Name	County	Location	Waterbody	Parameter(s)
WAR004613	COWLITZ CLEAN SWEEP	Cowlitz	25.217	CDID DITCH #3	Fecal Coliform
WAR011560	DAWN FOODS PRODUCTS	King	47122F3E3	DUWAMISH WATERWAY	pH
WAR002353	DES MOINES CREEK TREATMENT PLANT	King	1.359	DES MOINES CREEK	Fecal Coliform
WAR000464	EAGLE MARINE SERVICES TERM 5	King	47122F3H5	DUWAMISH WATERWAY	Fecal Coliform
WAR001086	EASTSIDE AUTO WRECKING INC	Kitsap	3.238	UNNAMED	Fecal Coliform
WAR010082	EMPIRE DISPOSAL INC	Whitman	144.264	PALOUSE RIVER	pH
WAR005609	EQUIPMENT TECHNOLOGIES WEST	Cowlitz	25.799	UNNAMED	Fecal Coliform
WAR000048	ERSHIGS INC	Whatcom	0.202	SQUALICUM CREEK	Fecal Coliform
WAR001432	FEDERAL EXPRESS SEA	King	19.507	GREEN RIVER	Fecal Coliform
WAR006809	FEDEX HOME DELIVERY	King	19.504	GREEN RIVER	Fecal Coliform
WAR007538	FIBER RECOVERY INC	Whatcom	5.443	SILVER CREEK	Fecal Coliform
WAR004517	FOAMEX LP	King	4.508	UNNAMED	Fecal Coliform
WAR008735	FRED MEYER DISTRIBUTION CENTER	Pierce	9.384	PUYALLUP RIVER	Mercury
WAR002227	GLACIER NORTHWEST INC	King	47122F3G4	DUWAMISH WATERWAY	TSS
WAR004480	GORDON TRUCKING - PACIFIC TERMINAL	King	8.091	WHITE RIVER	pH
WAR000551	GRAPHIC PACKAGING INTERNATIONAL INC	King	0.411	UNNAMED	Fecal Coliform
WAR002167	HENIFIN CONSTRUCTION LLC	Whatcom	6.709	SQUALICUM CREEK	Fecal Coliform
WAR000664	HIRSCHLER MFG INC	King	47122G2H0	LAKE WASHINGTON	Fecal Coliform
WAR012122	Hunnicut's	Whatcom	6.657	Squalicum Creek	Fecal Coliform
WAR000084	INTERCITY TRANSIT	Thurston	4.098	INDIAN CREEK	Fecal Coliform
WAR004509	ISLAND TUG & BARGE CO SEATTLE	King	47122F3H5	DUWAMISH WATERWAY	Fecal Coliform
WAR010579	JB HUNT DISTRIBUTION FACILITY	Pierce	8.203	WHITE RIVER	pH

Industrial Stormwater General Permit Appendix 4  
List of Existing Permittees that Discharge Pollutants of Concern to Impaired Water Bodies

Permit ID	Name	County	Location	Waterbody	Parameter(s)
WAR000725	JEFFERSON CO INTERNATIONAL AIRPORT	Jefferson	0.397	CHIMACUM CREEK	Fecal Coliform
WAR011072	JONES AUTO WRECKING	Clark	020N030E34	LACAMAS LAKE	Total Phosphorus
WAR011786	KING COUNTY METRO NORTH FACILITIES	King	47122G311	GREEN LAKE	Fecal Coliform, Total Phosphorus
WAR002511	KING COUNTY SOUTH TREATMENT PLANT	King	1.48	UNNAMED	Fecal Coliform
WAR011113	LINCOLN INDUSTRIAL CORP	Clallam	1.951	TUMWATER CREEK	Fecal Coliform
WAR005632	LONGVIEW CITY SHOP	Cowlitz	24.347	UNNAMED	Fecal Coliform
WAR002719	LOUIS DREYFUS CORP GRAIN ELEVATOR	King	47122G3C6	ELLIOTT BAY	Fecal Coliform
WAR003163	LUDTKE-PACIFIC TRUCKING INC	Whatcom	7.514	SQUALICUM CREEK	Fecal Coliform
WAR000694	MAAX HYDRO SWIRL MFG CORP	Whatcom	6.628	SQUALICUM CREEK	Fecal Coliform
WAR011326	MACMILLAN PIPER INC AIRPORT WAY	King	47122F3G4	DUWAMISH RIVER	TSS
WAR000473	MANKE LUMBER SHELTON LOG DUMP	Mason	47123C0A9	SHELTON HARBOR (INNER)	Fecal Coliform
WAR000639	MELTEC DIVISION OF YOUNG CORP	King	47122F3H5	DUWAMISH WATERWAY	Fecal Coliform
WAR000968	METRO FREIGHT SYSTEMS INC	Pierce	8.77	WHITE RIVER	pH
WAR000653	MONROE MACHINED PRODUCTS INC	King	4.844	DES MOINES CREEK	Fecal Coliform
WAR010774	MOTOR TRUCKS INC BELLINGHAM	Whatcom	1.34	UNNAMED	Fecal Coliform
WAR005639	MURREYS DISPOSAL	Pierce	5.419	PUYALLUP RIVER	Fecal Coliform, Mercury
WAR005639	MURREYS DISPOSAL	Pierce	5.419	PUYALLUP RIVER	Fecal Coliform
WAR005639	MURREYS DISPOSAL	Pierce	5.419	PUYALLUP RIVER	Fecal Coliform
WAR008925	NOB HILL AUTO WRECKING	Yakima	187.077	YAKIMA RIVER	pH
WAR000640	NORDICK DIVISION OF YOUNG	King	23.693	SAMMAMISH RIVER	Fecal Coliform
WAR011355	NORTH STAR CASTEEL PRODUCTS INC	King	47122F3F4	DUWAMISH RIVER	TSS
WAR000471	NORTHLAND SERVICES INC SEATTLE	King	47122F3E3	UNNAMED	TSS

Industrial Stormwater General Permit Appendix 4  
List of Existing Permittees that Discharge Pollutants of Concern to Impaired Water Bodies

Permit ID	Name	County	Location	Waterbody	Parameter(s)
WAR003779	Northwest Container Services	King	47122F3F3	Duwamish	TSS
WAR000734	OAK HARBOR FREIGHT AUBURN	King	1.68	MILL CREEK	Fecal Coliform
WAR008736	OLD MILL SITE PORT GAMBLE	Kitsap	4712215F7	HOOD CANAL (NORTH)	TSS
WAR004626	Olympic Panel Products LLC	Mason	0.049	Shelton Creek	Fecal Coliform
WAR001404	ONEILL AND SONS	Thurston	14.114	DESCHUTES RIVER	Fecal Coliform
WAR002259	OVERLAKE OIL INC KIRKLAND	King	47122G2H0	LAKE WASHINGTON	Fecal Coliform
WAR004473	PACIFIC METAL FABRICATION	King	10.13	WHITE RIVER	pH
WAR006702	PETTIT OIL COMPANY PORT ANGELES WHS	Clallam	0.241	TUMWATER CREEK	Fecal Coliform
WAR002896	PLATYPUS MARINE INC	Clallam	0.145	TUMWATER CREEK	Fecal Coliform
WAR001242	PORT OF LONGVIEW	Cowlitz	24.463	CDID DITCH #3	Fecal Coliform
WAR010302	PRECISION TRUSS INC	Clallam	2.315	BAGLEY CREEK	Fecal Coliform
WAR002266	PRO FLIGHT AVIATION INC RENTON	King	20.824	CEDAR RIVER	Fecal Coliform, pH
WAR000950	PUGET SOUND TRUCK LINES INC LGVW	Cowlitz	25.907	CDID DITCH #3	Fecal Coliform
WAR004625	PULLMAN CITY WWTP	Whitman	34.473	SOUTH FORK PALOUSE RIVER	Fecal Coliform
WAR004624	PULLMAN, CITY OF TRANSIT FACILITY	Whitman	34.473	SOUTH FORK PALOUSE RIVER	Fecal Coliform
WAR005563	R W RHINE INC	Pierce	1.583	NORTH FORK CLOVER CREEK	Fecal Coliform
WAR002311	RECYCLING + DISPOSAL SERVICES INC	Whatcom	5.464	SILVER CREEK	Fecal Coliform
WAR000015	RECYCLING DEPOT INC	King	47122F3G4	DUWAMISH WATERWAY	TSS
WAR004515	ROEMER ELECTRIC STEEL FOUNDRY	Cowlitz	25.815	UNNAMED	Fecal Coliform
WAR008693	ROLLING FRITO LAY SALES LP FERNDALE	Whatcom	6.04	SILVER CREEK	Fecal Coliform
WAR008694	ROLLING FRITO LAY SALES LP REDMOND	King	35.015	SAMMAMISH RIVER	Fecal Coliform
WAR001217	SAFETY KLEEN CORP AUBURN	King	4.593	MILL CREEK	Fecal Coliform

Industrial Stormwater General Permit Appendix 4  
List of Existing Permittees that Discharge Pollutants of Concern to Impaired Water Bodies

Permit ID	Name	County	Location	Waterbody	Parameter(s)
WAR001054	SEATTLE SNOHOMISH MILL CO INC	Snohomish	18.83	SNOHOMISH RIVER	Fecal Coliform
WAR003099	SHOPE ENTERPRISES INC	Pierce	0.446	UNNAMED	Fecal Coliform
WAR001861	SIMPSON LONGVIEW LUMBER OPERATION	Cowlitz	26.188	UNNAMED	Fecal Coliform
WAR000792	SIMPSON TIMBER CO	Mason	0.065	GOLDBOROUGH CREEK	Fecal Coliform
WAR000021	SOUTH END AUTO WRECKING INC RENTON	King	3.012	UNNAMED	Fecal Coliform
WAR000246	STAR TRANSPORT TRAILERS INC	Yakima	10.338	SULPHER CREEK WASTEWAY	Fecal Coliform, pH
WAR009852	STARROW ENTERPRISES AUBURN	King	5.469	MILL CREEK	Fecal Coliform
WAR000467	STEVEDORING SERVICES TERMINAL 18	King	47122F3J4	ELLIOTT BAY	Fecal Coliform
WAR000784	TECH MARINE ENTERPRISES INC	King	4.844	UNNAMED	Fecal Coliform
WAR000465	TERMINAL 46	King	47122F3J4	ELLIOTT BAY	Fecal Coliform
WAR009970	THE LIGHTHOUSE FOR THE BLIND	King	47122F2I8	DUWAMISH RIVER	Fecal Coliform
WAR000181	THE SEATTLE TIMES N CREEK FACILITY	King	22.699	SAMMAMISH RIVER	Fecal Coliform
WAR002079	TRUSS SPAN LBC 021 AUBURN	King	5.479	MILL CREEK	Fecal Coliform
WAR000443	UNITED PARCEL SERVICE WASAU	King	47122F3G4	DUWAMISH WATERWAY	TSS
WAR000444	UNITED PARCEL SERVICE WASEA	King	47122F3G4	DUWAMISH WATERWAY	TSS
WAR000439	UPS BELLINGHAM	Whatcom	6.718	SQUALICUM CREEK	Fecal Coliform
WAR005618	US FOODSERVICE INC	Clark	11.996	GEE CREEK	Fecal Coliform
WAR011443	VALLEY PROCESSING INC 1	Yakima	0.622	UNNAMED	Fecal Coliform
WAR000920	WAITE SPECIALTY MACHINE INC 1160	Cowlitz	46122B9A5	COLUMBIA RIVER	Fecal Coliform
WAR000919	WAITE SPECIALTY MACHINE INC 1356	Cowlitz	080ND02W33	LAKE SACAJAWEA	Fecal Coliform
WAR003991	WASTE MGMT RST DISPOSAL TRANS	King	5.832	MILL CREEK	Fecal Coliform
WAR001873	WAYRON LLC	Cowlitz	080ND02W33	LAKE SACAJAWEA	Fecal Coliform

Industrial Stormwater General Permit Appendix 4  
List of Existing Permittees that Discharge Pollutants of Concern to Impaired Water Bodies

Permit ID	Name	County	Location	Waterbody	Parameter(s)
WAR011971	WESTERN WOOD LLC LITTLE RIVER LOG	Grays Harbor	5.841	WEST FORK HOQUIAM RIVER	Fecal Coliform
WAR006713	WESTPORT SHIPYARD INC PORT ANGELES	Clallam	0.096	TUMWATER CREEK	Fecal Coliform
WAR006648	WILCOX & FLEDEL - LONGVIEW TERMINAL	Cowlitz	4612289A5	COLUMBIA RIVER	Fecal Coliform
WAR008699	WILCOX & FLEGEL OIL CO ILWACO PLANT	Pacific	46124D0A3	COLUMBIA RIVER	Fecal Coliform
WAR008924	WRAP UNLIMITED INC	Cowlitz	25.185	UNNAMED	Fecal Coliform
WAR011156	ZOSEL LUMBER CO	Okanogan	125.403	OKANOGAN RIVER	pH

## APPENDIX 8

Ex. B-3

### Industrial Stormwater General Permit – Fact Sheet

June 3, 2009 Public Comment Draft

pp. 49-57, 88-97

# **INDUSTRIAL STORMWATER GENERAL PERMIT – FACT SHEET**

June 3, 2009 Public Comment Draft

The Washington State Department of Ecology is proposing to reissue the Industrial Stormwater General Permit (ISWGP). The permit will replace the permit that expired on April 30, 2009. The permit authorizes stormwater discharges associated with industrial activities and a limited number of non-stormwater discharges. The permit limits the *discharge* of pollutants to surface waters under the authority of the Federal Water Pollution Control Act (U.S.C.S. 1251) and limits the discharge of pollutants to surface and ground water under the authority of Chapter 90.48 RCW. Ecology anticipates that Permittees' diligent implementation of the requirements of this permit will result in discharges that do not cause or contribute to violations of state water quality standards.

This fact sheet is a companion document to the draft National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Industrial Activities (Industrial Stormwater General Permit, or ISWGP). The draft permit authorizes discharge of stormwater only. Discharges of process wastewater are not authorized by this permit and require a separate permit. This fact sheet explains the nature of authorized discharges, Ecology's decisions on limiting the pollutants in stormwater and non-stormwater discharges, and the regulatory and technical bases for those decisions.

The draft permit retains the existing concept of stormwater sampling, benchmarks, and escalating levels of adaptive management that was instituted in 2005. However, many of the SWPPP/BMP requirements, sampling and inspection requirements, benchmark concentrations, and specific elements of the adaptive management program have been revised. The primary changes are summarized in the following table.

(Chapter 173-200 WAC), and Sediment Management Standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR 131.36).

- Condition S12 requires facilities to prevent solid waste material or leachate from causing violations of the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Quality Standards (Chapter 173-200 WAC), and Sediment Management Standards (Chapter 173-204 WAC).

The rationale for water quality based effluent limitations in the draft permit are discussed below.

### **Condition S6.C. Water Quality-Based Effluent Limitations for Certain Discharges to 303(d)-Listed Waters**

The Washington State Water Pollution Control Act RCW 90.48.555 requires the Department of Ecology (Ecology) to develop appropriately derived water quality-based numeric effluent limitations for discharges regulated by the Industrial Stormwater General Permit (ISWGP).

Specifically, RCW 90.48.555(7) states:

(a) By November 1, 2009, the department shall modify or reissue the industrial storm water general permit to require compliance with appropriately derived numeric water quality-based effluent limitations for existing discharges to water bodies listed as impaired according to 33 U.S.C. Sec. 1313(d) (Sec. 303(d) of the federal clean water act, 33 U.S.C. Sec. 1251 et seq.).

(b) The industrial storm water general permit must require permittees to comply with appropriately derived numeric water quality-based effluent limitations in the permit, as described in (a) of this subsection, by no later than six months after the effective date of the modified or reissued industrial storm water general permit.

(c) For permittees that the department determines are unable to comply with the numeric water quality-based effluent limitations required by (a) of this subsection, within the timeline established in (b) of this subsection, the department shall establish a compliance schedule as follows:

(i) Any compliance schedule provided by the department must require compliance as soon as possible, and must require compliance by no later than twenty-four months, or two complete wet seasons, after the effective date of the industrial storm water general permit. For purposes of this subsection (7)(c)(i), "wet seasons" means October 1st through June 30th.

(ii) The department shall post on its web site the name, location, industrial storm water permit number, and the reason for requesting a compliance schedule for each permittee who requests a compliance schedule according to this subsection (7)(c). The department shall post this information no later than thirty days after receiving a permittee's request for a compliance schedule under this subsection (7)(c). The department shall also prepare a list of organizations and individuals seeking to be notified when such requests for compliance schedules are made, and notify them within thirty days after receiving a permittee's request for a compliance schedule. Notification under this subsection may be accomplished electronically.

To meet RCW 90.48.555(7)(a), Ecology applied the basic assumption that numeric effluent limitations would only be applied to facilities discharging to impaired waterbodies that were “listed” due to pollutants that are typically present in industrial stormwater discharges.

Under this assumption, water quality-based numeric effluent limitations would not be required for discharges to the following types of 303(d)-listed waterbodies:

- *Temperature.* Numeric effluent limits would not apply to dischargers to waterbodies listed for temperature. The rationale is that temperature is a seasonal water quality problem, and considering weather patterns in Washington State, stormwater discharges typically do not occur during the late summer months when temperature impaired waterbodies are relatively warm and more susceptible to thermal loading (discharges of heated water).
- *Fecal Coliform.* Numeric effluent limits would not apply to dischargers to waterbodies listed for fecal coliform bacteria, unless the industrial facility is determined by Ecology to be a source of fecal coliform bacteria to the receiving water, based upon Standard Industrial Classification (SIC). Specifically, facilities in the following categories are subject to effluent limitations for fecal coliform bacteria, unless the facility provides documentation and certification that there is no potential for their stormwater associated with industrial activity to contribute fecal coliform bacteria to the 303(d)-listed waterbody:
  - Food and Kindred Products (SIC Codes 20xx);
  - Treatment Works (SIC Code 4952);
  - Landfills (SIC Code 4953); and
  - Compost facilities (SIC Code 2873),
- *Low Dissolved Oxygen.* Numeric effluent limits would not apply to waterbodies listed for low dissolved oxygen (D.O.). Low D.O. impairments are seasonal (summer) problems, while stormwater discharges in Washington commonly occur from October through April. Low D.O. impairments are typically attributed to:
  - Heavy loading of nutrients (e.g., nitrogen or phosphorus) that cause excessive algae and plant growth, the decay of which depletes oxygen levels in the summer-time (eutrophication), or
  - Excessive discharges of wastewater or other substances with a high biochemical oxygen demand, expressed as BOD<sub>5</sub> - a test to see how fast biological organisms use up oxygen in a waterbody. These kinds of pollutants have a “far field” effect – which means the demand for oxygen doesn’t occur directly where the effluent or runoff water is discharged; it occurs somewhere downstream where decomposition finally occurs. This can make it difficult to show a direct relationship between the discharge of oxygen demanding substance and a low D.O. problem without site-specific water quality modeling.
- *Fish Tissue/Bioassessment.* Numeric effluent limits would not apply to waterbodies

303(d)-listed due contaminated fish tissue (e.g., PCBs, DDT, etc.) or bioassessment (surveys of benthic invertebrate communities). It would be extremely difficult to show a direct relationship between stormwater discharges and impairments due to contaminated fish tissue or bioassessment.

As described above, discharges to water bodies listed for temperature, and low dissolved oxygen, would not trigger a numeric effluent limitation. Discharges to water bodies impaired for fecal coliform bacteria would only be required if the industrial facility is a potential source of bacteria. In addition, 303(d) listings related to contaminated fish tissue (e.g., PCBs, DDT, etc.) or bioassessment (surveys of benthic invertebrate communities), would not trigger numeric effluent limitations. However, facilities discharging to any other waterbodies with 303(d)-listings (Category 5) would be subject to numeric effluent limitations for the 303(d)-listed parameter (e.g., if receiving waterbody listed for total zinc, the facility would be subject to a numeric effluent limitation for total zinc), or in the case of a sediment quality listing, a numeric effluent limitation for Total Suspended Solids (30 mg/L). The technical basis for these limitations is described below.

- *Fecal Coliform*. Facilities with outfalls to freshwater that are subject to a numeric effluent limitation for fecal coliform bacteria will be assigned a water quality based numeric effluent limitation of 100 colonies/100 mL fecal coliform bacteria. This limitation is based upon WAC 173-201-200(2)(b) [Table 200 (2)(b)], which lists the bacteria criteria to protect water contact recreation in fresh waters. Specifically, the effluent limitation is based on Table 200(2)(b), which states that fecal coliform organism levels in the “Extraordinary Primary Contact Recreation” category must not exceed a geometric mean value of 50 colonies/100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained for calculating the geometric mean value exceeding 100 colonies/100 mL. Since the general permit only requires one grab sample per quarter, facilities will have fewer than 10 sample points. Therefore, the numeric effluent limitation is 100 colonies/100 mL fecal coliform bacteria.

Facilities with outfalls to marine waters that are subject to a numeric effluent limitation for fecal coliform bacteria will be assigned a water quality based numeric effluent limitation of 43 colonies/100 mL. This limitation is based upon WAC 173-201A-210(2)(b) [Table 200 (2)(b)], which lists the bacteria criteria to protect shellfish harvesting and primary contact recreation in marine waters. Both criterion state that fecal coliform organism must not exceed a geometric mean value of 14 colonies/100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained for calculating the geometric mean value exceeding 43 colonies/100 mL. Since the general permit only requires one grab sample per quarter, facilities will have fewer than 10 sample points. Therefore, the numeric effluent limitation is 43 colonies/100 mL fecal coliform bacteria.

- *pH*. Facilities with outfalls to freshwater on the 303(d) list for pH are subject to a water quality based numeric effluent limitation, applied end-of-pipe, as follows:
  - Between 6.0 and 8.5 if the 303(d) listing was for high pH only;
  - Between 6.5 and 9.0 if the 303(d) listing was for low pH only; and
  - Between 6.5 and 8.5 if the 303(d) listing was for both low and high pH.

These limitations are based upon the aquatic life criteria in WAC 173-201A-200(1)(g).

Facilities with outfalls to marine waters on the 303(d) list for pH are subject to a water quality based numeric effluent limitation of between 7.0 and 8.5, applied end-of-pipe. This effluent limitation is based on the aquatic life criteria in WAC 173-201A-210(1)(f).

- *Total Phosphorus.* Facilities with outfalls to waterbodies on the 303(d) list for Total Phosphorus are subject to a water quality based numeric effluent limitation. This effluent limitation will be derived and assigned at the time of permit coverage based upon the receiving water-specific ecoregion and trophic-state in accordance with the lake nutrient criteria in the state surface water quality standards (WAC 173-201A-230).
- *Total Copper.* Facilities with outfalls to waterbodies on the 303(d) list for Total Copper are subject to a water quality based numeric effluent limitation. This effluent limitation will be derived as the dissolved copper criteria at the time of permit coverage, based upon receiving water type (freshwater or marine) and hardness, and a total/dissolved translator factor, in accordance with WAC 173-201A-240(3), applied end-of-pipe as a “daily maximum” limit.
- *Total Zinc.* Facilities with outfalls to waterbodies on the 303(d) list for Total Zinc are subject to a water quality based numeric effluent limitation. This effluent limitation will be derived and assigned at the time of permit coverage based upon receiving water type (freshwater or marine) and hardness, and total/dissolved conversion factor, in accordance with WAC 173-201A-240(3), applied end-of-pipe as a “daily maximum” limit..
- *Total Mercury.* Facilities with outfalls to waterbodies on the 303(d) list for Total Mercury are subject to a water quality based numeric effluent limitation. This effluent limitation will be derived and assigned at the time of permit coverage based upon receiving water type (freshwater or marine), applied end-of-pipe as a “daily maximum” limit.
- *Total Ammonia.* There are currently no marine waters on the 303(d) list for total ammonia. Facilities with outfalls to fresh waters on the 303(d) list for total ammonia will be assigned a water quality based numeric effluent limitation based on the toxic substances criteria in WAC 173-201A-240 and the table below, applied end-of-pipe as a “daily maximum” limit:

<b>ACUTE, FRESH WATER AMMONIA CRITERIA BASED ON pH. <sup>2</sup></b>		
<b>pH</b>	<b>Total Ammonia Nitrogen in mg-N/L</b>	
	<b>Acute Criteria with Salmonids Present</b>	<b>Acute Criteria with Salmonids Absent</b>
<b>6.5</b>	32.6	48.8
<b>6.6</b>	31.3	46.8

<sup>2</sup> The reference for this table is EPA, 1999, *1999 Update of Ambient Water Quality Criteria for Ammonia*, EPA 822-R-99-014.

<b>ACUTE, FRESH WATER AMMONIA CRITERIA BASED ON pH. <sup>2</sup></b>		
<b>pH</b>	<b>Total Ammonia Nitrogen in mg-N/L</b>	
	<b>Acute Criteria with Salmonids Present</b>	<b>Acute Criteria with Salmonids Absent</b>
<b>6.7</b>	29.8	44.6
<b>6.8</b>	28.1	42.0
<b>6.9</b>	26.2	39.1
<b>7.0</b>	24.1	36.1
<b>7.1</b>	22.0	32.8
<b>7.2</b>	19.7	29.5
<b>7.3</b>	17.5	26.2
<b>7.4</b>	15.4	23.0
<b>7.5</b>	13.3	19.9
<b>7.6</b>	11.4	17.0
<b>7.7</b>	9.65	14.4
<b>7.8</b>	8.11	12.1
<b>7.9</b>	6.77	10.1
<b>8.0</b>	5.62	8.40
<b>8.1</b>	4.64	6.95
<b>8.2</b>	3.83	5.72
<b>8.3</b>	3.15	4.71
<b>8.4</b>	2.59	3.88
<b>8.5</b>	2.14	3.20
<b>8.6</b>	1.77	2.65
<b>8.7</b>	1.47	2.20
<b>8.8</b>	1.23	1.84
<b>8.9</b>	1.04	1.56
<b>9.0</b>	0.885	1.32

- *Pentachlorophenol*. Facilities with outfalls to waterbodies on the 303(d) list for Pentachlorophenol are subject to a water quality based numeric effluent limitation. The effluent limitation will be derived and assigned at the time of permit coverage, based upon the toxic substances criteria in WAC 173-201A-240, applied end-of-pipe as a “daily maximum” limit.
- *Sediment Quality Listings*. Facilities with outfalls to waterbodies on the 303(d) list for excursions of sediment quality standards (Chapter 173-204 WAC) are subject to a water quality based numeric effluent limitation of 30 mg/L Total Suspended Solids (TSS). This limitation is based upon a best professional judgment determination that stormwater discharges with less than 30 mg/L TSS will not cause or contribute to a violation of sediment management standards.

**Condition S6.D. Effluent Limitations for Discharges to Waterbodies with Approved TMDLs**

Ecology plans to continue implementing a permit application review process to identify discharges to impaired waters with an approved or established Total Maximum Daily Load (TMDL). Where an operator indicates on its application for coverage form that the discharge is to one of these waters, Ecology will review the applicable TMDL to determine as a threshold matter whether the TMDL includes requirements that apply to the individual discharger or its industrial sector. Ecology will determine whether any more stringent requirements are necessary to comply with the WLA, whether compliance with the existing permit limits is sufficient, or, alternatively, whether an individual permit application is necessary. If Ecology determines that additional requirements are necessary, Ecology will incorporate the final limits as site-specific terms to the facilities general permit coverage.

Condition S6.D is intended to implement the requirements of 40 CFR 122.44(d)(1)(vii)(B), which requires that water quality based effluent limits “are consistent with the assumptions and requirements of any available wasteload allocation for the discharge ... .” Because WLAs for stormwater discharges may be specified in many different formats, Ecology plans to ensure that these requirements are properly interpreted and communicated to the permittee in way that can be implemented.

**Condition S5.A&B and S8. Benchmarks and Corrective Actions**

Special Condition S8 includes a non-numeric effluent limitation that requires facilities that exceed water quality-based numeric benchmark values (Special Condition S5.A&B) trigger incremental revisions to the facilities Stormwater Pollution Prevention Plan (SWPPP) to include additional Best Management Practices (BMPs). In accordance with RCW 90.48.555(8), the adaptive management mechanism requires monitoring, evaluation, and reporting requirements to ensure that stormwater discharges are controlled by adequate best management practices (BMPs) that prevent violations of water quality standards.

RCW 90.48.555(8)(a) states that “...the adaptive management mechanism shall include elements designed to result in permit compliance and shall include, at a minimum, the following elements:

- (i) An adaptive management indicator, such as monitoring benchmarks;
- (ii) Monitoring;
- (iii) Review and revisions to the storm water pollution prevention plan;
- (iv) Documentation of remedial actions taken; and
- (v) Reporting to the department.”

RCW 90.48.555(8)(b) requires the permit to include the “timing and mechanisms for implementation of treatment best management practices”.

To comply with these statutory requirements, the permit continues the previous permits’ adaptive management approach that requires facilities to monitor stormwater quality against several water quality-based benchmarks (indicator values). The rationale for the selection and derivation of benchmark values for specific pollutant parameters is described in Special Condition S5 of this fact sheet.

If the benchmark for a particular pollutant parameter is met, the discharge is presumed to not cause or contribute to a violation of water quality standards for that parameter. If a (water quality-based) benchmark is exceeded numerous times, the potential for a violation of water quality standards increases, and the facility is required to implement escalating levels of SWPPP review and the implementation of additional BMPs. With emphasis on pollution prevention rather than treatment, the adaptive management system directs facilities who exceed one or more benchmark begins with Level 1 operational source control BMPs. If a benchmark is exceed 4 more quarters, Level 2 requires additional structural source control BMPs. If a benchmark is exceeded 4 more times, then Level 3 requires treatment BMPs.

Since benchmark values are not numeric effluent limitations, discharges that exceed a benchmark value are not automatically considered a permit violation or a violation of water quality standards. However, if a permittee exceeds benchmarks that trigger a corrective action, but does not comply with the specific corrective action requirements in Special Condition S8, it would be a permit violation.

The rationale for the benchmark values is provided in Special Condition S5, and the rationale for the adaptive management mechanism is provided in Special Condition S8.

#### **Condition S10.A. Water Quality Standards**

Condition S10.A prohibits discharges that cause or contribute to violations of Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Quality Standards (Chapter 173-200 WAC), and Sediment Management Standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR 131.36).

Each permittee is required to control its discharge as necessary to meet applicable water quality standards. Ecology expects that compliance with the other conditions in this permit (e.g., the technology-based limits, Stormwater Pollution Prevention Plan (SWPPP), monitoring, corrective actions, etc.) will result in discharges that are controlled as necessary to meet applicable water quality standards. This “presumptive approach” is consistent with RCW 90.48.555(6), which states:

*(6) Compliance with water quality standards shall be presumed, unless discharge monitoring data or other site specific information demonstrates that a discharge causes or contributes to violation of water quality standards, when the permittee is:*

*(a) In full compliance with all permit conditions, including planning, sampling, monitoring, reporting, and recordkeeping conditions; and*

*(b)(i) Fully implementing storm water best management practices contained in storm water technical manuals approved by the department, or practices that are demonstrably equivalent to practices contained in storm water technical manuals approved by the department, including the proper selection, implementation, and maintenance of all applicable and appropriate best management practices for on-site pollution control.*

*(ii) For the purposes of this section, "demonstrably equivalent" means that the technical basis for the selection of all storm water best management practices are*

*documented within a storm water pollution prevention plan. The storm water pollution prevention plan must document:*

*(A) The method and reasons for choosing the storm water best management practices selected;*

*(B) The pollutant removal performance expected from the practices selected;*

*(C) The technical basis supporting the performance claims for the practices selected, including any available existing data concerning field performance of the practices selected;*

*(D) An assessment of how the selected practices will comply with state water quality standards; and*

*(E) An assessment of how the selected practices will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment.*

In addition, if the permittee becomes aware, or Ecology determines, that the discharge causes or contributes to a water quality standards exceedance, corrective actions and Ecology non-compliance notification is required. In addition, at any time Ecology may require additional monitoring or an individual permit, if information suggests that the discharge is not controlled as necessary to meet applicable water quality standards.

Ecology has determined that, in general, the effluent limits contained in this permit, combined with the other requirements concerning corrective actions, inspections, and monitoring, will control discharges as necessary to meet applicable water quality standards. Condition S8 requires each facility to implement an enforceable adaptive management program with monitoring and benchmarks that may trigger escalating levels of corrective actions (SWPPP revisions), to ensure that best management practices (BMPs) are adequate to prevent violations of water quality standards.

The permit also requires that permittees modify their SWPPP, if during inspections or investigations by the permittee (Condition S7) or Ecology (Condition G3), it is determined that the SWPPP is, or would be, ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the facility. In this way, the permittee may improve upon the initial selection, design, installation, or implementation of BMPs to further ensure that its discharges are controlled as necessary to meet applicable water quality standards.

Other information that may identify discharges that may cause or contribute to a violation of water quality standards and trigger a need for corrective actions include:

- Monthly visual inspections of the facility (Condition S7);
- Additional water quality sampling (Condition G12);
- Required monitoring for numeric effluent limitations guidelines for sectors subject to effluent limitation guidelines, or for discharges to 303(d) listed waters; or
- Information provided to Ecology or the operator by the public (including State or local authorities) suggestive that the control measures are not stringent enough meet the water quality standards.

## **Sediment Quality**

Ecology has promulgated Sediment Management Standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that Ecology may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400). The permit requires BMPs to limit contamination of stormwater. Source control BMPs can reduce or eliminate contamination of stormwater and help comply with the sediment management standards. However, if Ecology determines that BMPs are ineffective in protecting sediment quality, Ecology may require the Permittee to implement additional measures to assure compliance with the sediment standards or to apply for an individual permit.

## **GROUND WATER QUALITY LIMITATIONS**

Ecology has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by Ecology prohibit violations of those standards (WAC 173-200-100). The permit requires BMPs to limit contamination of stormwater. Source control BMPs can eliminate/minimize the potential contamination of stormwater and protect ground water quality. However, if Ecology determines that BMPs are ineffective in protecting ground water quality, Ecology may require the Permittee to implement additional measures to protect ground water quality or to apply for an individual permit.

## **DISCUSSION OF SPECIAL CONDITIONS**

Ecology has significantly reorganized the draft permit compared to the current permit to streamline it, remove repetitive language, and make it more easily understandable. The draft permit is in an outline format so that specific permit requirements can be more easily found. In addition, Ecology's revisions in the draft permit comply with the governor's "Plain Talk" policy for clearly written documents.

The following narrative describes the main requirements in the draft permit and the rationale behind the requirements.

### **S1. Permit Coverage**

#### **Facilities Required to Seek Coverage Under the Permit**

The draft ISWGP is a statewide permit that provides coverage for discharges of stormwater associated with 29 categories of industrial activities within the State of Washington. Condition S1.A defines which industrial sectors are required to seek coverage under the general permit. Table 1 provides a list of industrial activities and Standard Industrial Classification (SIC) codes that are categorically required to apply for coverage, if there is a discharge of stormwater from industrial activity to surface waters of the state, or a conveyance system that discharges to surface waters of the state. The sector descriptions are based on Standard Industrial Classification (SIC) Codes and Industrial Activity Codes consistent with the definition of stormwater discharge associated with industrial activity at 40 CFR 122.26(b)(14)(i-ix, xi).

Consistent with EPA's Multi-Sector General Permit (MSGP) and 40 CFR 122.26(b)(14) (iv), the draft permit required hazardous waste treatment, storage, or disposal facilities (TSDs), including those that are operating under interim status or a permit under subtitle C of RCRA, to apply for

Visual inspections are an important part of the discharge monitoring schedule, verification of BMP effectiveness, and the adaptive management program.

The previous permit required quarterly inspections. However, the Condition S7.A of the draft permit requires all Permittees to conduct monthly visual inspections. This is intended, in part, to simplify the requirements 2008 MSGP, which requires permittees to conduct three types of inspections: routine facility inspections, quarterly visual assessments, and comprehensive site inspections. In an effort to reduce complexity, the draft ISWGP incorporates the elements of these three types of inspections into the routine monthly inspections. Ecology determined that monthly visual inspections are a reasonable and cost-effective measure to prevent stormwater contamination.

EPA requires that “qualified personnel” conduct inspections. According to EPA’s 2008 MSGP Fact Sheet “Qualified personnel are those who possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility, and who can also evaluate the effectiveness of controls selected.” Ecology has found that many permittees lack the knowledge and skills to recognize problems with pollution prevention, monitoring and other permit compliance issues. Therefore, Ecology has added a new requirement for inspectors to receive training and certification.

Specifically, S7.A.2 states:

2. Beginning January 1, 2012, visual inspections shall be conducted by a Certified Industrial Stormwater Manager (CISM), Certified Professional in Stormwater Quality (CPSWQ), or Professional Engineer.
  - a. This requirement does not apply to *small businesses* until January 1, 2013.

Ecology plans to develop Washington-specific training program, tentatively called “Certified Industrial Stormwater Manager (CISM)”, which would be similar to the Certified Erosion and Sediment Control Lead (CESCL) program for construction operators in Washington State. The program would need to be up and running well in advance so that industrial stormwater permittees could receive certifications by January 2012, and permittees defined as “small businesses” (defined as businesses with fewer than 50 employees) could receive training and certification by January 2013. Personnel who have received national certification as a “Certified Professional in Stormwater Quality (CPSWQ)”, or licensed Professional Engineer, would receive reciprocity, and not need to become trained or certified as a “Certified Industrial Stormwater Manager (CISM)” in order to perform inspections at industrial sites under the ISWGP.

### **S8. Corrective Actions**

The draft permit contains stormwater sampling, benchmarks, and corrective actions. Together, these elements comprise an adaptive management program as required by the RCW 90.48.555(8)(a). Facilities that exceed water quality-based numeric benchmark values (Special Condition S5.A&B) trigger incremental revisions to the facilities Stormwater Pollution Prevention Plan (SWPPP) to include additional Best Management Practices (BMPs).

In accordance with RCW 90.48.555(8), the adaptive management mechanism requires monitoring, evaluation, and reporting requirements to ensure that stormwater discharges are

controlled by adequate best management practices (BMPs) that prevent violations of water quality standards.

90.48.555(8)(a) states that "...the adaptive management mechanism shall include elements designed to result in permit compliance and shall include, at a minimum, the following elements:

- (i) An adaptive management indicator, such as monitoring benchmarks;
- (ii) Monitoring;
- (iii) Review and revisions to the storm water pollution prevention plan;
- (iv) Documentation of remedial actions taken; and
- (v) Reporting to the department."

90.48.555(8)(b) states that the permit must include the "timing and mechanisms for implementation of treatment best management practices".

To comply with these statutory requirements, the permit continues the previous permits' adaptive management approach that requires facilities to monitor stormwater quality against several water quality-based benchmarks (indicator values). The rationale for the selection and derivation of benchmark values for specific pollutant parameters is described in Special Condition S5.

This adaptive management program constitutes a water quality-based non-numeric (narrative) effluent limitation, as provided for in WAC 173-226-070(1)(d) and 40 CFR 122.44(k).

If the benchmark for a particular pollutant parameter is met, the discharge is presumed to not cause or contribute to a violation of water quality standards for that parameter. If a (water quality-based) benchmark is exceeded numerous times, the potential for a violation of water quality standards increases, and the facility is required to implement escalating levels of SWPPP review and the implementation of additional BMPs. With emphasis on pollution prevention rather than treatment, the adaptive management system directs facilities who exceed one or more benchmark begins with Level 1 operational source control BMPs. If a benchmark is exceed 4 more quarters, Level 2 requires additional structural source control BMPs. If a benchmark is exceeded 4 more times Level 3 requires treatment BMPs.

Since benchmark values are not numeric effluent limitations, discharges that exceed a benchmark value are not automatically considered a permit violation or a violation of water quality standards. However, if a permittee exceeds benchmarks that trigger a corrective action, but does not comply with the specific corrective action requirements in S8, it would be considered a permit violation. The rationale for the derivation of benchmark values is provided in Special Condition S5

If a benchmark is exceeded in a stormwater discharge, the draft permit requires the Permittee to take appropriate actions to identify and correct the problem(s) causing the benchmark exceedance. Compliance with these adaptive management actions ensures that:

1. Aquatic life and the other beneficial uses of state waters are likely protected by minimizing the concentrations and volumes of stormwater pollutants discharged into surface waters;

2. Permittees meet AKART; and
3. Permittees who discharge stormwater meet the intent of the Clean Water Act and Chapter 90.48 RCW.

The corrective action requirements and timelines were developed in consideration of Ecology's best professional judgment and experience with the success and failure of adaptive management requirements in the previous permit cycle.

Ecology also incorporated input from the 2008/2009 Industrial Stormwater Stakeholder Workgroup (ISSW), who reviewed examples of Level 2 and 3 Source Control Reports under the previous permit, and expressed concern that the adaptive management scheme lacked clarity, certainty and a well-defined compliance end-point. Several stakeholders requested that the new permit eliminate the "endless do-loop" that occurred when a Level 2 or 3 Corrective Action did not result in discharges below the action level, or was between the benchmark and action level. The ISSW also recommended that the new permit:

- Not trigger capital expenditures on a single benchmark exceedance, in recognition of the highly variable nature of stormwater discharges and limited value of quarterly grab samples to characterize facilities stormwater characteristics.
- Have an adaptive management scheme include mechanisms for that allow for flexibility and "off-ramps" for certain facilities, including the ability for facilities to obtain individual permits or other site-specific permitting actions.
- Transition existing facilities from the previous permit to the new one in a way that maintains forward progress through the adaptive management scheme.

To address internal and external objectives of a more effective adaptive management within the context of 90.48.555(8)(a), the draft permit has more clearly defined corrective actions requirements, performance expectations, and timelines.

#### Level 1, 2 and 3 SWPPP Review and Certification

S8 requires permittees who trigger a Level 1, 2 or 3 corrective action to review their SWPPP and ensure it is in full compliance with S3 (SWPPP), and contains the correct BMPs from the applicable Stormwater Management Manuals. This requirement is consistent with standard NPDES permit conditions described in 40 CFR 122.22 and is intended to ensure that the permittee understands its responsibility to create and maintain a complete and accurate SWPPP. Permittees are allowed to appoint an authorized representative consistent with the regulations. Therefore, if a facility feels it is more appropriate for a member of the stormwater pollution prevention plan team to sign the documentation, that option is available under the permit. The signature requirement includes an acknowledgment that there are significant penalties for submitting false information.

#### Level 1

Similar to the previous permit, the draft permit requires permittees to complete a Level 1 corrective action for any facility that exceeds a benchmark one time. Specifically, S8.A states:

Facilities not listed in Appendix 6 (at Level 2 or 3), that exceed any benchmark value [in tables (2-6)] during a single monitoring period (quarter) after January 1, 2010, shall complete a Level 1 Corrective Action in accordance with S8.A.1-4:

1. Review the SWPPP and ensure that it is in full compliance with Permit Condition S3, and contains the correct BMPs from the applicable Stormwater Management Manual.
2. Make appropriate revisions to the SWPPP to include additional *Operational Source Control BMPs* with the goal of achieving all benchmark values in future discharges.
3. Complete a Level 1 SWPPP Certification Form (Appendix 3) and attach to SWPPP.
4. **Level One Deadline:** Fully implement the revised SWPPP according to Permit Condition S3 and the applicable Stormwater Management Manual immediately, but no later than the deadline specified in Table 6.

**Operational Source Control BMPs** means schedule of activities, prohibition of practices, maintenance procedures, employee training, good housekeeping, and other managerial practices to prevent or reduce the pollution of waters of the state. Not included are BMPs that require construction of pollution control devices.

\* = **Operational source control BMPs** for Western Washington that may apply are on Ecology's web site at: <http://www.ecy.wa.gov/biblio/0510032.html>

\* = **Operational source control BMPs** for Eastern Washington that may apply are on Ecology's web site at: <http://www.ecy.wa.gov/biblio/0410076.html>

## Level 2

The previous permit required a Level 2 Response whenever “two out of the previous four quarterly sampling results... are above the action level.” Ecology has decided to revise the trigger for Level 2, based on internal and external concerns that the “two out of the previous four” criteria created unnecessary confusion, tracking problems, and caused some facilities repeat a Level 2 response numerous times. In order to make sure the adaptive management scheme progresses facilities in a linear matter (from Level 1 to 2, etc.), without repeating corrective action levels; and also transition existing facilities who reached Level 2 or 3 from the old permit into the new permit at Level 2, Condition S8.B requires the following:

### **Level Two Corrective Actions – Structural Source Control BMPs**

The following facilities shall complete a Level 2 Corrective Action in accordance with S8.B.1-4:

- Facilities not listed in Appendix 6 that exceed any benchmark value [in tables (2-6)] during any 4 separate quarterly monitoring periods after January 1, 2010; and
  - Facilities listed in Appendix 6 (Level 2).
1. Review the SWPPP and ensure that it is in full compliance with Permit Condition S3, and contains the correct BMPs from the applicable Stormwater Management Manual.

2. Make appropriate revisions to the SWPPP to include additional *Structural Source Control BMPs* with the goal of achieving all benchmark values in future discharges.
3. Complete a Level 2 SWPPP Certification Form (Appendix 3) and attach to SWPPP.
4. **Level 2 Deadline:** Fully implement the revised SWPPP according to Permit Condition S3 and the applicable Stormwater Management Manual immediately, but no later than the deadline specified in Table 6.
  - a. If installation of necessary *Structural Source Control BMPs* is not feasible within applicable *Corrective Action Deadline*; Ecology may approve additional time, by approving a *Modification of Permit Coverage*.
  - b. If installation of *Structural Source Control BMPs* is not feasible or not necessary to prevent discharges that may cause or contribute to a violation of a water quality standard, Ecology may waive the requirement for *Structural Source Control BMPs* by approving a *Modification of Permit Coverage*.
  - c. To request a time extension or waiver, a permittee shall submit an *Application for Coverage* form to Ecology in accordance with Condition S2.B, at least 90 days prior to the applicable Corrective Action Deadline, requesting “Modification of Coverage”. Within 60 days of receipt of a complete *Modification of Coverage* request, Ecology will approve or deny the request.

**Structural Source Control BMPs** means physical, structural, or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater.

Examples of Structural Source Control BMPs include, but are not limited to:

- Enclosing and/or covering the pollutant sources (e.g., within a building or other enclosure, a roof over storage and/or working areas, temporary tarps, etc.
- Physically separating the pollutant source to prevent run-on of uncontaminated stormwater (e.g., preventing clean stormwater from getting contaminated).
- Devices that direct contaminated stormwater to appropriate treatment BMPs (e.g., discharge to sanitary sewer if allowed by local sewer authority).

**Structural Source Control BMPs** for Western Washington that may apply are on Ecology’s web site at: <http://www.ecy.wa.gov/biblio/0510032.html>.

**Structural Source Control BMPs** for Eastern Washington that may apply are on Ecology’s web site at: <http://www.ecy.wa.gov/biblio/0410076.html>.

The draft permit requires permittees to revise their SWPPP to include additional structural source control BMPs, and certify that the SWPPP is consistent with the permit and applicable stormwater management manual. This requirement is consistent with standard NPDES permit conditions described in 40 CFR 122.22 and is intended to ensure that the permittee understands its responsibility to create and maintain a complete and accurate SWPPP.

The deadline for completing Level 2 is approximately 135 days following the DMR deadline for the monitoring period (quarter) that triggered the Level 2 response. In the case of facilities that enter the permit at Level 2, the Level 2 deadline is 135 days after the effective date of the permit. This timeframe was based upon Ecology best professional judgment with a recognition that in some cases, it will be infeasible for the permittee to meet the Level 2 deadline (e.g., due to local permitting delays, fish-windows, weather, etc.) so an extension of time may be requested and approved through a modification of permit coverage.

The draft permit includes a mechanism for permittees to request a waiver from installing additional structural source control BMPs, if it is infeasible or not necessary to prevent violations of water quality standards. If approved, this waiver would be authorized through a modification of permit coverage.

### Level 3

The draft permit continues the previous permits' emphasis on the installation of Treatment BMPs. However, Ecology has decided to refine and clarify the substance of Level 3, and clearly articulate the performance goal of Level 3 is attainment of the benchmark in future discharges. To ensure that the Level 3 response is effective, the portion of the SWPPP that deals with stormwater treatment structures or processes needs to be stamped by a professional Engineer, and the SWPPP needs to be submitted by the applicable Level 3 deadline.

Specifically, Condition S8.C states:

#### **Level Three Corrective Actions – Treatment BMPs**

The following facilities shall complete a Level 3 Corrective Action in accordance with S8.C.1-4:

- Facilities not listed in Appendix 6 that exceed any benchmark value [in tables (2-6)] during any 8 separate quarterly monitoring periods after January 1, 2010; and
  - Facilities listed in Appendix 6 (Level 2) that exceed any benchmark value [in tables (2-6)] during any 4 separate quarterly monitoring periods after January 1, 2010; and
1. Review the SWPPP and ensure that it is in full compliance with Permit Condition S3, and contains the correct BMPs from the applicable Stormwater Management Manual.
  2. Make appropriate revisions to the SWPPP to include additional *Treatment BMPs* with the goal of achieving all benchmark values in future discharges.
  3. Complete a Level 3 SWPPP Certification Form (Appendix 3) and attach to SWPPP. The portion of the SWPPP that addresses stormwater treatment structures or processes shall be designed and stamped by a professional Engineer, with certification that the SWPPP is consistent with Condition S3.A. Submit the revised SWPPP to Ecology by the Level 3 Deadline.

4. **Level 3 Deadline:** Fully implement the revised SWPPP according to Permit Condition S3 and the applicable Stormwater Management Manual immediately, but no later than the deadline specified in Table 6.
- a. If installation of necessary *Treatment BMPs* is not feasible within applicable *Corrective Action Deadline*; Ecology may approve additional time by approving a *Modification of Permit Coverage*.
  - b. If installation of *Treatment BMPs* is not feasible or not necessary to prevent discharges that may cause or contribute to violation of a water quality standard, Ecology may waive the requirement for *Treatment BMPs* by approving a *Modification of Permit Coverage*.
  - c. To request a time extension or waiver, a permittee shall submit an Application for Coverage form to Ecology in accordance with Condition S2.B, at least 90 days prior to the applicable *Corrective Action Deadline*, requesting “Modification of Coverage”. Within 60 days of receipt of a complete *Modification of Coverage* request, Ecology will approve or deny the request.

***Treatment BMPs*** are defined in Appendix 2. *Treatment BMPs* include, but are not limited to detention ponds, oil/water separators, biofiltration, sand filtration, constructed wetlands, etc.

*Treatment BMPs* for Western Washington that may apply are on Ecology’s web site at: <http://www.ecy.wa.gov/biblio/0510033.html>

*Treatment BMPs* for Eastern Washington that may apply are on Ecology’s web site at: <http://www.ecy.wa.gov/biblio/0410076.html>

The draft permit requires permittees to revise their SWPPP to include treatment BMPs, and certify that the SWPPP is consistent with the permit and applicable stormwater management manual. This requirement is consistent with standard NPDES permit conditions described in 40 CFR 122.22 and is intended to ensure that the permittee understands its responsibility to create and maintain a complete and accurate SWPPP.

RCW 90.48.555(8)(b) states that the permit must include the “timing and mechanisms for implementation of treatment best management practices”. The deadline for completing Level 3 *Treatment BMPs* is 135 days following the DMR deadline for the monitoring period (quarter) that triggered the Level 3 response. In the case of facilities that enter the permit at Level 3, the Level 3 deadline is 135 days after the effective date of the permit. This timeframe was based upon Ecology best professional judgment with a recognition that in some cases, it will be infeasible for the permittee to meet the Level 3 deadline (e.g., due to local permitting delays, fish-windows, weather, etc.) so an extension of time may be requested and approved through a modification of permit coverage.

The draft permit includes a mechanism for permittees to request a waiver from installing additional structural source control BMPs, if it is infeasible or not necessary to prevent violations of water quality standards. If approved, this waiver would be authorized through a modification of permit coverage.

#### Level 4

To address ongoing benchmark exceedances after Level 3 treatment is installed, the draft permit contains a new Level 4 Corrective Action. To address concerns about the previous permits' "endless do-loop", Level 4 is intended to provide an endpoint to the facilities adaptive management process, and ensure that Ecology considers site-specific conditions before taking regulatory action, such as issuing an administrative order for additional monitoring, active stormwater treatment, or an engineering report; or notifying the permittee to obtain an individual permit.

Specifically, S8.D states:

#### **Level Four Corrective Action**

The following facilities shall submit a Level 4 Notification Form to Ecology no later than 45 days after the applicable DMR deadline. See Table 6 for additional information:

- Facilities not listed in Appendix 6 that exceed any benchmark value [in tables (2-6)] during any 12 separate quarterly monitoring periods after January 1, 2010; and
  - Facilities listed in Appendix 6 (Level 2) that exceed any benchmark value [in tables (2-6)] during any 8 separate quarterly monitoring periods after January 1, 2010; and
1. When a facility triggers a Level 4 Corrective Action, Ecology will take one or more the following actions:
    - a. Issue an administrative order, requiring the permittee to:
      - i. Submit a receiving water study;
      - ii. Submit an engineering report in accordance with WAC 173-240-130;
      - iii. Perform additional water quality monitoring per Condition G12; or
      - iv. Perform additional pollution prevention and/or treatment measures at the facility, including but not limited to the installation of an *Active Stormwater Treatment System*.
    - b. Notify the permittee in writing to apply for a *Modification of Permit Coverage* in accordance with WAC 173-226-200(3)(f); or
      - i. Ecology may issue modified permit coverage based upon a site specific assessment that no additional pollution prevention and/or treatment measures are necessary to comply with AKART and the discharge is not causing or contributing to a violation of water quality standards.

- c. Notify the permittee in writing to apply for and obtain an individual permit or obtain coverage another more specific general permit, in accordance with WAC 173-226-240(2); or
- d. Notify the discharger in accordance with WAC 173-226-240(5) that coverage under the permit is no longer appropriate, and any actions required by the permittee in order for coverage under the permit to remain effective. The discharger shall have 30 days to respond to any notification provided by WAC 173-226-240(5) before coverage under the permit shall be automatically revoked.
- e. Terminate coverage under a general permit, in accordance with WAC 173-226-240(1).

*Active Stormwater Treatment Systems* include, but are not limited to, chemical treatment, enhanced media filtration, electro-coagulation and ion exchange.

### **S9. Reporting and Recordkeeping Requirements**

The reporting and recordkeeping requirements of Special Conditions S9. are based on Ecology's authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges. Reporting of monitoring results are specified in 40 CFR 122.44(i)(3 and 4) and WAC 173-226-090(3). Discharge Monitoring Reports must be submitted to Ecology even if there was no discharge or if sampling was suspended based on consistent attainment of benchmark values. Recordkeeping requirements in the draft permit are specified in 40 CFR 122.41(j)(2) and WAC 173-220-210(2)(b). The requirements of Condition S9 will assure that Ecology records are maintained and demonstrate compliance with sampling requirements by the facility.

### **S10. Compliance With Standards**

Condition S10 requires that discharges associated with industrial activity comply with all applicable state water quality and sediment management standards. Compliance with water quality standards is required in 40 CFR 122.44(d) and WAC 173-226-070(3)(a). Discharges that are not in compliance with these standards are not authorized by the permit and are subject to enforcement action.

In recognition of the difficulty stormwater presents in determining when a discharge is causing a water quality violation, the draft permit emphasizes BMPs and monitoring to prevent stormwater discharges from causing or contributing to violations of water quality standards. All Permittees are required to apply AKART, including the preparation and implementation of an adequate SWPPP, and the installation and maintenance of BMPs in accordance with the SWPPP and the terms and conditions of this permit.

RCW 90.48.555 directs Ecology's determination of compliance with water quality standards in this general permit. RCW 90.48.555(6) provides:

“Compliance with water quality standards shall be presumed, unless discharge monitoring data or other site specific information demonstrates that a discharge causes or contributes to violation of water quality standards, when the Permittee is:

1. In full compliance with all permit conditions, including planning, sampling, monitoring, reporting, and recordkeeping conditions; and
2. Fully implementing stormwater BMPs contained in stormwater technical manuals approved by Ecology, or practices that are “demonstrably equivalent” to practices contained in stormwater technical manuals approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs for on-site pollution control. "Demonstrably equivalent" means that the technical basis for the selection of all stormwater BMPs is documented within a SWPPP, including:
  - a. The method and reasons for choosing the stormwater BMPs selected;
  - b. The pollutant removal performance expected from the BMPs selected;
  - c. The technical basis supporting the performance claims for the BMPs selected, including any available existing data concerning field performance of the BMPs selected;
  - d. An assessment of how the selected BMPs will comply with state water quality standards; and
  - e. An assessment of how the selected BMPs will satisfy both applicable federal technology-based treatment requirements and state requirements to use AKART.

To ensure compliance with the Clean Water Act, stormwater treatment systems must be properly designed, constructed, maintained, and operated to:

1. Prevent pollution of state waters and protect water quality, including compliance with state water quality standards;
2. Satisfy state requirements for all known available and reasonable methods of prevention, control and treatment (AKART) of wastes (including construction stormwater runoff) prior to discharge to waters of the state; and
3. Satisfy the federal technology based treatment requirements under 40 CFR part 125.3.

Permittees must implement all the BMPs as identified in Special Condition S3, Stormwater Pollution Prevention Plan. Permittees must ensure that all BMPs are in place, operational, and routinely maintained. Treatment BMPs are also required for industrial activities that unavoidably lead to stormwater contamination. The SWMMs identify BMPs necessary to limit the exposure of stormwater to pollutants and in some cases to apply treatment. Ecology presumes that implementation of these BMPs will typically result in discharges of stormwater that will not violate water quality standards. If the prescribed BMPs fail to be protective, the Permittee must add additional BMPs to achieve compliance. Sampling and analysis provide an indication of when water quality violations may be a concern and additional BMPs required.

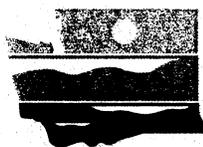
APPENDIX 9

Ex. P-26

Department of Ecology, *Industrial  
Stormwater Discharges to Impaired Water  
Bodies, Options for Numeric Effluent  
Limitations*

Draft Report to the Legislature

December 2008



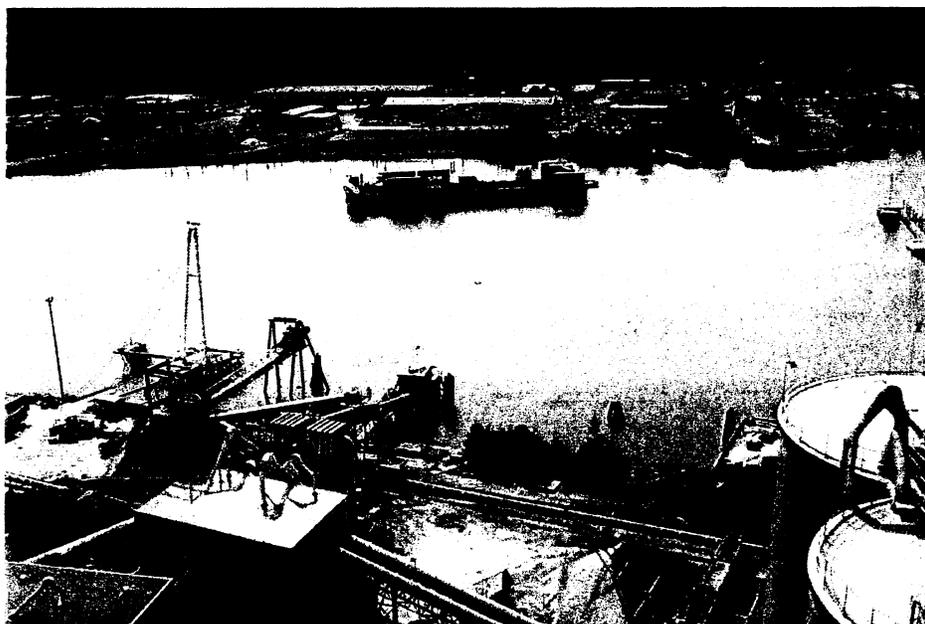
DEPARTMENT OF  
**ECOLOGY**  
State of Washington

# **Industrial Stormwater Discharges to Impaired Water Bodies**

## **Options for Numeric Effluent Limitations**

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*Report to the Legislature*



December 2008  
Publication no. xx-xx-xxx

## Publication and Contact Information

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For more information contact:

Publications Coordinator  
Water Quality Program  
P.O. Box 47600  
Olympia, WA 98504-7600

E-mail: [khig461@ecy.wa.gov](mailto:khig461@ecy.wa.gov)  
Phone: (360) 407-6722

Washington State Department of Ecology - [www.ecy.wa.gov/](http://www.ecy.wa.gov/)

- Headquarters, Olympia (360) 407-6000
- Northwest Regional Office, Bellevue (425) 649-7000
- Southwest Regional Office, Olympia (360) 407-6300
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Cover photo: Duwamish River industrial area, south of Seattle *by Washington State House of Representatives*

# **Industrial Stormwater Discharges to Impaired Waterbodies**

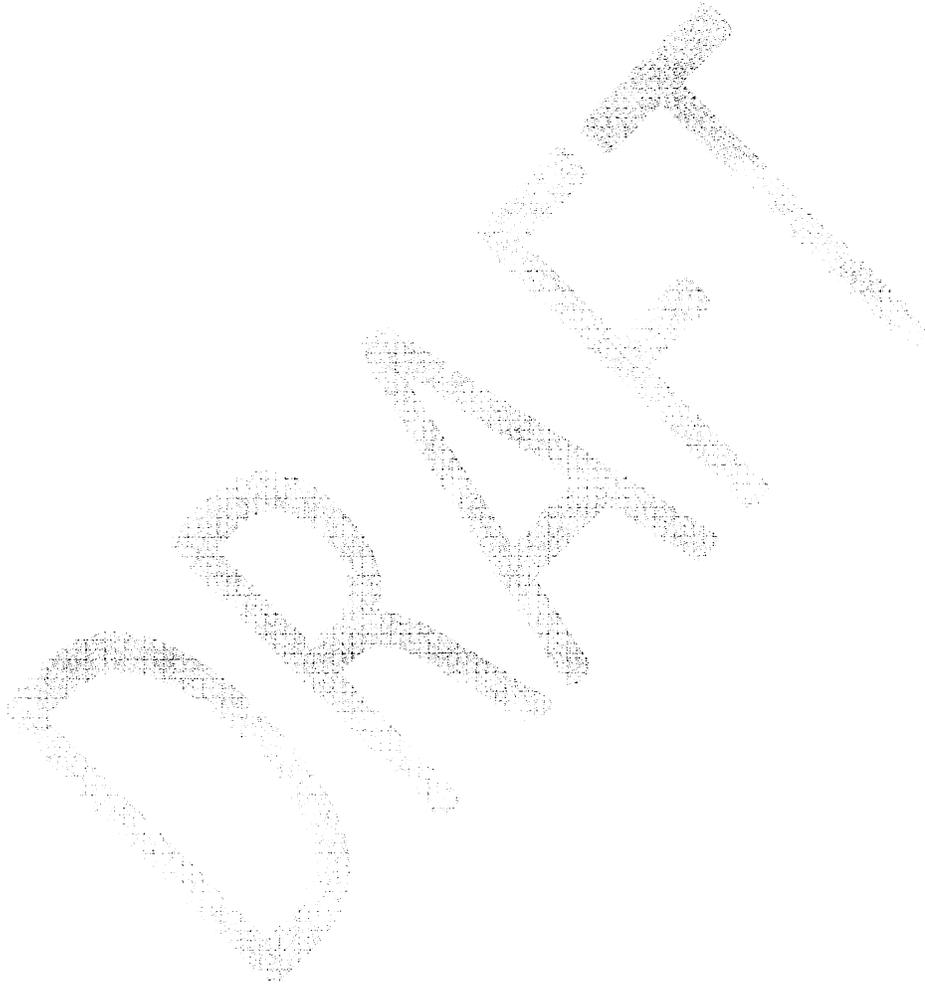
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## **Options for Numeric Effluent Limitations**

*by  
Jeff Killelea*

Water Quality Program  
Washington State Department of Ecology  
Olympia, Washington 98504-7710

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# Abstract/Executive Summary

The federal Clean Water Act requires that all states restore their waters to be “fishable and swimmable.” The Clean Water Act established a process to identify and clean up polluted (impaired) waters. All states are required to prepare a “303(d)” list of impaired waterbodies.

This report is submitted to fulfill RCW 90.48.555(7)(b), the Washington State Water Pollution Control Act, which requires the Department of Ecology to report to the legislature how numeric effluent limitations for industrial stormwater discharges will be implemented by May 1, 2009.

The report provides two options for deriving appropriate water quality based numeric effluent limitations for dischargers to water bodies listed as impaired according to the Clean Water Act. Option 1 involves setting *generic limits* based on generalized information; Option 2 involves *site-specific limits* based on the characteristics of the site and receiving waterbody. Depending on the assumptions used to identify which facilities are subject to numeric effluent limitations, the number of affected facilities (and workload) is significantly different. Therefore, Ecology’s preferred option is different, depending on the underlying assumptions used.

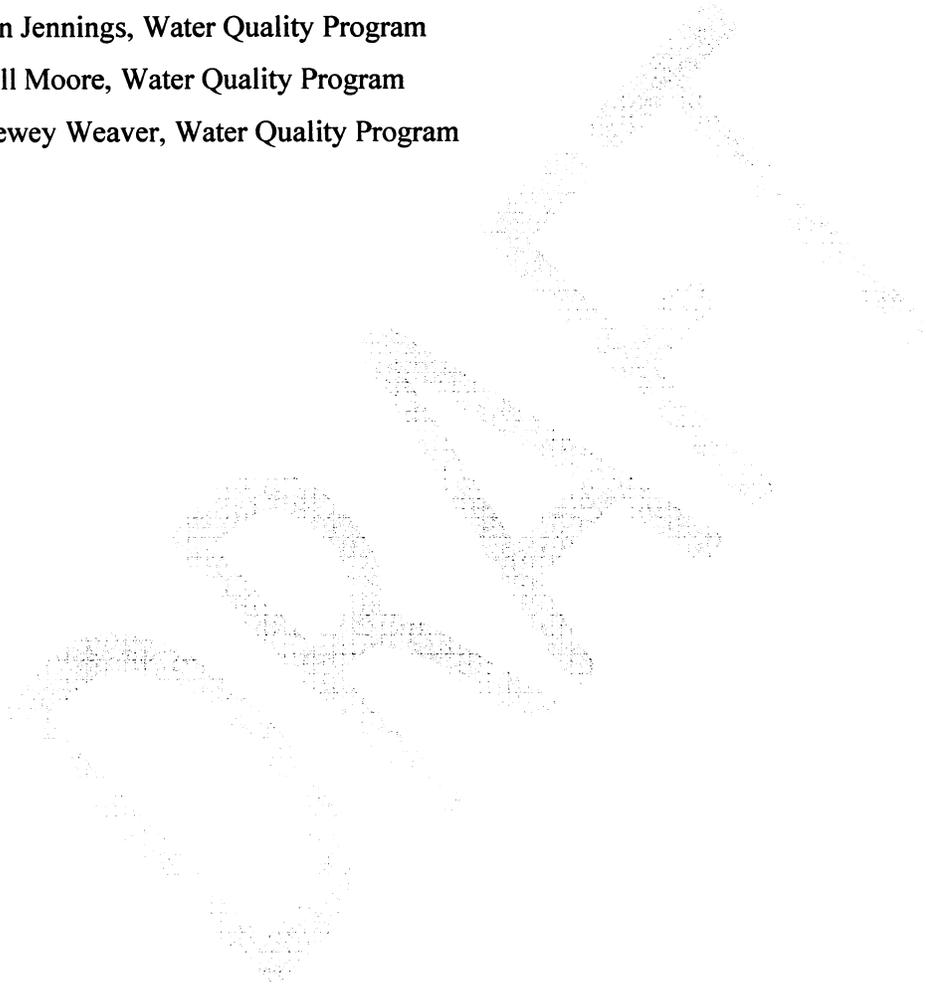
Ecology recommends the assumption that numeric effluent limits should only apply to facilities that could contribute to further impairment of the 303(d)-listed waterbody they discharge to. This would significantly reduce the number of facilities requiring limits, and allow Ecology to derive numeric effluent limitations using *site-specific information*. Limits based upon site-specific information would typically result in more appropriate discharge limitations to protect water quality.

The report identifies the approximate number of dischargers to impaired water bodies under Ecology’s proposed 2008 303(d) list of impaired waterbodies. Where possible, an assessment of anticipated rates of compliance is provided.

# Acknowledgements

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# Industrial Stormwater Discharges to Impaired Waterbodies on the Washington State 303(d) List

## Options for Establishing Numeric Effluent Limitations

### Background

#### Clean Water Act and the 303(d) List

The federal Clean Water Act, adopted in 1972, requires that all states restore their waters to be “fishable and swimmable”. The Clean Water Act established a process to identify and clean up polluted waters. Every two years, all states are required to prepare a list of water bodies that do not meet water quality standards. This list is called the *303(d) list* because the process is described in Section 303(d) of the Clean Water Act.

Waters placed on the 303(d) list require the preparation of Total Maximum Daily Loads (TMDLs), a key tool in the work to clean up polluted waters. TMDLs identify the maximum amount of a pollutant to be allowed to be released into a waterbody so as not to impair uses of the water, and allocate that amount among various sources. In addition, even before a TMDL is completed, the inclusion of a water body on the 303(d) list can reduce the amount of pollutants allowed to be released under permits issued by Ecology.

Ecology’s assessment of which waters to place on the 303(d) list is guided by federal laws, state water quality standards, and the Policy on the Washington State Water Quality Assessment (PDF). In the previous 303(d) lists, the primary water quality problems in our state’s waters were temperature and fecal coliform bacteria. Both are generally associated with nonpoint source pollution – that is, pollution which comes from many diffuse sources, not just from the end of a pipe.

Temperature is significant for the health of aquatic life. Salmon, especially, and other fish need cooler temperatures to survive and spawn. High temperatures can occur due to the discharge of hot water from power plants and industrial sources or, more often, from loss of vegetation along streams that used to shade the water and from new land uses (buildings and pavement) from which rainfall picks up heat before it runs off into the stream.

Fecal coliform bacteria are significant for human health as an indicator of the presence of disease-carrying organisms. It commonly comes from livestock, pet waste and failing septic tanks.

Other water quality problems which lead to 303(d) listings in Washington State include:

- Toxic substances from industrial and other sources, which can collect in sediments on the bed of the water or in the tissues of aquatic life.

- Erosion from roads, construction, and agriculture, which increases sediment in streams that can cloud the water and cover aquatic habitat.
- Too much organic waste decaying in the water, which can lower the levels of dissolved oxygen that fish and other aquatic creatures need to survive.
- Excessive nutrients, such as phosphorus and nitrogen, are the primary problem in Washington's lakes. Sources include irrigated agriculture, gardening practices, and urban and suburban property development. The nutrients cause algae and other aquatic plants to grow in lakes, which deprive aquatic life of vital oxygen. Algae can also make lakes unusable for recreation.

### **Washington State Water Pollution Control Act: RCW 90.48**

RCW 90.48.555 requires the Department of Ecology (Ecology) to develop appropriately derived water quality based numeric limits for discharges regulated by the Industrial Stormwater General Permit (ISWGP) to 303(d)-listed waters under the Federal Clean Water Act (33 U.S.C. SEC. 1313 (d)).

Specifically, RCW 90.48.555(7) states:

(a) The department shall modify the industrial storm water general permit to require compliance by May 1, 2009, with appropriately derived numeric water quality-based effluent limitations for existing discharges to water bodies listed as impaired according to 33 U.S.C. Sec. 1313(d) (Sec. 303(d) of the federal clean water act, 33 U.S.C. Sec. 1251 et seq.).

(b) No later than September 1, 2008, the department shall report to the appropriate committees of the legislature specifying how the numeric effluent limitation in (a) of this subsection would be implemented. The report shall identify the number of dischargers to impaired water bodies and provide an assessment of anticipated compliance with the numeric effluent limitation established by (a) of this subsection. (RCW 90.48.555(7))

Ecology is submitting this report to fulfill the requirements of RCW 90.48.555(7)(b).

### **Timing of Report In Relation To Other Regulatory Processes**

At the time of this report, Ecology is actively working with an external stakeholder advisory committee to develop a new ISWGP that will be issued in 2009, and remain in effect for the next 5 years.

In addition, the current 303(d) list of impaired waterbodies is about to be replaced. The proposed 2008 303(d)-list is currently being reviewed by EPA, and it may be approved within the next month. *For purposes of this report, Ecology used the proposed 2008 303(d) list. However, EPA's review could change the types and locations of 303(d)-listed waterbodies that trigger numeric effluent limits for industrial stormwater dischargers, i.e., some 303(d) water bodies could be added, and others could be removed. In particular, it is likely that as many as 200 sediment quality listings will be removed from the final list, based on EPA's review.*

### *Water Quality Program Funding Inadequate to Meet Statutory Requirements*

Inadequate funding and staff resources have prevented the Department of Ecology Water Quality Program from meeting the statutory deadlines in RCW 90.48.555(7). The statute requires Ecology to modify the industrial stormwater general permit by May 1, 2009 to require compliance with numeric effluent limitations. Inadequate funding (permit fees) has caused a reduction in program staff and, as a result, the May 1, 2009 deadline will not be met. Ecology expects to issue the next version of the industrial stormwater general permit in September 2009, which will include the effluent limitations required by RCW 90.48.555(7)(a).

The same shortfall in funding and staffing levels has contributed to the Water Quality Program's failure to submit *this* report the legislature by September 1, 2008 (RCW 90.48.555(7)(b) – the report is being submitted approximately 4 months late.

### **How Big Is The Problem of Impaired Waterbodies?**

Ecology's assessment of which waters to place on the 303(d) list is guided by federal laws, state water quality standards, and the Policy on the Washington State Water Quality Assessment (PDF). Waterbodies placed on the 303(d) list generally fall into four categories, based on the type of sampling used to demonstrate impairment (pollution):

- Chemical sampling indicating *pollution directly in the waterbody*, or water column;
- Sediment sampling, indicating *contaminated sediment*, at the bottom of a waterbody;
- Fish surveys, indicating that the waterbody has *fish with contaminated tissue*; and
- Bioassessment, or *biological surveys* of aquatic invertebrate communities.

### *Impairment Based on Sampling in the Water Column*

Most waterbodies on the state's 303(d) list were assessed based upon water quality data that shows violations of the numeric state water quality criteria (Surface Water Quality Standards WAC 173-201(A)). These pollutant parameters are measured directly in the water column, and include:

- Bacteria
- Dissolved Oxygen
- pH
- Total Phosphorus in Lakes
- Temperature
- Total Dissolved Gas
- Toxic Substances (Metals, Pesticides, Ammonia, etc.)
- Turbidity

Over 1,100 facilities are currently covered under the Industrial Stormwater General Permit. Based on a review of the proposed 2008 303(d) list, approximately 172 of these facilities discharge to a 303(d)-listed waterbody that was listed based on documented violations of the state's numeric water quality criteria (WAC 173-201(A)).

- Most of these facilities (100+) discharge to waterbodies impaired due to high temperature, high bacteria, and low dissolved oxygen.
- Approximately 37 facilities discharge to waterbodies impaired due to high pH.

- Approximately 6 facilities discharge to waterbodies impaired due to toxic substances, including ammonia, copper, zinc, mercury, and pentachlorophenol.
- Approximately 2 facilities discharge to waterbodies impaired due to excessive total phosphorus.

#### *Impairment Based on Contaminated Sediment*

The proposed 2008 303(d) list contains approximately 411 locations where freshwater or marine waterbodies contain contaminated sediments. At the time of this report, EPA is reviewing the proposed list and has indicated that as many as half of these locations will be removed from the final 2008 303(d) list. Therefore, Ecology is not able to provide a reliable estimate of the number of facilities discharging to waterbodies impaired due to contaminated sediment. As a point of reference, approximately 63 facilities covered under the current Industrial Stormwater General Permit discharge to sediment contaminated waterbodies on the 2004 303(d) list. The 2004 303(d) list will be superseded when EPA approves the 2008 303(d) list.

#### *Impairment Based on Contaminated Fish Tissue*

Based on a review of the proposed 2008 303(d) list, approximately 22 facilities covered under the Industrial Stormwater General Permit discharge to a 303(d)-listed waterbody that was listed based on data showing elevated levels of pollutants in fish tissue. These pollutants include organic compounds such as Polychlorinated biphenyls (PCBs), alpha-BHC, DDT and Dieldrin.

#### *Impairment Based on Bioassessment*

Based on a review of the proposed 2008 303(d) list, approximately 8 facilities covered under the Industrial Stormwater General Permit discharge to a waterbody that was placed on the 303(d) listed due to bioassessment. Bioassessment is a survey of benthic invertebrates in the waterbody. Benthic invertebrates are organisms that live on the bottom of a water body (or in the sediment) and have no backbone. The abundance, diversity and species composition of benthic invertebrates can be used as indicators of changing environmental conditions. Waterbody impairments based on bioassessment are typically attributed to:

- Physical alterations to the waterbody (e.g., streambed gravel smothered with fine sediment), or
- Pollution in the waterbody (e.g., toxic chemicals, low dissolved oxygen, etc).

## **Options for Establishing Numeric Effluent Limitations**

Ecology has evaluated two options for establishing water quality based numeric effluent limitations under the Industrial Stormwater General Permit. These options are described below:

### **Option 1: Use General Information to Derive Limits**

Under *Option 1*, Ecology would establish “generic” water quality based numeric effluent limits using regional or statewide assumptions of the discharge and receiving water characteristics.

This is in contrast to how Ecology would derive water quality based numeric effluent limitations for individual discharge permits, with procedures to account for site-specific information, such as:

- Potential dilution (how discharge mixes into receiving waterbody),
- Ratio of dissolved metals to total metals (dissolved metals may be toxic to organisms),
- Background concentration of the pollutants being discharged,
- Hardness (dissolved calcium and magnesium - affects toxicity of metals), and
- pH (acidity or alkalinity).

This site-specific analysis may require the discharger to collect and submit water quality data from the discharge and receiving waterbody, which can add considerable time and cost to the process.

If deriving limits for hundreds of facilities around the state, it would not be feasible for Ecology to conduct site-specific analysis to develop different numeric limits for each site. The overall workload would be unmanageable under current funding and staffing levels. Under *Option 1*, Ecology would derive effluent limits using statewide assumptions of discharge characteristics, receiving water characteristics, and applicable water quality standards.

## **Option 2: Use Site-specific Information to Derive Limits**

Under *Option 2*, Ecology would establish site-specific water quality based numeric effluent limits using site-specific information about the discharge and receiving water characteristics. The methodology would be similar to how effluent limits in individual waste discharge permits are derived.

Ecology's Permit Writers Manual includes a process for establishing water quality-based effluent limits for individual wastewater dischargers. Ecology's process is based upon the process developed by the United States Environmental Protection Agency (EPA) for deriving water quality-based numeric effluent limitations.

## **The Impact of Basic Assumptions on Ecology's Preferred Option**

The ability of Ecology to implement Option 1 (generic limits) and Option 2 (site-specific limits) is dependent on the set of assumptions used to determine which industrial facilities require limits. The following section describes the how different sets of assumptions about the "pollutants of concern" have a significant effect the number of facilities that require effluent limitations. The number of affected facilities has workload implications that directly influence Ecology's preferred option.

### **Assumption A: Limits Applied to All Facilities Discharging to 303(d) Waterbodies**

If limits are required for all 200+ facilities discharging to waterbodies on the 303(d) list, *regardless of the type of 303(d) listing*, it would be necessary to implement *Option 1*, and make generalized assumptions about discharge and receiving water characteristics, resulting in limits that are generic (rather than site-specific). It would be very time consuming and costly to implement *Option 2* and derive site-specific limits for hundreds of facilities using the

methodology used for individual waste discharge permits (receiving water studies, engineering reports, etc.).

- ***Under “Assumption A” Ecology prefers Option 1: Derive limits based on generalized information***

*Assumption A/Option 1: Number of Affected Facilities and Expected Compliance Rates*

Under Assumption A/Option 1, limits would be required for all facilities discharging to waterbodies on the 303(d) list, *regardless of the type of 303(d) listing.*

Table 1 provides an assessment of the number of facilities subject to limits under Assumption A (limits for all 303(d) discharges) using Option 1: generic limits based on generalized information and the applicable water quality standards (WAC 173-201A and National Toxics Rule).

Expected compliance rates are provided where possible, based upon a review of aggregate DMR data submitted by industrial facilities under the previous permit cycle.



Listed Parameter/ Parameter Monitored	Approximate Number of Facilities Subject to Limits	Water Quality Based Numeric Effluent Limitation	Expected Compliance Rates
4,4'-DDD	2	1.1 µg/L	unknown
Alpha-BHC	2	0.0039µg/L	unknown
Bioassessment	8	TBD	unknown
Chlorinated Pesticide	4	TBD	unknown
Copper/Copper	1	11.9 ug/L	33.99%
DDT	7	1.1 µg/L	unknown
Dissolved Oxygen	85	BOD5 11 mg/L	TBD
Mercury/Mercury	1	2.1 µg/L	100%
pH/pH	37	6.0 – 9.0 s.u.	87.11%
Fecal Coliform Bacteria	100	14 colonies/100 ml	TBD
High Molecular Weight Polycyclic Aromatic Hydrocarbons (HPAH)	11	TBD Per <i>National Toxics Rule</i>	unknown
PCB	21	0.014 µg/L	unknown
Temperature	32	TBD per <i>WAC 1730-201A</i>	unknown
Total Phosphorus/ Total Phosphorus	2	10 µg/L	99.05%
Total Ammonia/ Total Ammonia	1	10 µg/L	98.09%
Sediment Quality	TBD	30 mg/L TSS <sup>1</sup>	61.58%
Pentachlorophenol	1	9 µg/L	No Data; estimate 100%
Zinc/Zinc	1	109 ug/L	51.13%

Table 1. Assessment of facilities discharging to 303(d) water bodies subject to numeric effluent limitations, and expected compliance rates.

<sup>1</sup>For discharges to waterbodies impaired for sediment quality, Ecology is proposing a 30 mg/L Total Suspended Solids (TSS) limit, as a surrogate for the specific chemical compound causing contamination.

## **Assumption B: Apply Limits Only To Facilities That May Cause or Contribute To Water Quality Impairment**

If Ecology were to use the basic assumption that numeric effluent limits only apply to facilities discharging to impaired waterbodies that were “listed” due to pollutants that are typically present in industrial stormwater discharges, a more site-specific approach could be used to derive numeric effluent limitations.

Under this assumption, limits would not be required for the discharges to the following types of 303(d)-listed waterbodies:

- *Temperature.* Numeric effluent limits would not apply to waterbodies listed for temperature. The rationale is that temperature is a “seasonal” water quality problem, and considering weather patterns in Washington State, stormwater discharges typically do not occur during the late summer months when temperature impaired waterbodies are relatively warm and more susceptible to thermal loading (discharges of heated water).
- *Fecal Coliform.* Numeric effluent limits would not apply to waterbodies listed for fecal coliform bacteria, unless the industrial facility is determined by Ecology to be a source fecal coliform bacteria to the receiving water (e.g., compost facilities, facilities with guard dogs, etc.). This determination would be based upon information collected on the permit application form and/or facility-specific information collected by Ecology.
- *Low Dissolved Oxygen.* Numeric effluent limits would not apply to waterbodies listed for low dissolved oxygen (D.O.). Low D.O. impairments are seasonal (summer) problems, while stormwater discharges in Washington commonly occur from November through April. Low D.O. impairments are typically attributed to:
  - Heavy loading of nutrients (e.g., nitrogen or phosphorus) that cause excessive algae and plant growth, the decay of which depletes oxygen levels in the summer-time (eutrophication), or
  - Excessive discharges of wastewater or other substances with a high biochemical oxygen demand, expressed as BOD<sub>5</sub> - a test to see how fast biological organisms use up oxygen in a waterbody. These kinds of pollutants have a “far field” effect – which means the demand for oxygen doesn’t occur directly where the effluent or runoff water is discharged; it occurs somewhere downstream where decomposition finally occurs. This can make it difficult to show a direct relationship between the discharge of oxygen demanding substance and a low D.O. problem without site-specific water quality modeling.
- *Fish Tissue/Bioassessment.* Numeric effluent limits would not apply to waterbodies 303(d)-listed due contaminated fish tissue (e.g., PCBs, DDT, etc.) or bioassessment (surveys of benthic invertebrate communities). It would be extremely difficult to show a direct relationship between stormwater discharges and impairments due to contaminated fish tissue or bioassessment.

If limits are not imposed on facilities that discharge to waterbodies impaired due to factors other than stormwater (and not likely to be further degraded by stormwater), the number of affected

facilities would drop significantly and it would be more practical for Ecology to implement *Option 2* and derive appropriate limits based on site-specific information.

- ***Under “Assumption B” Ecology prefers Option 2: Derive limits based on site-specific information.***

*Assumption B/Option 2: Number of Affected Facilities and Expected Compliance Rates*

As described above, discharges to waterbodies listed for temperature, and low dissolved oxygen, would not trigger a numeric effluent limitation. Discharges to waterbodies impaired for fecal coliform bacteria would only be required if the industrial facility is a potential source of bacteria (e.g., compost facilities, facilities with guard dogs, etc.). In addition, 303(d) listings related to contaminated fish tissue (e.g., PCBs, DDT, etc.) or bioassessment (surveys of benthic invertebrate communities), would not trigger numeric effluent limitations. However, 303(d) listings for all other pollutant parameters would result in numeric effluent limitations.

Table 2 provides an assessment of the number of facilities subject to limits under Assumption B/Option 2. Several of these limits would require site-specific information to calculate the applicable discharge concentration. Where possible, the approximate numeric effluent limitation is provided. The expected compliance rates for copper, TSS, pentachlorophenol, and zinc are unknown at this time; for other parameters, expected compliance rates are based upon a review of aggregate discharge monitoring report (DMR) data from the last permit cycle.

Listed Parameter/ Parameter Monitored	Approximate Number of Facilities Subject to Limits	Water Quality Based Numeric Effluent Limitation	Expected Compliance Rates
Copper	1	Site-specific <sup>4</sup>	unknown
Mercury	1	2.1 ug/L	100%
pH	37	6.0 – 9.0 s.u.	87%
Fecal Coliform Bacteria	TBD	TBD	TBD
Total Phosphorus	2	10 µg/L	99%
Total Ammonia	1	10 µg/L	98%
Sediment Quality	TBD <sup>1</sup>	TSS 30 mg/L <sup>2</sup>	unknown
Pentachlorophenol	1	Site-specific <sup>3</sup>	unknown
Zinc	1	Site-specific <sup>4</sup>	unknown

Table 2. Assessment of facilities discharging to 303(d) water bodies subject to numeric effluent limitations, and expected compliance rates.

<sup>1</sup>EPA is currently reviewing Ecology's proposed sediment quality listings, and is expected to remove approximately 200 sediment listings from the final 303(d) list. Therefore, it is not possible to predict the number of facilities that may be subject to limits at this time.

<sup>2</sup>It would be difficult to calculate an appropriately derived limit for the chemical parameter causing sediment contamination (e.g., DDT, PCB, etc.). Therefore, Ecology is proposing a 30 mg/L Total Suspended Solids (TSS) limit as a surrogate for the specific chemical compound causing contamination.

<sup>3</sup> pH dependant limit based on: ( $\leq e^{[1.005(\text{pH}) - 4.830]}$ ) based on Surface Water Quality Standards (WAC 173-201A)

<sup>4</sup> Hardness dependant limit based on Surface Water Quality Standards (WAC 173-201A)

## Conclusion

This report summarizes two options to meet the requirements of RCW 90.48.555(7)(a): Option 1 involves setting generic limits based on generalized information; Option 2 involves site-specific limits based on the characteristics of the site and receiving waterbody. Depending on the assumptions used to identify which facilities are subject to numeric effluent limitations, Ecology's preferred option is different.

Ecology recommends using *Assumption B* – in which numeric effluent limits only apply to facilities discharging to impaired waterbodies that were “listed” due to pollutants that are typically present in industrial stormwater discharges at concentrations that could cause further impairment of the waterbody. This would allow Ecology to derive numeric effluent limitations using *Option 2 – site-specific information*. This will result in limitations that are based upon the facilities discharge characteristics and receiving waterbody characteristics.

If *Assumption A* is used – in which numeric effluent limits would apply to *all* facilities discharging to 303(d) listed waters (even those not discharging pollutants that contribute to impairment), Ecology would recommend *Option 1 – generic limits*, based on generalized information and assumptions about “typical” discharge and receiving water characteristics.

Ecology will continue to work with the external advisory committee on the development of the limits that will be included in the draft permit which is expected to be released for public comment in May 2009. Following the public comment period, Ecology will prepare a response to comments and make appropriate changes, and issue the final permit in September 2009.

## References

EnviroVision and Herrera. 2006. *Evaluation of Washington's Industrial Stormwater General Permit*. Prepared for the Washington State Department of Ecology by EnviroVision and Herrera Environmental Consultants, Inc., Seattle, Washington.

U. S. Environmental Protection Agency, Office of Water. 1991. *Technical Support Document for Water Quality-based Toxics Control*. EPA/505/2-90-001.

Washington State Department of Ecology (Ecology), 2006. *Water Quality Standards for Surface Waters of the State of Washington -- Chapter 173-201A WAC*. November 20, 2006. <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-201A> . Accessed December 3, 2008.

## APPENDIX 10

Ex. B-5

Industrial Stormwater General Permit  
Addendum to Fact Sheet:

Appendix C – Response to Public Comments

October 21, 2009

# **Industrial Stormwater General Permit**

## **Addendum to Fact Sheet: Appendix C - Response to Public Comments**

**October 21, 2009**

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## **LIST OF COMMENTORS**

Alaska Airlines/Horizon Air  
Albert, Leon and others  
Anchor QEA, LLC  
Associated Hygienic Products, LLC  
Association of Washington Business  
Bell Lumber and Pole Company  
Block, Jeremy  
BNSF Railway  
Boeing Company, The  
Boise Building Solutions Manufacturing, LLC  
BP West Coast Products, LLC  
Brincefield, Elvin  
Brownle, Tom and others  
Buse Timber & Sales  
Buse Timber & Sales  
Cambria Corporation  
Cappaert, Cynthia  
City of Bellingham  
City of Everett  
City of Longview  
Clancy, Jon and Cheryl  
Clough, Wally  
Columbia Riverkeeper  
Columbia Vista  
Compass Aerospace Northwest  
Copper Development Association  
Covey, Tim  
Crop Production Services  
Darigold, Inc.  
Dawson Consulting, LLC  
Dickmeyer, Roy  
Dion, Donna  
Drake, William  
Echo Bay Minerals  
Emerald Services, Inc.  
Environmental Compliance Tools, LLC  
Fabricated Products, Inc.  
Fazekas, Bill

### **List of Commentors Continued:**

Fleming, Barry  
Fry, Travis  
Gandalf Consulting Ltd.  
Gary Merlino Construction Co. Inc.  
General Recycling of Washington, LLC  
Green Garden Food Products, Inc.  
Greenwalt, Stacie  
Hecla Limited  
Hector, Jeff  
Hock, Lee  
Houston, William R.  
Howden, Sean  
Independent Business Association  
Interfor Pacific  
J.R. Simplot Company  
Jensen Shipyard  
Johnson, David T.  
Johnson, Robert N.  
Jorgensen Forge  
Kennedy/Jenks Consultants  
Kennedy/Jenks Consultants  
King County  
King County  
Klitzke, John M.  
Lakes Auto Wrecking, Midland Auto Wrecking  
Landau Associates, Inc.  
MacMillan-Piper, Inc.  
Manufacturing Industrial Council  
McCart, Chris  
Miller Nash  
Miller Shingle Company, Inc.  
Milne Fruit Products, Inc.  
Murphy  
NAI Puget Sound Properties  
National Oceanic and Atmospheric Administration  
Niebuhr, Carl  
Nisqually Environmental Sampling and Consulting  
Northland Services, Inc.  
Northwest Food Processors Association

### **List of Commentors Continued:**

Northwest Pulp & Paper Association  
Nykreim, Mike  
Ocean Beauty Seafoods, LLC  
Olympic Panel Products  
Pacific Topsoils, Inc.  
People for Puget Sound  
Phelps, Don  
Pierce County Recycling, Composting and Disposal, LLC  
Port of Bellingham  
Port of Seattle  
Port of Vancouver  
Precision Iron Works, Inc.  
Puget Sound Energy  
Puget Soundkeeper Alliance, Columbia Riverkeeper, and Spokane Riverkeeper  
Rice, Richard D.  
Schnitzer Steel Industries  
Smith, Gary  
Smith, Kendal  
Teck American Incorporated  
Thong, Darlene  
TMI Forest Products, Inc.  
Trident Seafood Corporation  
Unimin Corporation  
Union Pacific Railroad Company  
Vanderburgh, Ken and others  
WaferTech, LLC  
Washington Public Ports Association  
Washington State Department of Natural Resources  
Washington State Department of Transportation  
Waste Management of Washington, Inc.  
West, Arthur  
Weyerhaeuser  
White, David

## Summary of Significant Changes to the Draft Industrial Stormwater General Permit

Ecology reviewed and considered all comments submitted on the Draft Industrial Stormwater General Permit. Ecology has made significant changes to the draft permit, which are included in the final Industrial Stormwater General Permit, issued October 21, 2009.

The most significant changes are summarized below. The legal and technical basis for changes related to each public comment is included, as appropriate. Where language has been added, the new permit language is underlined. Deleted language is denoted with a “strikethrough” line, e.g., ~~stormwater~~.

Individual comments and responses are provided in the attached spreadsheet.

### **S1.A. Facilities Required to Seek Coverage Under This General Permit**

*Several commentors requested clarification on the permit requirements for facilities in the transportation sector (SIC codes 40XX, 41XX, 42XX, 43XX, 44XX, 45XX, and 5171). Ecology reviewed the applicable federal regulations, EPA’s Multi-Sector General Permit, discussed the issue with EPA (Region 10 and Headquarters). Changes have been made to Table 1 to improve clarity. One of these changes is to include “material handling facilities” in the criteria for permit coverage at transportation facilities [40 CFR 122.26(b)(14)]. Once a transportation facility obtains permit coverage, the specific areas and stormwater discharges authorized by the permit become site specific. Ecology disagrees with one commentor’s suggestion that maintenance activity conducted away from the maintenance shop is not covered under the permit. The intent of the ISWGP is to cover all vehicle maintenance activities at industrial facilities, not just those performed at the physical location of the shop. Since this section of the permit is to specify which type of facilities require permit coverage, Ecology has decided to take the approach in EPA’s MSGP and not include the “only those portions of the facility that are involved in vehicle maintenance...” statement requested by several commentors. Ecology also added definitions of “vehicle maintenance” and “material handling” based on EPA’s Final Phase I Stormwater Rule.*

#### **Revise S1.A.1 Table 1; Add “material handling facilities”:**

Transportation facilities which have <i>vehicle maintenance</i> shops, <u>material handling facilities</u> , equipment cleaning operations, or airport deicing operations:	
• Railroad Transportation	40xx
• Local and Suburban Transit and Interurban Highway Passenger Transportation	41xx
• Motor Freight Transportation (except SIC 4221–25)	42xx
• United States Postal Service	43xx
• Water Transportation	44xx
• Air Transportation	45xx
• Petroleum Bulk Stations and Terminals	5171

**Revise Appendix B Definitions; Add Material Handling, and Vehicle Maintenance:**

Material Handling means storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product.

Vehicle Maintenance means the rehabilitation, mechanical repairing, painting, fueling, and/or lubricating of a motor-driven conveyance that transports people or freight, such as an automobile, truck, train, or airplane.

**S1.C. Facilities Not Required to Obtain Coverage**

*A commentor requested that S1.C include clarification that facilities that discharge all stormwater to ground (e.g., stormwater infiltration) are not required to obtain permit coverage. Ecology agrees that this change is consistent with the Phase I and II stormwater rules, and has added appropriate language to S1.C.3:*

**Revise S1.C.3:**

Industrial facilities that discharge stormwater only to groundwater (e.g., on-site infiltration) with no discharge to surface waters of the state under any condition.

**S1.D.5. Facilities Excluded from Coverage**

*Several commentors expressed concern that municipally owned vehicle maintenance shops would require coverage under the draft ISWGP. However, municipally owned vehicle maintenance and storage facilities are classified as SIC 16xx (which is not in S1.A. Table 1) and therefore are not categorically required to obtain permit coverage. If a municipality operates a facility that is listed in S1.A. Table 1, permit coverage under the Industrial Stormwater General Permit is required. To improve clarity and reduce confusion, S1.D.5 has been revised:*

**Revise S1.D.5:**

Any facility authorized to discharge stormwater associated with industrial activity under an existing NPDES individual or other *general permit*. ~~This exclusion does not apply to stormwater discharged under the authority of a Phase I or Phase I municipal stormwater permit, except the Washington State Department of Transportation (WSDOT) municipal stormwater permit, which authorizes the discharge of stormwater associated with industrial activity from WSDOT vehicle maintenance facilities.~~

**S1.F. Conditional "No Exposure" Exemption**

*A commentor requested that S1.F include clarification regarding the processing of requests for Condition "No Exposure" (CNE) Exemptions. Particular concerns included facilities placement in "on-hold" status under the old permit indefinitely. Ecology has revised S1.F.1.a so that CNE requests are either approved or denied within 90 days, which allows Ecology time to schedule and conduct an inspection to verify that the site-specific conditions for a CNE exemption have been met.*

**Revise S1.F.1.a:**

- ~~a. Upon receipt of a complete and accurate No Exposure Certification Form, the No Exposure exemption is automatically granted in 60 days, unless the applicant is informed in writing within 60 days that the request is denied or that additional information is required.~~
- a. A Permittee is automatically granted a No Exposure exemption 90 days from Ecology's receipt of a complete and accurate No Exposure Certification Form, unless Ecology informs the applicant in writing or electronically within 90 days that it has denied or approved the request.

**S2.C Permit Coverage or Permit Modification Timeline**

*A commentor requested that S2.C. be modified to provide a confirmation by the Department that a complete application was received by the Department. Ecology has decided against writing Ecology's response into the general permit, but has revised S2.C.1 to provide additional clarity:*

If the applicant does not receive notification from Ecology, permit coverage or modification of coverage automatically commences on whichever of the following dates occurs last:

- a. The 31<sup>st</sup> day following receipt by Ecology of a completed *application* for coverage or modification of coverage form.
- b. The 31<sup>st</sup> day following the end of a 30-day public comment period.
- c. The effective date of the *general permit*.

**S2.C Permit Coverage or Permit Modification Timeline**

*A commentor requested that S2.C. be modified to provide a timeline for Ecology notification if additional information is required for an application. Ecology has revised S2.C.3 to provide additional clarity:*

- 1. When Ecology needs additional time:
  - a. Ecology will notify the applicant in writing within 30 days and identify the issues that the applicant must resolve before a decision can be reached.
  - b. Ecology will submit the final decision to the applicant in writing. If Ecology approves the *application* for coverage/modification, coverage begins the 31<sup>st</sup> day following approval, or the date the approval letter is issued, whichever is later.

**S3.B.4 Best Management Practices (BMPs)**

*Many commentors requested that Condition S3 be modified to list exceptions or alternatives for several of the mandatory BMPs listed in S3.B.4 (e.g., vacuum sweeping, lids on dumpsters, catch*

basin maintenance, roofs over material storage areas, spill prevention, erosion and sediment control BMPs, etc.).

*In an effort to reduce complexity and the length of the permit, Ecology decided against listing out all the various site conditions, industrial activities, or reasons that would justify an exception or alternative to mandatory BMPs. The permit includes language that allows permittees to document the basis for omitting individual mandatory BMPs, if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMP. To claim such an exception, the Permittee must clearly justify the exception or alternative BMP in the SWPPP.*

*Other commentors objected to the July 1, 2010 timeline to update the SWPPP and install the new BMPs on-site, and expressed concern that no SWPPP/BMP requirements would be in effect for the 1<sup>st</sup> 6months of the permit (January 1 – July 1, 2009).*

*To clarify the timeline for permittees to update SWPPPs to include the new mandatory BMPs in S3.B.4 and provide permittees some flexibility with the exact suite of BMPs that are appropriate and necessary for a wide range of facilities and site conditions, Ecology has revised S3.B.4.b:*

- ~~b. No later than July 1, 2010, the Permittee shall include each of the following BMPs in the SWPPP and ensure that they are implemented unless site conditions render the BMP unnecessary or not possible, and the exception is clearly justified in the SWPPP.~~
- b. No later than July 1, 2010, the Permittee shall include each of the following mandatory BMPs in the SWPPP and implement the BMPs. The Permittee may omit individual BMPs if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMPs; if the Permittee clearly justifies each BMP omission in the SWPPP. Prior to July 1, 2010, the Permittee shall implement the BMP requirements of the previous Industrial Stormwater General Permit, or Condition S3.B.4 of this permit.

*Commentors requested that the permittee only be responsible for identifying and control onsite sources of dust. Ecology agrees that it would be unreasonable for permittees to identify and control sources of dust that originate from beyond the facility boundary, and has revised S3.B.4.b.i.2.b):*

- ~~b) All sources of dust shall be identified and prevented from accumulating on hard surfaces at the facility.~~
- b) Identify and control all on-site sources of dust to minimize stormwater contamination from the deposition of dust on areas exposed to precipitation.

*The draft permit proposed a requirement to minimize the contamination of stormwater from open dumpsters: “All dumpsters shall be fitted with a lid that shall remain closed when not in use”.*

*Commentors requested that the permit address this somewhat differently, changing “with a lid” to “with a lid or placed under cover” since open dumpsters are sometimes placed under cover such as within a shed. or inside buildings. Ecology agrees that indoor dumpsters do not need to be closed, and Condition S3.B.4.b.i.3.c: has been revised:*

d): All dumpsters shall be kept under cover or, fitted with a lid that shall remain closed when not in use.

### **S3.B.4.b.iv Stormwater Peak Runoff Rate and Volume Control BMPs**

*Several commentors requested clarification on the permit requirements for Stormwater Peak Runoff Rate and Volume Control BMPs, also known as flow control BMPs. To eliminate some confusing language found in the previous permit, and included in the proposed draft, Ecology has revised S4.B.4.b.iv and added definitions for new development and redevelopment to Appendix 2 - Definitions.*

#### **Revise S4.B.4.b.iv:**

- ~~1) For stormwater runoff from new facilities and facilities that have significant process change, the Permittee shall evaluate whether flow control is necessary to satisfy the state's AKART requirements, and comply with state water quality standards.~~
- ~~2) At a minimum, the SWPPP shall include a narrative that describes how the Permittee determined whether flow control BMPs are/are not required.~~
- ~~3) The SWPPP shall include appropriate flow control BMPs from Ecology's SWMM for Western Washington, the SWMM for Eastern Washington, or equivalent manuals.~~
- ~~4) Permittees choosing not to use approved SWMMs or other Ecology approved technical guidance documents to meet this requirement shall include the technical basis for their chosen BMPs as described in the introductory paragraphs of Condition S3 and required in Condition S3.B.3.d.~~

Facilities with *new development* or *redevelopment* shall evaluate whether flow control BMPs are necessary to satisfy the state's AKART requirements, and prevent violations of water quality standards. If flow control BMPs are required, they shall be selected according to S3.A.3.

#### **Revise Appendix B Definitions; add *New Development*, and *Redevelopment*:**

*New Development* means land disturbing activities, including Class IV -general forest practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of impervious surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.

*Redevelopment* means on a site that is already substantially developed (i.e., has 35% or more of existing impervious surface coverage), the creation or addition of impervious surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities.

### **S3.B.4.b.iv Erosion and Sediment Control BMPs**

Commentors requested that the language regarding erosion and turbidity was overly broad and could be interpreted to mean any erosion or turbidity was a violation. Other comments noted that the permit formatted meant that all sites were subject to erosion and sediment control BMPs, without the providing permittees the ability to modify the SWPPP according to S4.B.4.b.<sup>1</sup> Ecology has revised the language to clarify the intent:

#### **Revise S4.B.4.b.iv:**

##### **Erosion and Sediment Control BMPs**

~~The SWPPP shall describe the BMPs necessary to prevent the erosion of soils and other earthen materials (crushed rock/gravel, etc.) and prevent off-site turbidity and sedimentation.~~

##### Erosion and Sediment Control BMPs

The SWPPP shall describe the BMPs necessary to prevent the *erosion* of soils and other earthen materials (crushed rock/gravel, etc.) and prevent off-site *sedimentation* and violations of *water quality standards*.

### **S3.B.5 Stormwater Sampling Plan**

*Commentors expressed concern about the complexity of the sampling plan requirements. Specific concerns about the requirements when there are multiple discharge points to discuss “the method used to determine differences in exposure to pollutants, pollutants likely to be in each discharge, and the relative comparison of probably pollutant concentrations”. Ecology agrees this language is confusing, and has adapted the relatively straightforward approach used in EPA’s MSGP. Conditions S3.B.5 and S4.B.2.c have been revised:*

#### **Revise Condition S3.B.5:**

##### **5. Sampling Plan**

The SWPPP shall include a sampling plan. The plan shall:

- a. Identify points of discharge to surface water, storm sewers, or discrete ground water infiltration locations, such as dry wells or *detention* ponds.
- ~~b. Include a discussion of *representative* sampling, and how the Permittee determined which points of discharge will be monitored when the facility has more than one point of discharge.~~
- b. Include documentation of why each *discharge* point is not sampled per S4.B.2.c (if applicable):
  - i. Location of which *discharge* points the Permittee does not sample because the *pollutant* concentrations are substantially identical to a discharge point being sampled.

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<sup>1</sup> The Permittee may omit individual BMPs if site conditions render the BMP unnecessary, infeasible, or the Permittee provides alternative and equally effective BMPs; if the Permittee clearly justifies each BMP omission in the SWPPP.

- ii. General industrial activities conducted in the drainage area of each discharge point.
- iii. Best Management Practices conducted in the drainage area of each outfall.
- iv. Exposed materials located in the drainage area of each discharge point that are likely to be significant contributors of pollutants to stormwater discharges.
- v. Impervious surfaces in the drainage area that could affect the percolation of stormwater runoff into the ground (e.g., asphalt, crushed rock, grass, etc.).
- vi. Reasons why the Permittee expects the discharge points to discharge substantially identical effluents.

**Revise Condition S4.B.2.c:**

2. Sample Location(s)

- ~~e. The Permittee shall sample each distinct point of discharge off-site and shall analyze each sample separately; except where pollutant types, at one or more distinct point of discharge off-site, do not vary (based on industrial activities and site conditions), the Permittee may sample only the discharge point with the highest concentration of pollutants.~~
- c. The Permittee shall sample each distinct point of discharge off-site except as otherwise exempt from monitoring as a “substantially identical outfall” per S3.B.5.b. The Permittee is required to monitor only one of the “substantially identical outfalls” if two or more outfalls discharge substantially identical effluents (based on similar industrial activities and site conditions).

**S4.B.1 Sampling Timing and Frequency**

*Commentors requested that the sampling requirements include sampling of the first fall storm event, consistent with Puget Soundkeeper Alliance et al. v. Washington State, Department of Ecology, PCHB Nos. 02-163 and 02-164 (August 4, 2003). Ecology agrees with the suggestion and first flush sampling has been incorporated into S4.B.1.b. Commentors also requested that routine stormwater sampling be required during each storm events “first flush”, i.e., early in each stormwater discharge event. Other commentors expressed support for the draft permits’ less complex sampling criteria, citing ease of sampling and reduced confusion and permit compliance problems. Based on a review of relevant comments Ecology has included language to require sampling within the first 12 hours of discharge, with provisions for sampling after the first 12 hours if it is was not possible to sample within 12 hours. This revision is based, in part, on recommendations made by Envirovision and Herrera in “Evaluation of Washington’s Industrial Stormwater General Permit” (November 2006):*

***Qualifying Monitoring Conditions***

*Current Permit:*

The current permit requires at least a 24-hour dry period before the targeted storm event, and that the storm event size is at least 0.1” of rain in 24 hours or reaches an intensity equal to 0.1” in 24 hours. It also stipulates that samples be collected within the first hour of discharge, although the permittee does not need to sample outside of regular business hours or in unsafe conditions. The current permit does allow for the use of “best efforts” to achieve storm event collection criteria and allows permittees to submit results even if one or more of the sampling criteria are not met.

*Recommended Change:*

1. Retain the 24-hour dry period requirement.
2. Remove the storm event size target.
3. Extend the sample collection period from 1 hour to within the first 12 hours of discharge. (underlined for emphasis)

*Rationale:*

The storm event size requirement (0.1” min) is inconsequential; any storm that results in discharge from the site should be appropriate for sampling. The emphasis on monitoring during the first hour of a storm event stems from evidence from other parts of the nation that there is a “first-flush” at the beginning of a storm event when pollutant concentrations are highest. While this may be the case when there is a long antecedent dry period before a storm event and/or there is a distinct storm front at the onset of the storm, it generally has not been found to be a consistent runoff characteristic in Western Washington. It can also be very difficult to meet the current criterion; it essentially means that all storms that begin outside regular working hours will not qualify and that an almost immediate response is needed for a storm event. Even if this criterion could consistently be met, it would not necessarily reflect the period of highest pollutant concentrations. Many site characteristics (site size, configuration, impervious surface, available stormwater detention, etc.) greatly affect the speed with which stormwater reaches the discharge point. This, in combination with the various storm event attributes (storm size, rain intensity, changes in intensity during the storm, duration of the storm, etc.) further confounds any prediction of the period when pollutant concentrations are likely to peak.

Although the qualifying storm event conditions in the existing permit are somewhat typical for stormwater monitoring, they also can hinder the collection of samples. As previously described, the majority of the explanations for why samples were not collected during a given quarter were due to non-qualifying storm events. One of the largest deterrents to collecting a sample, when there is a qualifying storm event, is trying to capture the first hour of discharge. This eliminates all storms that begin during non-work hours and also reduces flexibility around sample collection. The existing approach sets limits to sampling that are difficult to achieve in the hopes of capturing a worst case condition. It also provides permittees with an easy explanation for not obtaining the required samples. The recommended change will give permittees more flexibility and should result in more complete data sets. The data collected will represent the general discharge condition as opposed to worst case.

*Issues:*

This approach removes any perception of trying to monitor worst case conditions and places the emphasis on maximizing the number of samples collected to more fully characterize the discharge. However, as detailed above, it is unlikely that worst case conditions were actually being monitored due to the many confounding factors that influence pollutant concentrations in stormwater runoff. Instead, these qualifying conditions were likely to be limiting the number of events monitored and therefore decreasing the amount of site characterization data available.

**Revise Condition S4.B.1:**

- b. Permittees shall sample the *stormwater discharge* from the first fall storm event each year. “First fall storm event” means the first time after October 1<sup>st</sup> of each year that precipitation occurs and results in a *stormwater discharge* from a *facility*.
- c. Permittees shall collect samples within the first 12 hours of *stormwater discharge* events. If it is not possible to collect a sample within the first 12 hours of a *stormwater discharge* event, the Permittee must collect the sample as soon as practicable after the first 12 hours, and keep documentation with the sampling records (Condition S4.B.3) explaining why they could not collect samples within the first 12 hours.

**S4.B.2 Sample Location**

*Commentors expressed concern with language regarding sampling after stormwater passes through BMPs: “The Permittee shall take all samples after the stormwater passes through on-site BMPs, as close to the point of discharge off-site that can be achieved safely”. This was intended to ensure that permittees sampled in a location that represented “post-treatment” stormwater, i.e., downgradient of settling BMPs, oil/water separators, filtration, etc. However, in response to concerns about the language being too prescriptive and not flexible for permittees in certain discharge scenarios, Ecology has chosen to address this issue through guidance, rather than permit language.*

**Revise Condition S4.B.2:**

- e. ~~The Permittee shall take all samples after the stormwater passes through on-site BMPs, as close to the point of discharge off-site that can be achieved safely.~~

**S4.B.6 Consistent Attainment**

*Numerous commentors expressed concern about Ecology’s proposed “consistent attainment” language. Specifically, commentors objected to the need to re-demonstrate consistent attainment for parameters that were already suspended, or nearly suspended, during the previous permit cycle. Other commentors questioned the applicability of “consistent attainment” to discharges subject to numeric effluent limitations (e.g., 303(d)-related limits). Other commentors requested clarification about how “consistent attainment” is affected by quarters in which there is no sample collected, or no discharge. Others requested clarification of how consistent attainment is affected when facilities take multiple samples and average their results. Ecology has decided to allow a reduction in sampling due to consistent attainment if four consecutive quarterly samples collected after the*

*effective date of the permit are at or below the benchmark (or within acceptable range for pH). This means that some facilities that achieved, or were close to achieving, consistent attainment will need to start over when the final permit is issued; sampling values achieved under the old permit will not count towards consistent attainment under the new final permit. Ecology believes this is appropriate considering the dynamic nature of industrial activity, personnel, and other factors that can affect stormwater quality at a facility. Ecology also considered the new sampling requirements, including lower benchmarks for copper and other sector-specific benchmarks. Ecology deleted the language regarding consistent attainment of parameters subject to numeric effluent limitations (e.g. 303(d)-related effluent limits); consistent attainment is only available for benchmark sampling, except “visible oil sheen”. Ecology clarified that if a permittee takes multiple samples during a quarter, the results are averaged and compared to the benchmark to determine if the benchmark was “attained” that quarter. Ecology also clarified that permittees can’t suspend visual inspections for “visible oil sheen” based on consistent attainment. To address these issues, S4.B.6 has been revised:*

**Revise Condition S4.B.6:**

- ~~6. After the effective date of this permit, the Permittee may suspend sampling for one or more parameters based on consistent attainment of *benchmark* values when:~~
- ~~a. Eight consecutive quarterly samples in which the reported value for the listed parameter, other than pH, is equal to or less than the benchmark value.~~
  - ~~b. For pH, the eight consecutive quarterly samples shall be within the range of 6.5 to 8.5 (freshwater) or 7.0 to 8.5 (marine).~~
  - ~~e. For discharges to 303(d) listed water bodies, eight consecutive quarterly samples fail to detect the presence of the listed parameter.~~
6. The Permittee may suspend sampling for one or more parameters (other than “visible oil sheen”) based on consistent attainment of *benchmark* values when:
- a. Four consecutive quarterly samples, collected after the effective date of this permit, demonstrate a reported value equal to or less than the *benchmark* value; or for pH, within the range of 5.0 – 9.0.
  - b. For purposes of tallying “consecutive quarterly samples”:
    - i. Do not include any quarters in which the Permittee did not collect a sample, but should have (e.g., discharge(s) occurred during normal working hours, and during safe conditions; but no sample was collected during the entire quarter). If this occurs, the tally of consecutive quarterly samples is reset to zero.
    - ii. Do not include any quarters in which the Permittee did not collect a sample because there was no *discharge* during the quarter (or the discharges during the quarter occurred outside normal working hours or during unsafe conditions). These quarters are not included in the calculation of four consecutive quarters, but do not cause the tally to be reset; i.e., they are skipped over.
  - c. Permittees monitoring more than once per quarter shall average all of the monitoring results for each parameter (except pH and “visible oil sheen”) and compare the average value to the *benchmark* value.

## **S5. Benchmark Definition**

*A commentor requested that the benchmark definition from Section S4.D.2. of the current permit be retained: "Benchmark values are not water quality standards and are not permit limits. They are indicator values." Ecology has added that statement to the definition of Benchmark in Appendix 2:*

### **Revise Appendix 2:**

***Benchmark** means a **pollutant** concentration used as a permit threshold, below which a pollutant is considered unlikely to cause a water quality violation, and above which it may. When pollutant concentrations exceed benchmarks, corrective action requirements take effect.*

***Benchmark values are not water quality standards and are not numeric effluent limitations; they are indicator values.***

## **S5.A Benchmarks and Sampling Requirements**

***Copper.** Several commentors objected to Ecology's proposal to assign copper sampling and benchmarks only to specific industrial sectors, rather to all facilities under the permit. Other commentors supported Ecology's proposal to limit copper sampling to specific industrial sectors. Numerous commentors are opposed to Ecology's proposed copper benchmark values, which are significantly lower than the benchmark and action level in the previous permit. Commentors also cited concerns about the economy, and the practical achievability of the benchmarks without expensive treatment systems. Ecology received comments opposing the water quality-based methodology used to derive the benchmark values, i.e., Monte Carlo Simulation. Some of these comments requested that the benchmark be set at a level that facilities could consistently achieve with existing BMPs, based on DMR data submitted under the previous permit cycle. Other commentors believe that benchmarks should be site-specific, based on site and receiving water conditions. Several commentors are opposed to Ecology's assessment that discharges at or below the benchmark concentration had a 90% probability of meeting in-stream water quality criteria with a dilution factor of 5. Commentors stated that consideration of dilution in setting the benchmark is inconsistent with applicable regulations, based on recent PCHB rulings on mixing zones in general permits.*

*Ecology gave carefully consideration to all comments about copper, and has decided to set the copper benchmark value at 14 ug/L (western WA) and 32 ug/L (eastern WA), based on the legal and technical basis set forth in the fact sheet and Herrera risk analysis [Water Quality Risk Evaluation for Proposed Benchmarks/Action Levels in the Industrial Stormwater General Permit]. Ecology has decided to add total copper as a core sampling requirement for all facilities under the permit regardless of SIC code or industrial activity. This change was based on ubiquitous nature of copper in stormwater discharges associated with industrial activity, and the known toxicity of copper on endangered salmon and trout species found in receiving waters throughout Washington State. Condition S5.A has been revised accordingly.*

***Zinc.** Several commentors objected to Ecology's proposal to replace the previous permits' zinc benchmark (117 ug/L) and action level (372 ug/L), with new benchmark values: 200 ug/L (western WA) and 255 ug/L, based on a water quality-based risk assessment. The previous*

*permit required permittees to perform a Level 1 corrective action response based on exceedance of the (117 ug/L) benchmark, and Level 2 and 3 responses on multiple exceedances of the (372 ug/L) action level. With the draft permit eliminating the 2-tier benchmark/action level trigger in favor of a single benchmark trigger, many commentors objected to Ecology “lowering” the benchmark (adaptive management trigger), while objected to “raising” the benchmark. The objections were the same as, or similar to, the concerns raised about copper (i.e., economic impact, too stringent, not stringent enough, dilution factors, toxicity, etc.).*

*Ecology gave carefully consideration to all comments about zinc, and has decided to retain the previous permits’ benchmark of 117 ug/L, as it is lower and more stringent than the proposed benchmarks of 200 ug/L (western WA) and 255 ug/L. In a previous appeal of the Industrial Stormwater General Permit, the Pollution Control Hearings Board concluded that the 117 ug/L zinc benchmark was “reasonably close to the water quality criteria in many, but not all cases” and “adequate for purposes of the Permit”<sup>2</sup>. Ecology agrees. Condition S5.A has been revised to reflect a zinc benchmark of 117 ug/L, which applies to all facilities statewide.*

***pH.** Several commentors objected to Ecology’s proposal to replace the previous permits’ pH benchmark (6.0-9.0 su) and action level (outside 5.0-10.0 su), with a pH benchmark value of 6.0 -9.0 su. Many commentors objected to the lower end of the proposed pH benchmark range (6.0), citing the commonly low pH of rainfall in Washington State (between 5.0 and 6.0 su). Ecology believes that it would be inappropriate for permittees to be performing corrective actions to address pH excursions that were due to acidic rainfall (between 5.0 – 6.0 su), considering the very low probability of stormwater discharges to cause violations of water quality standard for pH. Ecology has decided to set the pH benchmark range at 5.0 – 9.0 su.*

***Oil and Grease/ Visible Oil Sheen.** Several commentors objected to Ecology’s proposal to replace the previous permits’ oil and grease benchmark (15 mg/L; EPA 1664) with an observation of sampling/discharge point for “visible oil sheen”. Many commentors objected to this change. Common concerns included the relative loss of objectivity with a visual observation (compared to lab analysis), concerns about “natural” oil sheen from decaying organic matter, and concerns about every drip or oil sheen in a parking lot being a trigger for adaptive management. Other commentors suggested that if a visible sheen was observed, it should be followed-up with oil and grease or Total Petroleum Hydrocarbon analysis. Ecology considered all comments submitted on oil and grease monitoring, and reviewed Envirovision and Herrera’s 2006 recommendation<sup>3</sup> to use visual observations rather than oil and grease analysis:*

*“... only 7 percent of the samples for oil and grease exceeded the benchmark. Furthermore, oil and grease concentrations in the majority of samples were below applicable detection limits. The reason there are few excursions of the oil and grease benchmark is more likely related to how and when the samples are collected, rather than providing evidence of well controlled site conditions. Oil and grease problems are more appropriately addressed by visual assessments; by the time the laboratory results are available, the event causing the problem will likely have ended.”*

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<sup>2</sup> PCHB 02-162 Consolidated with PCHB 02-163 & PCHB 02-164 Findings of Fact, Conclusions of Law and Order

<sup>3</sup> Evaluation of Washington’s Industrial Stormwater General Permit (Envirovision and Herrera 2006)

*Ecology has decided to retain the visible oil sheen benchmark as it is a clear and rapid indicator of petroleum contamination of stormwater and distinguishable from oil sheen due to from decaying organic matter. Ecology is clarifying that visible oil sheen benchmark applies at the stormwater sampling location(s), prior to discharge from the site. An occurrence of visible sheen in a location other than a stormwater sampling/discharge point is not considered a benchmark exceedance.*

**Revise S5.A. Table 2:**

**Table 2: Benchmarks and Sampling Requirements Applicable to All Facilities**

<b>Parameter</b>	<b>Units</b>	<b>Benchmark Value</b>	<b>Analytical Method</b>	<b>Laboratory Quantitation Level <sup>a</sup></b>	<b>Minimum Sampling Frequency <sup>b</sup></b>
Turbidity	NTU	25	EPA 180.1 Meter	0.5	1/quarter
pH	Standard Units	<del>Between 6.0 and 9.0</del> Between 5.0 and 9.0	Meter/Paper <sup>c</sup>	±0.5	1/quarter
Oil Sheen	Yes/No	No Visible Oil Sheen	N/A	N/A	1/quarter
<u>Copper, Total</u>	<u>µg/L</u>	<u>Western WA: 14</u> <u>Eastern WA: 32</u>	<u>EPA 200.8</u>	<u>2.0</u>	<u>1/quarter</u>
Zinc, Total	µg/L	<del>Western WA: 200</del> <del>Eastern WA: 255</del> 117	EPA 200.8	2.5	1/quarter

**S5.B Additional Sampling Requirements for Specific Industrial Groups**

*Ecology received several comments about the sector-specific sampling and benchmark requirements contained in Table 3. The following is a summary of significant changes to Table 3:*

Category 1 Chemical and Allied Products (28xx), Food and Kindred Products (20xx): *No change*

Category 2 Primary Metals(33xx), Metals Mining (10xx), Automobile Salvage and Scrap Recycling (5015 and 5093), Metals Fabricating (34xx): *Copper deleted, since it now a core sampling requirement for all facilities.*

Category 3 Hazardous Waste TSDs and Dangerous Waste Recyclers: *No change*

Category 4 Air Transportation (45xx): *No change*

Category 5 Timber Product Industry (24xx), Paper and Allied Products (26xx): *Based on several comments and a review of the EPA MSGP, Ecology has decided to apply a COD and TSS benchmark (COD = 120.0 mg/L; TSS = 100 mg/L) while deleting the BOD5 benchmark. The rationale for the benchmarks are contained in the MSGP fact sheet and are hereby incorporated by reference.*

## **S6.A Additional Sampling Requirements and Effluent Limits for Discharges to Certain 303(d)-listed Waters**

*Ecology received several comments about the applicability and derivation of effluent limits for discharges to 303(d)-listed waterbodies. The following is a summary of significant changes to Table 5. Sampling and Effluent Limits Applicable to Discharges to 303(d)-listed Waters:*

**Fecal Coliform Bacteria:** *Based on comments received, the final permit was revised to require all facilities discharging to 303(d)-listed waterbodies (Category 5) subject to fecal coliform effluent limitation, rather than only applying limit to certain SIC codes. Effluent limit for fecal coliform was revised from 100 (freshwater)/43 (marine) # colonies/100 ml to the applicable water recreation bacteria criteria (WAC 173-201A) that pertains to the receiving waterbody (site-specific).*

**Mercury:** *Based on a comment received, Table 5 was revised to include the mercury limits, which are not hardness dependant. The mercury effluent limits added to Table 5 are 2.1 ug/L (freshwater) and 1.8 ug/L (marine), based upon the acute criteria in WAC 173-201A, with a translator value of 0.85, applied end-of-pipe.*

**pH:** *Based on comments received, Table 5 was revised to correct error and make consistent with the Fact Sheet. The following footnote for pH was added to Table 5: The effluent limit for a Permittee who discharges to a fresh water body 303(d)-listed for pH is: Between 6.0 and 8.5, if the 303(d)-listing is for high pH only; Between 6.5 and 9.0, if the 303(d)-listing is for low pH only; and Between 6.5 and 8.5 if the 303(d)-listing is for both low and high pH. For marine waters: 7.0 - 8.5.*

## **S7. Inspections**

*Ecology received numerous comments opposing the draft permit requirement for routine facility inspections to be conducted by a Certified Industrial Stormwater Manager (CISM). Many comments included questions and concerns about the specific details of the yet-to-be developed CISM training program.*

*Based on public comments received and other considerations, Ecology has deleted the requirement for inspections to be conducted by a Certified Industrial Stormwater Manager (CISM), Certified Professional in Stormwater Quality (CPSWQ), or Professional Engineer. The final permit requires inspections to be conducted by "qualified personnel". The following definition (adapted from EPA MSGP) was added to Appendix 2: Qualified personnel means those who possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility, and evaluate the effectiveness of best management practices required by this permit.*

*Following permit issuance, Ecology plans to work with stakeholders on developing a "CESCL-like" training program for industrial permittees, as training and education has been identified as*

*possible solution to reduce compliance problems related to SWPPPs, BMPs, sampling, inspections and reporting.*

## **S8. Corrective Actions**

*Ecology received numerous comments opposing the draft permits' corrective action requirements. Commentors cited concerns with the way permittees that triggered a Level 2 or 3 response under the previous permit were identified or "labeled" in the permit, requiring implementation of a Level 2 Corrective Action when the final permit become effective. Some commentors expressed concern that such a "cross-walk" from the old permit to new, was demotivating because it fails to recognize the significant investment and progress some facilities made in their Level 2 or 3 responses under the old permit. Many commentors suggested ways to de-list or lower a facilities' Corrective Action status based on DMR data, consistent attainment, petitions, or other site specific considerations. Ecology found many of these suggestions overly complex or otherwise not implementable within the context of a general permit. Many commentors asserted that Ecology's adaptive management approach effectively means the benchmark values "numeric effluent limits" rather than adaptive management indicators. Many commentors stated that they Corrective Action requirements are overly prescriptive and unworkable in terms of cost and timing, especially for treatment BMPs to remove dissolved metals from stormwater. A common concern raised was the triggering of corrective actions based on any parameter benchmark being exceeded – as opposed to the same parameter being exceeded more than once – as this significantly increases the likelihood of corrective actions being taken, and does not allow for adequate source control investigations or other actions based on a particular pollutant.*

*Many commentors expressed the concern that the proposed Corrective Action requirements were not stringent enough, citing concerns that the triggers for adaptive management were lax, allowed too much time to implement additional BMPs, and was a violation of the anti-backsliding provisions of the Clean Water Act. Some concerns were based on the interpretation that the permit excused permittees from implementing Level 3 Treatment BMPs that were triggered under the previous permit. Significant concern was expressed about the reduction in paperwork requirements for Level 1, 2 and 3 corrective actions, compared to the previous permit, stating that it severely diminishes public oversight of permit compliance.*

*Many commentors opposed the Level 4 requirements as vague, uncertain, and some claimed the approach was illegal. The provisions for Level 2 and 3 time extensions and waivers were also the subject of many comments and questions.*

*Ecology has considered all comments related to Corrective Actions has made significant changes to Condition S8.*

*Ecology has determined that it is not necessary to include a cross-walk from the old permit to the new. Ecology decided to delete the list of facilities that triggered corrective actions under the previous permit, and has chosen to address the issue more simply in a revised S8.A:*

**In addition to the Corrective Action Requirements of S8.B-D, Permittees shall implement any applicable Level 1, 2 or 3 Responses required by the previous Industrial Stormwater**

General Permit(s). Permittees shall continue to operate and/or maintain any source control or treatment BMPs related to Level 1, 2 or 3 Responses implemented prior to the effective date of this permit.

*Ecology has revised the Level 1, 2 and 3 Corrective Action requirements. Level 2 and 3 corrective actions are pollutant parameter-specific, i.e., are triggered by multiple exceedances of the same benchmark parameter. The revised S8 Corrective Actions are an “enforceable adaptive management mechanism” consistent with RCW 90.48.555(8)(a). The final permit makes it clear that a facilities’ status at Level 1, 2, 3 is not permanent. Rather, Level 1, 2 or 3 corrective actions may be triggered and completed multiple times during the permit cycle depending site conditions, industrial activity, efficacy and consistency of corrective actions taken, and other factors.*

- *Level 1 corrective action is required each time a benchmark is exceeded, with a corrective action deadline set at the DMR due date.*
- *The final permit requires permittees to submit Annual Reports which will contain documentation of Level 1, 2 and/or 3 corrective actions, if applicable. This approach is used by EPA and other states. Ecology believes this is more trackable compared to the Level 2 and 3 Source Control Reports required under the previous permit. Ecology plans to provide education and outreach to ensure permittees are aware of Annual Report requirements and deadlines.*
- *Level 2 corrective action is required a facility exceeds a benchmark value (for a single parameter) for any two quarters during a calendar year. The deadline is Sept 30<sup>th</sup> the following year.*
- *Level 3 corrective action is required a facility exceeds a benchmark value (for a single parameter) for any three quarters during a calendar year. The deadline is Sept 30<sup>th</sup> the following year.*
- *Language has been added to ensure that benchmark exceedances that occur while a facility is completing a Level 2 or 3 corrective action will not trigger an additional Level 2 or 3 corrective action the following year.*
- *The timelines and process for requesting waivers or time extensions have been revised to facilitate Ecology review and still allow enough time if the request is denied.*
- *Table 6 (Corrective Action Deadlines) has been deleted, since the deadlines in the final permit are straightforward.*
- *Level 4 has been deleted. Ecology retains the authority to issue orders, revoke permit coverage, require individual permits, and take other administrative actions proposed in Level 4, on a case-by-case basis.*

#### **Draft Permit:**

##### **~~Level One Corrective Actions—Operational Source Control BMPs~~**

~~Facilities not listed in Appendix 6 (at Level 2), that exceed any benchmark value [in tables (2-6)] during a single monitoring period (quarter) after January 1, 2010, shall complete a Level 1 Corrective Action in accordance with S8.A.1 4:~~

~~Review the SWPPP and ensure that it is in full compliance with Permit Condition S3, and contains the correct BMPs from the applicable Stormwater Management Manual.~~

~~Make appropriate revisions to the SWPPP to include additional *Operational Source Control BMPs* with the goal of achieving all benchmark values in future discharges.~~

~~Complete a Level 1 SWPPP Certification Form (Appendix 3) and attach to SWPPP.~~

~~**Level One Deadline:** Fully implement the revised SWPPP according to Permit Condition S3 and the applicable Stormwater Management Manual immediately, but no later than the deadline specified in Table 6.~~

**Operational Source Control BMPs** means schedule of activities, prohibition of practices, maintenance procedures, employee training, good housekeeping, and other managerial practices to prevent or reduce the pollution of waters of the state. Not included are BMPs that require construction of pollution control devices.

\* = **Operational source control** BMPs for Western Washington that may apply are on Ecology's web site at: <http://www.ecy.wa.gov/biblio/0510032.html>

\* = **Operational source control** BMPs for Eastern Washington that may apply are on Ecology's web site at: <http://www.ecy.wa.gov/biblio/0410076.html>

### **Final Permit:**

#### **Level One Corrective Actions – Operational Source Control BMPs**

Permittees that exceed any applicable *benchmark* value(s) in Table 2 or Table 3, shall complete a Level 1 Corrective Action for each parameter exceeded in accordance with the following:

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3, and contains the correct BMPs from the applicable *Stormwater Management Manual*.
2. Make appropriate revisions to the SWPPP to include additional *Operational Source Control BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges. The Permittee shall sign and certify the revised SWPPP in accordance with S3.A.6.
3. Summarize the Level 1 Corrective Actions in the Annual Report (Condition S9.B)
4. **Level One Deadline:** The Permittee shall fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than the DMR due date for the quarter the *benchmark* was exceeded.

### **Draft Permit:**

#### **Level Two Corrective Actions – Structural Source Control BMPs**

~~The following facilities shall complete a Level 2 Corrective Action in accordance with Condition S8.B.1.4:~~

~~— Facilities not listed in Appendix 6 that exceed any benchmark value [in tables (2-6)] during any 4 separate quarterly monitoring periods after January 1, 2010; and~~

~~— Facilities listed in Appendix 6 (Level 2):~~

~~— 1. Review the SWPPP and ensure that it is in full compliance with Permit Condition S3, and contains the correct BMPs from the applicable Stormwater Management Manual.~~

~~— 2. Make appropriate revisions to the SWPPP to include additional *Structural Source Control BMPs* with the goal of achieving all benchmark values in future discharges.~~

~~— 3. Complete a Level 2 SWPPP Certification Form (Appendix 3) and attach to SWPPP.~~

—4. **Level 2 Deadline:** Fully implement the revised SWPPP according to Permit Condition S3 and the applicable Stormwater Management Manual immediately, but no later than the deadline specified in Table 6:

a. If installation of necessary *Structural Source Control BMPs* is not feasible within applicable *Corrective Action Deadline*; Ecology may approve additional time, by approving a *Modification of Permit Coverage*.

b. If installation of *Structural Source Control BMPs* is not feasible or not necessary to prevent discharges that may cause or contribute to a violation of a water quality standard, Ecology may waive the requirement for *Structural Source Control BMPs* by approving a *Modification of Permit Coverage*.

c. To request a time extension or waiver, a permittee shall submit an *Application for Coverage* form to Ecology in accordance with Condition S2.B, at least 90 days prior to the applicable *Corrective Action Deadline*, requesting “*Modification of Coverage*”. Within 60 days of receipt of a complete *Modification of Coverage* request, Ecology will approve or deny the request.

**Structural Source Control BMPs** means physical, structural, or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. Examples of Structural Source Control BMPs include, but are not limited to:

- Enclosing and/or covering the pollutant sources (e.g., within a building or other enclosure, a roof over storage and/or working areas, temporary tarps, etc).
- Physically separating the pollutant source to prevent run-on of uncontaminated stormwater (e.g., preventing clean stormwater from getting contaminated).
- Devices that direct contaminated stormwater to appropriate treatment BMPs (e.g., discharge to sanitary sewer if allowed by local sewer authority).

**Structural Source Control BMPs** for Western Washington that may apply are on Ecology’s web site at: <http://www.ecy.wa.gov/biblio/0510032.html>.

**Structural Source Control BMPs** for Eastern Washington that may apply are on Ecology’s web site at: <http://www.ecy.wa.gov/biblio/0410076.html>.

#### **Final Permit:**

##### **C. Level Two Corrective Actions – Structural Source Control BMPs**

Permittees that exceed an applicable *benchmark* value (for a single parameter) for any two quarters during a calendar year shall complete a Level 2 Corrective Action in accordance with the following<sup>4</sup>:

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3.
2. Make appropriate revisions to the SWPPP to include additional *Structural Source Control BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges. The Permittee shall sign and certify the revised SWPPP in accordance with S3.A.6.
3. Summarize the Level 2 Corrective Actions (planned or taken) in the Annual Report (Condition S9.B).

<sup>4</sup> Facilities that continue to exceed benchmarks after a Level 2 Corrective Action is triggered, but prior to the Level 2 Deadline, are not required to complete another Level 2 or 3 Corrective Action the following year for the same parameter. However, a Level 1 Corrective Action is required each time a benchmark is exceeded.

4. **Level 2 Deadline:** The Permittee shall fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than September 30<sup>th</sup> the following year.
  - a. If installation of necessary *Structural Source Control BMPs* is not feasible by September 30<sup>th</sup> the following year, *Ecology* may approve additional time, by approving a *Modification of Permit Coverage*.
  - b. If installation of *Structural Source Control BMPs* is not feasible or not necessary to prevent discharges that may cause or contribute to a violation of a water quality standard, *Ecology* may waive the requirement for additional *Structural Source Control BMPs* by approving a *Modification of Permit Coverage*.
  - c. To request a time extension or waiver, a Permittee shall submit a detailed explanation of why it is making the request (technical basis), and a *Modification of Coverage* form to *Ecology* in accordance with Condition S2.B, by June 1<sup>st</sup> prior to Level 2 Deadline. *Ecology* will approve or deny the request within 60 days of receipt of a complete *Modification of Coverage* request.

**Draft Permit:**

**Level Three Corrective Actions—Treatment BMPs**

~~The following facilities shall complete a Level 3 Corrective Action in accordance with Condition S8.C.1-4:~~

~~Facilities not listed in Appendix 6 that exceed any benchmark value [in tables (2-6)] during any 8 separate quarterly monitoring periods after January 1, 2010; and~~

~~Facilities listed in Appendix 6 (Level 2) that exceed any benchmark value [in tables (2-6)] during any 4 separate quarterly monitoring periods after January 1, 2010; and~~

~~Review the SWPPP and ensure that it is in full compliance with Permit Condition S3, and contains the correct BMPs from the applicable Stormwater Management Manual.~~

~~Make appropriate revisions to the SWPPP to include additional *Treatment BMPs* with the goal of achieving all benchmark values in future discharges.~~

~~Complete a Level 3 SWPPP Certification Form (Appendix 3) and attach to SWPPP. The portion of the SWPPP that addresses stormwater treatment structures or processes shall be designed and stamped by a professional Engineer, with certification that the SWPPP is consistent with Condition S3.A. Submit the revised SWPPP to Ecology by the Level 3 Deadline.~~

~~**Level 3 Deadline:** Fully implement the revised SWPPP according to Permit Condition S3 and the applicable Stormwater Management Manual immediately, but no later than the deadline specified in Table 6.~~

~~a. If installation of necessary *Treatment BMPs* is not feasible within applicable *Corrective Action Deadline*; Ecology may approve additional time by approving a *Modification of Permit Coverage*.~~

~~b. If installation of *Treatment BMPs* is not feasible or not necessary to prevent discharges that may cause or contribute to violation of a water quality standard, Ecology may waive the requirement for *Treatment BMPs* by approving a *Modification of Permit Coverage*.~~

~~c. To request a time extension or waiver, a permittee shall submit an Application for Coverage form to Ecology in accordance with Condition S2.B, at least 90 days prior to the applicable~~

Corrective Action Deadline, requesting “Modification of Coverage”. Within 60 days of receipt of a complete *Modification of Coverage* request, Ecology will approve or deny the request.

**Treatment BMPs** are defined in Appendix 2. Treatment BMPs include, but are not limited to detention ponds, oil/water separators, biofiltration, sand filtration, constructed wetlands, etc.

Treatment **BMPs** for Western Washington that may apply are on Ecology’s web site at:  
<http://www.ecy.wa.gov/biblio/0510033.html>

Treatment **BMPs** for Eastern Washington that may apply are on Ecology’s web site at:  
<http://www.ecy.wa.gov/biblio/0410076.html>

#### Final Permit:

##### **D. Level Three Corrective Actions – Treatment BMPs**

Permittees that exceed an applicable *benchmark* value (for a single parameter) for any three quarters during a calendar year shall complete a Level 3 Corrective Action in accordance with the following<sup>5</sup>:

1. Review the SWPPP and ensure that it fully complies with Permit Condition S3.
2. Make appropriate revisions to the SWPPP to include additional *Treatment BMPs* with the goal of achieving the applicable *benchmark* value(s) in future discharges.
  - a. The Permittee shall sign and certify the revised SWPPP in accordance with S3.A.6.
  - b. A licensed professional engineer, geologist, hydrogeologist, or Certified Professional in Storm Water Quality (CPSWQ) shall design and stamp the portion of the SWPPP that addresses *stormwater* treatment structures or processes.
    - i. Ecology may waive the requirement for a licensed or certified professional upon request of the Permittee and demonstration that the Permittee or treatment device vendor can properly design and install the treatment device.
    - ii. Ecology will not waive the Level 3 requirement for a licensed or certified professional more than one time during the permit cycle.
3. Summarize the Level 3 Corrective Actions (planned or taken) in the Annual Report (Condition S9.B).
4. **Level 3 Deadline:** The Permittee shall fully implement the revised SWPPP according to Permit Condition S3 and the applicable *Stormwater Management Manual* as soon as possible, but no later than September 30<sup>th</sup> the following year.
  - a. If installation of necessary *Treatment BMPs* is not feasible by the Level 3 Deadline; Ecology may approve additional time by approving a *Modification of Permit Coverage*.
  - b. If installation of *Treatment BMPs* is not feasible or not necessary to prevent discharges that may cause or contribute to violation of a water quality standard,

<sup>5</sup> Facilities that continue to exceed benchmarks after a Level 3 Corrective Action is triggered, but prior to the Level 3 Deadline, are not required to complete another Level 2 or 3 Corrective Action the following year for the same parameter. However, a Level 1 Corrective Action is required each time a benchmark is exceeded.

Ecology may waive the requirement for Treatment BMPs by approving a Modification of Permit Coverage.

- c. To request a time extension or waiver, a Permittee shall submit a detailed explanation of why it is making the request (technical basis), and a Modification of Coverage form to Ecology in accordance with Condition S2.B, by June 1<sup>st</sup> prior to the Level 3 Deadline. Ecology will approve or deny the request within 60 days of receipt of a complete Modification of Coverage request.

## **S9.A Discharge Monitoring Reports**

*Ecology received several comments regarding the electronic Discharge Monitoring Report system (eDMR), which has been renamed WebDMRs. Changes have been made, making WebDMR an optional way to submit DMRs to Ecology, rather than a requirement:*

- ~~1. Beginning with the DMR due August 14, 2010, all DMRs shall be submitted using Ecology's electronic DMR system (eDMR). DMRs due February 14, 2010 and May 15, 2010 shall be submitted either using eDMR or mail to the following address:~~
2. DMRs shall be submitted using Ecology's WebDMR system or by mail to the following address:

## **S9.B Annual Reports**

*Ecology added a subsection to S9.B, to require Annual Reports. This change was necessary to address public comments, and resulting changes made to S8. Corrective Actions.*

1. The Permittee shall submit a complete and accurate Annual Report to the Department of Ecology no later than May 15<sup>th</sup> of each year (except 2010) using a form provided by or otherwise approved by Ecology.
2. The annual report shall include corrective action documentation as required in S8.B-D. If corrective action is not yet completed at the time of submission of this annual report, the Permittee must describe the status of any outstanding corrective action(s).
3. Permittees shall include the following information with each annual report. The Permittee shall:
  - a. Identify the condition triggering the need for corrective action review.
  - b. Describe the problem(s) and identify the dates they were discovered.
  - c. Summarize any Level 1, 2 or 3 corrective actions completed during the previous calendar year and include the dates it completed the corrective actions.
  - d. Describe the status of any Level 2 or 3 corrective actions triggered during the previous calendar year, and identify the date it expects to complete corrective actions.
4. Permittees shall retain a copy of all annual reports onsite for Ecology review.

## **S9.C Noncompliance Notification**

*Ecology clarified and revised the requirement for Ecology notification of noncompliance, based on public comments and applicable regulations (40 CFR §122.41).*

In the event the Permittee is unable to comply with any of the terms and conditions of this permit ~~that could result in the discharge of pollutants in a significant amount~~ which may endanger human health or the environment, or any bypass or upset which causes an exceedance of any effluent limitation in the permit, the Permittee shall:

## **S9.F Public Access to SWPPP**

*In response to comments, Ecology clarified and revised the requirements for permittees to provide public access to Stormwater Pollution Prevention Plans (SWPPPs). Ecology's access to all plans and records required by the permit are consolidated in Condition S9.C.*

Draft S9.E:

### **E. Access to Plans and Records**

~~The Permittee(s) shall retain the SWPPP, and all other plans, documents and records required by this permit (hereby called "plans and records"), on site or within reasonable access to the site and make it immediately available upon request to Ecology or the local jurisdiction.~~

- ~~1. A copy of plans and records shall be provided to Ecology within 14 days of receipt of a written request for the SWPPP from Ecology.~~
- ~~2. Access to, or a copy of, plans and records shall be provided to the public when requested in writing. Upon receiving a written request from the public for plans and records, the Permittee shall either:
  - ~~a. Provide a copy of the plans and records to the requestor within 14 days of receipt of the written request; or~~
  - ~~b. Notify the requestor within 10 days of receipt of the written request of the location and times within normal business hours when the plans and records may be viewed, and provide access to the plans and records within 14 days of receipt of the written request.~~~~
- ~~3. The Permittee may provide a copy of the plans and records to Ecology or may arrange with the requestor for an alternative, mutually agreed upon location for viewing and/or copying of the plans and records. If access to the plans and records is provided at a location other than at an Ecology office, the Permittee will provide reasonable access to copying services for which a reasonable fee may be charged.~~

Final S9.F:

### **S9.F: Public Access to SWPPP**

The Permittee shall provide access to, or a copy of, the SWPPP to the public when requested in writing. Upon receiving a written request from the public for the SWPPP, the Permittee shall:

1. Provide a copy of the SWPPP to the requestor within 14 days of receipt of the written request; or
2. Notify the requestor within 10 days of receipt of the written request of the location and times within normal business hours when the requestor may view the SWPPP, and provide access to the SWPPP within 14 days of receipt of the written request; or

3. Provide a copy of the plans and records to Ecology, where the requestor may view the records, within 14 days of a request; or may arrange with the requestor for an alternative, mutually agreed upon location for viewing and/or copying of the plans and records. If access to the plans and records is provided at a location other than at an Ecology office, the Permittee will provide reasonable access to copying services for which it may charge a reasonable fee.

### **S10.C Compliance with Standards**

*Several commentors requested that the permit restate the “presumption of compliance” language from RCW 90.48.555. Ecology has revised S10 A and has also added the definition of “demonstrably equivalent” to Appendix 2 Definitions:*

#### **Revise S10.B:**

Ecology will presume compliance with water quality standards, unless discharge monitoring data or other site specific information demonstrates that a discharge causes or contributes to violation of water quality standards, when the Permittee is:

1. In full compliance with all permit conditions, including planning, sampling, monitoring, reporting, and recordkeeping conditions.
2. Fully implementing storm water best management practices contained in storm water technical manuals approved by the department, or practices that are demonstrably equivalent to practices contained in storm water technical manuals approved by Ecology, including the proper selection, implementation, and maintenance of all applicable and appropriate best management practices for on-site pollution control.

#### **Revise Appendix 2 Definitions:**

*Demonstrably equivalent means that the technical basis for the selection of all storm water best management practices are documented within a storm water pollution prevention plan. The storm water pollution prevention plan must document:*

- (A) The method and reasons for choosing the storm water best management practices selected;*
- (B) The pollutant removal performance expected from the practices selected;*
- (C) The technical basis supporting the performance claims for the practices selected, including any available existing data concerning field performance of the practices selected;*
- (D) An assessment of how the selected practices will comply with state water quality standards;*  
*and*
- (E) An assessment of how the selected practices will satisfy both applicable federal technology-based treatment requirements and state requirements to use all known, available, and reasonable methods of prevention, control, and treatment.*

### **S13.A Conditions for a Notice of Termination**

*Several commentors requested that Condition S13 be revised to allow permit termination if a facility uses dry well, swales or other BMPs to contain all stormwater on-site. Such BMPs are well represented in Ecology’s Stormwater management manuals; use of BMPs to eliminate discharges to surface water should be included in allowed conditions for a Notice of*

*Termination. Ecology agrees that such a change is consistent with applicable regulations, and S13 has been revised accordingly:*

**Revise S13.A.3:**

All *stormwater* discharges associated with *industrial activity* are prevented because the *stormwater* is redirected to a *sanitary sewer*, or discharged to ground (e.g., infiltration, etc.).

## APPENDIX 11

Ex. B-89

Department of Ecology Memorandum to  
Water Quality Program Management Team  
from Jim Pendowski, et al., Toxics Cleanup  
Program, re Industrial Stormwater General  
Permit and Sediment Impacts

August 2, 2006

## DEPARTMENT OF ECOLOGY

**TO:** Water Quality Program Management Team Meeting, August 2, 2006

**FROM:** Jim Pendowski, Program Manager, Toxics Cleanup Program  
Kathryn DeJesus, Aquatic Lands Cleanup Unit Manager, TCP  
Chance Asher, Aquatic Lands Cleanup Unit, TCP

**SUBJECT:** Industrial Stormwater General Permit and Sediment Impacts

**ISSUE:** The Director has instructed the Toxics Cleanup Program (TCP) to prevent recontamination and exacerbation of TCP sediment sites from NPDES permitted dischargers through improved cooperation with the Water Quality Program (WQP). The Director reiterated this during the July 18, 2006 Puget Sound Strategy Session. TCP has begun implementing the Director's instructions by working with your program to:

- Rewrite the sediments section of the Permit Writer's Manual to incorporate more rigorous sediment screening criteria in compliance with the Sediment Management Standards (SMS) including:
  - Continued sediment monitoring of major municipal and industrial wastewater discharges
  - Initial or continued sediment monitoring for minor municipal wastewater dischargers (>0.5 mgd) and TCP-selected minor industrial wastewater dischargers
- In cooperation with your program, TCP re-wrote the sediments section of the WQP Policy 1-11 Assessment of Water Quality for the Clean Water Act Sections 303(d) and 305(b) Integrated Report.
- Develop a procedure that ensures coordination for NPDES permitted facilities discharging into 303(d) listed sediment sites and MTCA cleanup sites (Category 4b) and Puget Sound Initiative sediment sites.

More relevant to today's discussion TCP would like to:

- Address how, and if, the ISWGP can be used as one of our tools to address recontamination and exacerbation of contaminated aquatic sediment sites.
- Add permit requirements for facilities discharging into 303(d) listed sediment areas to determine if the discharges are contributing to the contamination.
- Introduce ideas of how to protect MTCA cleanup sediment sites and Puget Sound Initiative sediment sites from NPDES permitted facilities.

**BACKGROUND:** Existing ISWGP addresses 303(d) listed water bodies and sediments by requiring the following:

- Quarterly monitoring for 303(d) listed parameters (water)
- TMDL compliance (water)
- Quarterly monitoring for TSS to demonstrate attainment of the 30 mg/L monthly average TSS, which WQP deems sufficient to meet the SMS (sediment)

The TCP does not think these permit requirements are sufficient to maintain compliance with the SMS. Sediment data have shown that municipal/industrial stormwater and wastewater discharges contribute to sediment quality impacts and SMS violations. For example:

- Of the facilities that have sampled sediments, the following have shown exceedances of the SMS and impacts to sediment quality:
  - Municipal and Industrial Stormwater 100%
  - Major Municipal Wastewater 100%
  - Minor Municipal Wastewater 50%
  - Major and Minor Industrial Wastewater ~80%
- Demonstrated recontamination from municipal and industrial stormwater in the Thea Foss Waterway aquatic Superfund site.
- Contamination from sources including municipal and industrial stormwater, and municipal CSO's, and industrial wastewater in the Lower Duwamish aquatic Superfund site.
- The 30 mg/L TSS requirement is too simplistic and not adequate to comply with the SMS due to:
  - complex and variable receiving environment conditions
  - “sink-like” tendency of sediments to accumulate contaminants (single discharger and cumulative effects)

**SOLUTION:** TCP proposes that we work together to find a solution to address ISWGP facilities discharging into 303(d) listed sediment areas and cleanup sites.

- Determine which facilities contribute to sediment contamination in 303(d)-listed waters
  - Implement source controls
- **Option 1: No Action** No additional monitoring for discharges into 303(d) listed sediment sites. Assume that compliance with the 30 mg/L TSS parameter is sufficient
  - **Option 2: Tiered Monitoring Approach**
    - Year 1: Screened facilities will monitor effluent for SMS metals, PCB's, SVOC's, and PDBEs. Cost: ~\$560.00 per sample; ~\$500-1000 for equipment. (Low levels of these contaminants have been found in all Lower Duwamish River sediment traps analyzed).
    - Year 2: Evaluate monitoring results for compliance with the Sediment Quality Standard (SQS) criteria. Facilities that exceed the criteria will implement new source control requirements, conduct another round of sampling for the SQS exceeded chemicals, and install a flow meter to determine pollutant loading.
    - Year 3: Evaluate monitoring results for compliance with the SQS criteria to determine effectiveness of source control efforts. Facilities that have not shown a decrease in pollutant concentration must implement improved source control requirements and conduct another round of sampling for the SQS exceeded chemicals.
  - **Option 3: Option 2 Tiered Monitoring Approach + Partial Ecology TCP Funding**
    - Year 1:
      - Screened facilities will monitor effluent for SMS metals, PCB's, semi-volatile organic compounds, and PDBEs.
      - Potential for Ecology to provide a cost sharing opportunity for facilities discharging into the Lower Duwamish River that meet certain requirements and apply for inclusion into a stormwater study. This option will need to be further discussed.
    - Year 2 & 3: Same as Option 2

APPENDIX 12

Pre-Filed Testimony of Susan C. Paulsen,  
Ph.D., P.E.

December 20, 2010

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POLLUTION CONTROL HEARINGS BOARD  
STATE OF WASHINGTON

COPPER DEVELOPMENT ASSOCIATION,  
INC., and THE INTERNATIONAL COPPER  
ASSOCIATION, LTD, OLYMPIANS FOR  
PUBLIC ACCOUNTABILITY, ARTHUR  
WEST, PUGET SOUNDKEEPER ALLIANCE,  
COLUMBIA RIVERKEEPER, THE BOEING  
COMPANY, and GUNDERSON RAIL  
SERVICES,

Appellants,

v.

STATE OF WASHINGTON, DEPARTMENT  
OF ECOLOGY, and the PORT OF OLYMPIA,

Respondents,

WEYERHAEUSER NR COMPANY,

Intervenor.

PCHB NO. 09-135  
PCHB NO. 09-136  
PCHB NO. 09-137  
PCHB NO. 09-138  
PCHB NO. 09-139  
PCHB NO. 09-140  
PCHB NO. 09-141

**PRE-FILED TESTIMONY OF  
SUSAN C. PAULSEN, PH.D. P.E.  
(CA)**

Susan C. Paulsen, Ph.D., P.E., testifies and states as follows.

1. I am currently employed as a Senior Scientist with Flow Science Incorporated. I am a registered Professional Engineer in the State of California. I hold a Ph.D. in Environmental Engineering Science from the California Institute of Technology, a M.S. in Civil Engineering from the California Institute of Technology and a B.S. in Civil Engineering from Stanford University. I have worked on issues related to stormwater and the fate and transport of a range of discharges, including stormwater, to the environment, throughout my professional career. I have analyzed datasets that describe flow rates and constituent concentrations in stormwater

1 runoff from industrial discharges, from construction site discharges, from various types of land  
2 uses, including open space, and in receiving waters. I have evaluated datasets describing the  
3 ability of best management practices (BMPs) and treatment technologies to improve the water  
4 quality of stormwater runoff, and I have designed data collection programs and monitoring  
5 strategies for a wide range of discharge types, including stormwater. I have also used  
6 stormwater and receiving water datasets to evaluate whether or not numeric effluent limits can be  
7 applied to stormwater discharges using existing methodologies and policies. My education and  
8 experiences are more fully set forth in my curriculum vitae attached as Exhibit 1.

#### 9 INTRODUCTION

10 1. Stormwater runoff exhibits highly variable flow rates and flow volumes, and constituent  
11 concentrations can vary by an order of magnitude or more within storms and between storms.  
12 Because of this variability, storm flows are by nature very different than many other types of  
13 flows that are regulated by National Pollutant Elimination Discharge System (NPDES) permits.  
14 Discharges from point sources such publicly owned treatment works (POTWs) and industrial  
15 wastewater treatment facilities exhibit far more uniform flow rates and constituent  
16 concentrations than storm water discharges, and POTW and industrial wastewater discharges  
17 have traditionally been regulated in NPDES permits using numeric effluent limitations. Also,  
18 the treatment approaches used to treat POTW and industrial wastewater flows are different than  
19 those available to treat storm flows. The highly variable nature of storm flows also means that  
20 the methods used to derive effluent limitations for POTWs and industrial wastewater treatment  
21 facilities are not applicable to or appropriate for storm flows.

22 2. Although it would in theory be possible to develop scientifically appropriate numeric  
23 effluent limitations for storm flows, it would require development of new methods for  
24 calculating effluent limitations and larger, more comprehensive datasets describing flow rates  
25 and constituent concentrations both in stormwater runoff and in receiving waters. Additionally,  
26 more comprehensive datasets would be needed to describe the capabilities of the best

1 management practices (BMPs) and structural and treatment technologies that are used to treat  
2 storm flows. As detailed in this testimony, I conclude that currently available data and  
3 information are insufficient to allow calculation of numeric effluent limitations for use in the  
4 State of Washington's Industrial Stormwater General Permit (ISGP). Because it is infeasible to  
5 calculate numeric effluent limitations at this time, I conclude that a BMP-based approach to  
6 regulating storm flows is needed in the current ISGP. Should Ecology desire to regulate storm  
7 flows in the future using numeric effluent limitations, it should embark upon a comprehensively  
8 and carefully planned program of data collection and analysis to support the calculation of  
9 scientifically appropriate effluent limitations.

10 3. The ISGP establishes unreasonable and unsupported benchmarks for total copper and  
11 total zinc that are applicable to stormwater discharges from industrial facilities in western and  
12 eastern Washington. These benchmark values were derived by Herrera Environmental  
13 Consultants (2009) using a Monte Carlo analysis approach that did not consider the variability of  
14 constituent concentrations in storm flows from industrial facilities. In addition, the Herrera  
15 Environmental Consultants (2009) analysis used translator values to describe the relationship  
16 between total and dissolved metals; these translator values were based upon a suspect dataset,  
17 appear to be artificially high and were not specific to storm flow conditions or to industrial  
18 facilities. Herrera Environmental Consultants (2009) did not use a "water effects ratio" (WER)  
19 to determine if the copper and zinc benchmarks accurately reflect the toxicity of these metals for  
20 the receiving water bodies and the storm flow conditions to which they were being applied. The  
21 conservative assumptions made for the translators and the failure to use a WER result in  
22 benchmark values for total copper that are unnecessarily low and therefore unreasonable.

23 4. In my opinion, there is little difference between the ISGP benchmarks and numeric  
24 effluent limitations, in that Ecology expects that the implementation of corrective actions (BMPs,  
25 structural controls, and treatment controls) at industrial facilities will result in effluent  
26 concentrations of total copper and total zinc that are always below benchmark values (i.e., that

1 will result in values below benchmarks 100% of the time). As detailed in this opinion, this  
2 expectation is unrealistic for a number of reasons. First, while BMPs can and do achieve  
3 significant improvements in storm water quality, constituent concentrations are highly variable  
4 even in stormwater treated by BMPs and other control measures. Available evidence indicates  
5 that stormwater effluent from BMPs will be unable to achieve the benchmark values in all  
6 samples and under all conditions, in part because the benchmark values were derived without  
7 characterizing or considering the variability of constituent concentrations in stormwater runoff  
8 from industrial facilities, and without characterizing or considering the capabilities of BMPs.  
9 Second, it is difficult and costly to design and construct BMPs and control measures to treat the  
10 largest of storm flows, which occur infrequently. In reality, some portion of flows during the  
11 largest storms typically receives a lesser degree of treatment than the flows from smaller storms.  
12 Third, the ISGP requires the collection of only one sample of storm flow effluent per quarter,  
13 which is insufficient to characterize the variability of copper and zinc concentrations in those  
14 storm flows. However, because benchmarks were established without considering effluent  
15 variability, collection of a larger number of samples during each quarter is not a suitable remedy.  
16 A preferable option would be to employ an iterative BMP approach to regulate storm flows from  
17 industrial facilities while gathering additional data to describe effluent flow rates and constituent  
18 concentrations, receiving water flow rates and constituent concentrations, and the capabilities of  
19 BMPs and other treatment controls, to allow calculation of more appropriate benchmarks or  
20 numeric effluent limitations.

21 5. The ISGP also contains an effluent limitation for fecal coliform that is applied to  
22 industrial facility discharges to waters that are 303(d)-listed for exceedances of fecal coliform  
23 criteria. The effluent limitation is simply the single sample maximum value from the  
24 Washington state criteria for fecal coliform, which is applied as a never-to-be-exceeded numeric  
25 limit. Because of the variability inherent in storm flows, the ISGP effluent limitation in effect  
26 requires compliance with limits that are far more stringent than the water quality criteria from

1 | which the effluent limitation is derived. Additionally, there is little reason to believe that human  
2 | sewage or fecal matter would be present in stormwater runoff from industrial facilities, which  
3 | typically employ standard measures to avoid any exposure of human sewage during storm  
4 | events. Fecal coliform bacteria present in stormwater runoff from industrial facilities likely  
5 | originate from wildlife, birds, and regrowth, which will pose a lesser human health risk than  
6 | bacteria of human origin.

7 | 6. The ISGP also contains effluent limitations for total suspended solids (TSS) that apply to  
8 | stormwater discharges to waters that are 303(d)-listed for exceedances of Washington's  
9 | Sediment Management Standards (SMS). Determining whether stormwater runoff from a  
10 | particular facility (or from industrial facilities in general) contributes to an exceedance of the  
11 | SMS is a site-specific evaluation, which requires information on discharge particle  
12 | characteristics, discharge contaminant concentrations, flow and loading rates, receiving water  
13 | characteristics, mixing and dilution, and the geomorphology of sediments, among other factors.  
14 | In addition, neither metals nor organic pollutants (the constituents regulated by the SMS) are  
15 | associated with TSS in any consistent way, such that TSS is not a reliable indicator of the  
16 | concentrations or loads of pollutants regulated by the SMS in storm flows. Thus, there is no  
17 | basis either for concluding that storm flows from all industrial facilities have the reasonable  
18 | potential to contribute to exceedances of the SMS or for calculating an effluent limitation for  
19 | TSS to prevent such exceedances. There is some indication that the numeric effluent limitation  
20 | for TSS was derived from the standards that govern long-term concentrations of TSS discharges  
21 | from secondary sewage treatment processes. However, secondary sewage treatment processes  
22 | are not appropriate for or applicable to stormwater discharges. For all these reasons, I conclude  
23 | that the effluent limitation for TSS is without reasonable basis.

#### 24 | NATURE OF STORMWATER

25 | 7. Storm flow water quality is a complex function of watershed size, slope, soils, vegetation  
26 | types, precipitation (storm size and intensity), temperature, snow and snow-melt, antecedent

1 conditions (a function of the time since the last rainfall), land use, and climate. Storm flows  
2 exhibit highly variable flow rates and flow volumes, and constituent concentrations in storm  
3 flows can vary by an order of magnitude or more on timescales of an hour or less (Buffleben et  
4 al. 2002; Flow Science Incorporated 2005b; Golding 2006; Horner et al. 1979; Stein et al. 2007;  
5 Yoon and Stein 2008). Constituent concentrations can vary widely between storm events, at any  
6 given time between relatively closely located sites, and even at different times within individual  
7 storm events (Buffleben et al. 2002; Carrier et al. 2006; Flow Science Incorporated 2008;  
8 LADPW 2005; Lee et al. 2004; Stein et al. 2007; Stein and Yoon 2007; Yoon and Stein 2008).

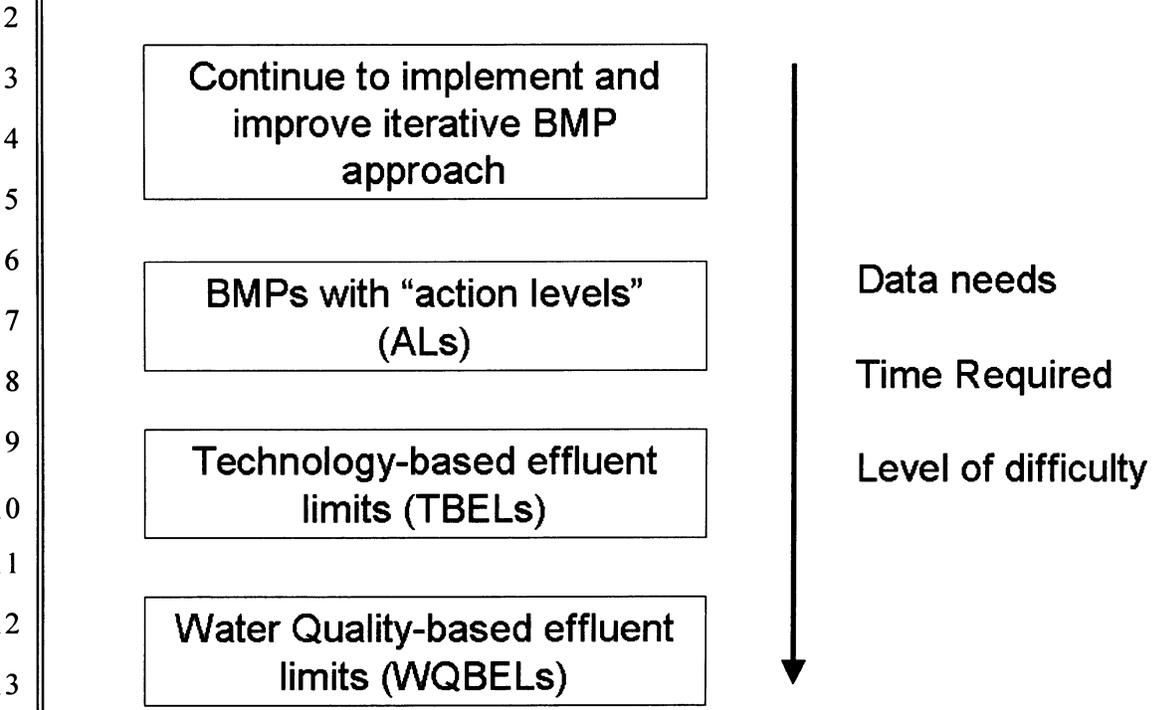
#### 9 OPTIONS FOR STORMWATER REGULATION

10 8. A range of options are available for regulating storm water flows. As described below,  
11 the quantity and quality of data required for each option, and the methodology that is used for  
12 each option, vary significantly. Available data appear to be sufficient to support a BMP-based  
13 regulatory approach, but available data do not appear to be sufficient to support calculation and  
14 implementation of numeric effluent limits, either as technology based effluent limitations  
15 (TBELs) or water quality based effluent limitations (WQBELs). Should Ecology choose to  
16 implement a policy that would regulate stormwater flows using either TBELs or WQBELs, it is  
17 my opinion that a substantial and well-designed program of data collection would be required to  
18 characterize stormwater runoff from industrial facilities, receiving water characteristics, and  
19 BMP and treatment capabilities.

20 9. There are four major options for regulating stormwater, as follows: 1) iterative BMP  
21 approach; 2) BMPs with "action levels"; 3) technology-based effluent limits (TBELs); 4) water  
22 quality-based effluent limits (WQBELs) (Flow Science Incorporated 2006). As shown in Figure  
23 1, the data needs, time required, and level of difficulty increase for development of each of the  
24 different kinds of water quality criteria. Each of these options is discussed in greater detail  
25 below.

26 //

1 **FIGURE 1 – OPTIONS FOR STORMWATER REGULATION**



10. As shown in Figure 1, the first option available for regulating storm flows is to manage storm flows using an iterative BMP process. With this approach, the discharger is required to implement BMPs and monitor the effect of the BMPs on storm water quality. If the implemented BMPs do not achieve the expected performance for the BMP type, then BMPs may be upgraded or supplemented. The iterative BMP approach has been used widely in the past, including in the prior version of the ISGP. Improvements can be made in this process, including utilizing BMP performance data and knowledge about the impairments or constituents of concern in a receiving water to select better and more effective BMPs. With this option, compliance and enforcement would be based upon selection of appropriate BMPs, then continued implementation and

1 maintenance of the selected option. Examples of additional data and information that could be  
2 collected to improve the iterative BMP approach include:

- 3 • Development of a list of BMP options
- 4 • Data collection and research into BMP unit design and efficiency
- 5 • Data collection to characterize the cost-effectiveness and feasibility of various BMP  
6 options
- 7 • BMP design criteria (a “design storm” or other hydrologic design criteria)
- 8 • Information on gross receiving water quality (e.g., identification of constituents of  
9 concern and flow characteristics); and
- 10 • Detailed analysis of maintenance and enforcement options.

11 11. The second option for regulating storm flows is to use BMPs with “Action Levels”  
12 (ALs). Generally, the purpose of ALs is to identify those discharges or sites with a propensity,  
13 based on monitoring data, to contribute disproportionately to high concentrations of constituents  
14 in receiving waters, and to trigger an iterative management approach. ALs are not numeric  
15 limits. ALs should be established according to a clear methodology that is consistent with  
16 subsequent monitoring and implementation requirements. Implementation of ALs requires  
17 clearly specifying how measurements are to be compared to ALs, and the actions that would be  
18 triggered if ALs were exceeded; generally, exceedances of ALs are allowed at a specified  
19 frequency or for specified conditions (e.g., large or high intensity storm events). The types of  
20 information that would be required to develop and implement ALs include:

- 21 • Development of a list of BMP options
- 22 • Data collection and research into BMP unit design and efficiency
- 23 • Data collection to characterize the cost-effectiveness and feasibility of various BMP  
24 options
- 25 • BMP design criteria (a “design storm” or other hydrologic design criteria)
- 26

- 1 • Information on gross receiving water quality (e.g., identification of constituents of
- 2 concern and flow characteristics)
- 3 • Process and procedures for establishing ALs
- 4 • Actions required when ALs are exceeded at a defined frequency; and
- 5 • Data on effluent constituent concentrations for those constituents that will have ALs.

6 The term “benchmark” is often used interchangeably with the term “Action Level.” However, I  
7 use the term Action Level in this pre-filed testimony to avoid confusion with the term  
8 “benchmark” as employed in the ISGP. As described in greater detail below, the term  
9 “benchmark” as used in the ISGP has been given a different meaning by Ecology by virtue of the  
10 actions that are required when a “benchmark” in the ISGP is exceeded. As described in  
11 EnviroVision and Herrera (2006), USEPA introduced the concept of “benchmarks” with the  
12 1995 Multi-Sector General Permit. “Benchmarks” were at the time defined by USEPA such that  
13 a pollutant concentration above the benchmark would indicate a “level of concern.” Benchmarks  
14 as such were not effluent limitations but “merely levels which EPA has used to determine if a  
15 stormwater discharge from any given facility merits further monitoring to insure that the facility  
16 has been successful in implementing a stormwater pollution prevention plan” (EnviroVision and  
17 Herrera 2006 at p. 4).

18 12. Technology-Based Effluent Limits (TBELs) are numeric effluent limits based upon  
19 available technology and the treatment efficiency of those technologies; TBELs are generally  
20 applied to structural and treatment controls. For storm flows, TBELs would need to be developed  
21 in consideration of the volume or flow rate to be treated, the efficiency of the treatment process,  
22 and the quality of storm flow influent to the treatment process. As shown in Figure 2 (below), the  
23 final effluent stream after application of BMPs and/or treatment will be a mixture of treated  
24 effluent and untreated effluent (i.e., effluent beyond the hydraulic capacity of the treatment  
25 system). Data requirements for TBELs for storm water may include:

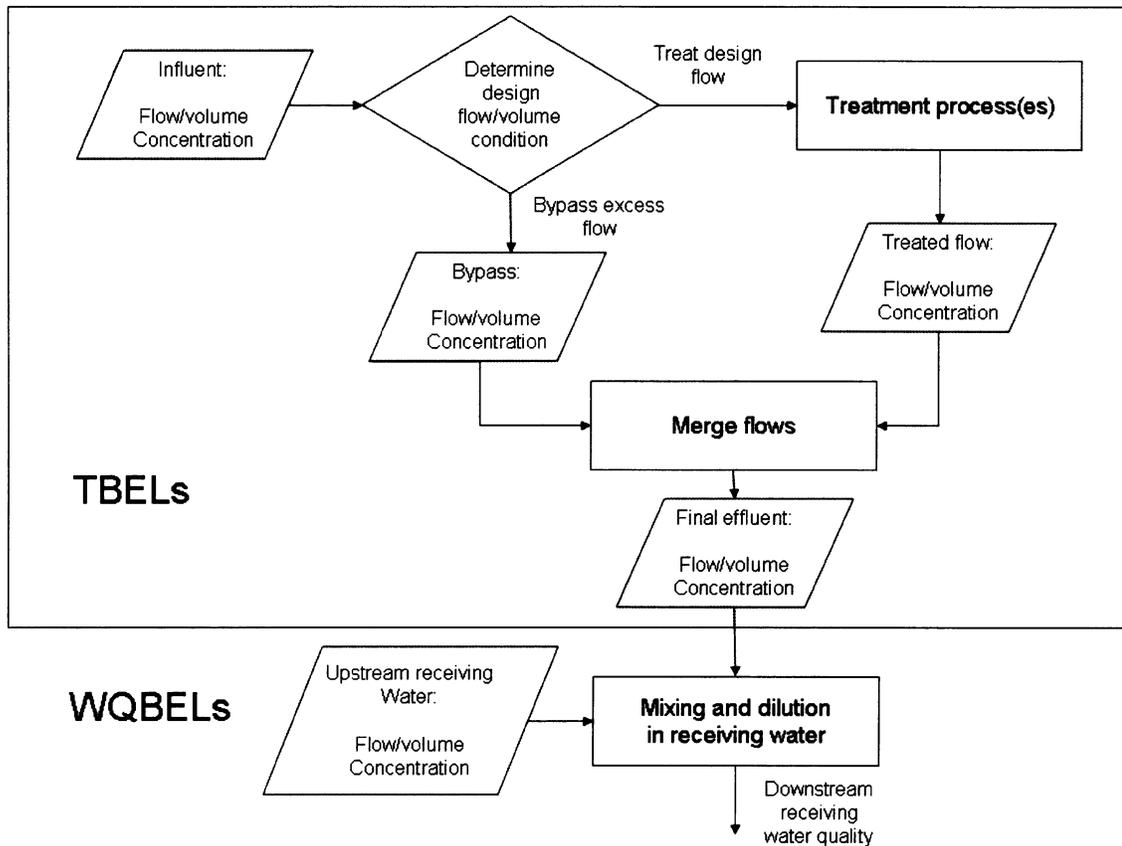
- 26 • Detailed characterization of influent (raw) water quality;

- 1 • BMP and treatment system performance data, which would be required for a range of
- 2 influent flows and concentrations and under field, not laboratory, conditions;
- 3 • Process for setting TBELs that would recognize the variability of storm water flow
- 4 rates/volumes and constituent concentrations, including the variability observed in
- 5 BMP treated effluent; and
- 6 • Monitoring and compliance options (e.g., grab v. composite samples, sampling
- 7 frequency)

8 An important consideration with TBELs is that an initial design dataset used to establish limits  
9 may not capture the full range of conditions that may occur during the life of a project. Any  
10 TBELs, or the compliance and enforcement program associated with TBELs, would need to  
11 define both an allowable frequency of exceedance and a process for handling water quality  
12 excursions due to extreme events (e.g., extreme flood events).

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1 **FIGURE 2 – CONSIDERATIONS IN DEVELOPMENT OF TBELS AND QBELS**



17 13. The fourth option for regulating stormflows involves the use of Water Quality-Based

18 Effluent Limits (QBELs). As shown in Figure 2 above, QBELs must take into account both

19 effluent and receiving water quality in the limit development process. To date, the methods

20 available for developing QBELs are based on relatively simple, idealized data distributions –

21 e.g., normal or lognormal data distributions. However, as discussed below, storm flow data often

22 do not follow these idealized distributions, but rather tend to follow “heavy-tailed” or “extreme

23 value” distributions. In addition, the steady-state methods available for calculating QBELs do

24 not consider the variable nature of conditions in the receiving water, such as variability in the

25 hardness of the receiving water, which are essential factors to consider in developing appropriate

26 QBELs for stormwater flows. For these reasons, and as discussed in greater detail below with

1 | respect to the WQBELs contained in the ISGP, existing WQBEL methodologies are  
2 | inappropriate for storm flows, and new methodologies must be developed. As shown in Figure 2  
3 | above, variability in stormwater effluent quality and flows and variability in receiving water  
4 | quality and flows all contribute to final receiving water quality, and these variables are a function  
5 | of both time and space. Either dynamic modeling or statistical approaches could be considered to  
6 | incorporate these considerations into limit calculation procedures, as described briefly in EPA's  
7 | Technical Support Document (USEPA 1991). Data that would be required to properly calculate  
8 | WQBELs for stormwater discharges include:

- 9 |       • Detailed (hourly or sub-hourly) effluent quality and flow data
- 10 |       • Detailed receiving water quality and flow data
- 11 |       • Information on the means of compliance to be employed (e.g., BMPs, structural or  
12 |       treatment controls)
- 13 |       • Methodology for determining reasonable potential ("RPA") and for calculating  
14 |       effluent limits
- 15 |       • Development of monitoring strategies and enforcement options
- 16 |       • Means to relate wasteload allocations and load allocations from TMDLs to  
17 |       WQBELs<sup>1</sup>.

18 |       14. In summary, the stormwater regulatory approach that is selected for use in a given  
19 | stormwater permit, including in a general permit, must consider the type, quantity, and quality of  
20 | available data. As discussed in greater detail below, available data appear to be sufficient to

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21 |  
22 |       <sup>1</sup> Note that it is usually envisioned that TMDLs would be implemented in permits as  
23 | WQBELs. However, all the same considerations would apply to WQBELs calculated from  
24 | TMDLs as to WQBELs calculated in water bodies or for constituents where TMDLs have not  
25 | been established. In other words, and as described in greater detail below, concentration-based  
26 | TMDL allocations should not be inserted directly into permits as numeric limits; rather, the same  
calculation methodology used to establish WQBELs should apply to development of WQBELs  
based on TMDLs.

1 support a BMP-based regulatory approach in the ISGP, but insufficient at this time to support  
2 development of scientifically appropriate effluent limitations, including both TBELs and  
3 WQBELs.

#### 4 STATISTICAL CHARACTERISTICS OF STORM FLOWS

5 15. Normal and log-normal data distributions are frequently used to describe constituent  
6 concentrations in steady-state flows, such as flows from publicly owned treatment works  
7 (POTWs) or flows of industrial process water, and normal and log-normal statistical distributions  
8 are often used in deriving effluent limitations, as will be discussed further below. However,  
9 constituent concentrations in storm flows typically cannot be characterized using normal or log-  
10 normal statistical distributions (National Research Council 2008). In describing constituent  
11 concentrations in stormwater runoff from industrial facilities in the State of Washington,  
12 EnviroVision and Herrera Environmental Consultants (2006) indicate that data are “distinctly  
13 right-skewed,” and describe the data as follows:

14 “The monitoring data exhibits a right-skewed distribution pattern  
15 due to the presence of numerous high-end values. As is typical for  
16 stormwater data, there is a high degree of variability relative to  
17 what is observed in the data from other types of pollutant  
18 monitoring (e.g., wastewater influent). Given the high variability  
19 of the data, a large number of observations will generally be  
20 required in any hypothesis testing in order to detect significant  
21 patterns.”

22 EnviroVision and Herrera Environmental Consultants (2006), at p. 1 of the  
23 Executive Summary.

24 Such data distributions may also be characterized as “heavy-tailed” or as  
25 “extreme value distributions.” (See also Flow Science Incorporated (2005b) and  
26 (2008)).

16. In my opinion, it is important to accurately characterize extreme values within a dataset if  
those data are to be compared to a numeric effluent limitation, and a normal or log-normal  
assumption should not be used if it does not accurately describe the upper “tail” of the dataset

1 (i.e., the highest values in the dataset). This opinion is shared by the National Research Council  
2 (2008), which provided an example of a stormwater runoff dataset that, like many stormwater  
3 datasets, does not conform to a log-normal distribution. NRC's statistical analysis describes  
4 concentrations of total dissolved solids (TDS) in runoff from a residential land use. The NRC  
5 found that data between the 5<sup>th</sup> and 95<sup>th</sup> percentile values (i.e., the central values that comprise  
6 90% of the dataset) conformed to a log-normal distribution, but data at the two tails of the dataset  
7 (i.e., data below the 5<sup>th</sup> percentile and data above the 95<sup>th</sup> percentile) did not. The NRC noted  
8 that "if the most extreme values are of importance, such as when ... determining the frequency of  
9 observations exceeding a numerical standard, a better description of the extreme values may be  
10 important."

11 17. Stormwater runoff samples from an industrial facility in southern California can also be  
12 used to demonstrate what is meant by a "heavy-tailed" or "extreme value" distribution. A daily  
13 maximum limit of 14 ug/L was established for total copper in stormwater runoff from an outfall  
14 located at the southern California facility. This benchmark value was calculated assuming a log-  
15 normal data distribution and using the steady-state WQBEL calculation methods described in  
16 greater detail below. The geometric mean copper concentration (i.e., the mean concentration  
17 calculated assuming a log-normally distributed dataset) for the dataset was 3.2 ug/L, over four  
18 times lower than the effluent limitation. One (1) value in the dataset (4% of the available data)  
19 exceeded the numeric effluent limit of 14 ug/L. As detailed below, requiring the highest  
20 concentration sample in a truly log-normal dataset with these characteristics to fall below the  
21 effluent limitation of 14 ug/L would be equivalent to requiring the geometric mean concentration  
22 to be 1.9 ug/L, based on an assumed log-normal distribution, as shown below. Because the  
23 dataset does not follow a log-normal distribution, the effluent limitation of 14 ug/L is in effect  
24 requiring compliance with a geometric mean value well below 1.9 ug/L.

25 18. The analysis in the preceding paragraph is based upon the dataset shown in Table 1.  
26 Between 2004 and 2008, 25 samples were collected from an outfall at a southern California

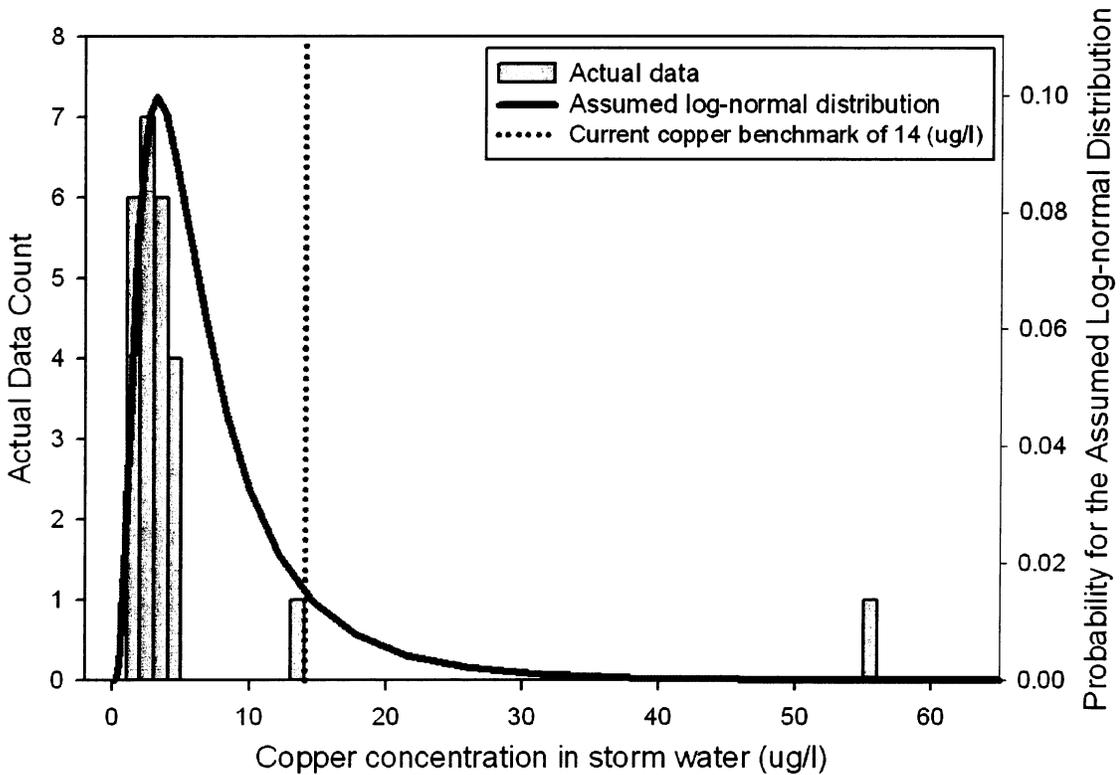
1 industrial facility and analyzed for total copper, among other constituents. Flow Science derived  
 2 summary statistics for this dataset, assuming that it followed a log-normal distribution. (Note  
 3 that the dataset failed a Kolmogorov-Smirnov log-normality test (K-S test), which is used to test  
 4 whether the data in the dataset were drawn from a population with a log-normal distribution.  
 5 Thus, the data do not fit a log-normal distribution, and the analysis presented in Table 1 is  
 6 designed to show the implications of falsely assuming that such data follow a log-normal  
 7 distribution.) As shown in Table 1, the geometric mean concentration of total copper for the  
 8 dataset was 3.2 ug/L, and the standard deviation of the log-normally transformed data was  
 9 0.3801. The median copper concentration in the dataset was 2.9 ug/L. A log-normal distribution  
 10 fit to this dataset would have a 99<sup>th</sup>-percentile value of 24.5 ug/L, and, if the data fit a log-normal  
 11 distribution, roughly one of every 100 data points (1%) would fall at or above this value.  
 12 However, one (1) of the 25 samples in the dataset (4% of the dataset) fell above the theoretical  
 13 99<sup>th</sup>-percentile value of the log-normal distribution; the highest value in the dataset was 55 ug/L,  
 14 which has a vanishingly small probability of occurring (0.06%) in a log-normally distributed  
 15 dataset. A histogram showing both the frequency of occurrence of individual values in the  
 16 dataset and the lognormal distribution fit to the dataset is shown in Figure 3. Figure 3 clearly  
 17 shows that the highest value in the dataset is at the extreme upper edge of the hypothetical log-  
 18 normal distribution.

19 **Table 1. Summary statistics for a dataset describing total copper concentrations in**  
 20 **stormwater runoff from an industrial facility in southern California.**

Summary of dataset	Sample size	25
	Median Value (ug/L)	2.9
	Geometric mean (ug/L)	3.2
	Sample maximum (ug/L)	55
	Number of samples > 99 <sup>th</sup> percentile value of assumed	1

	log-normal distribution (24.5 ug/L)	
Statistics describing assumed log-normal data distribution	Geometric mean (ug/L)	3.2
	Standard deviation of log-transformed data	0.3801
	99 <sup>th</sup> percentile value (ug/L)	24.5
	p-Level (% probability)	0.0006 (0.06%)

**FIGURE 3 – DISTRIBUTION OF STORMWATER DATA**



**WATER QUALITY-BASED EFFLUENT LIMITATIONS  
AND BENCHMARKS IN THE ISGP**

1 19. USEPA (1991) has developed procedures for calculating water quality-based numeric  
2 effluent limits (WQBELs), and the State of Washington (2008b) has adopted the same  
3 procedures in the Water Quality Program Permit Writer's Manual. The first step in the process is  
4 to conduct a "reasonable potential determination," which is an assessment that uses available  
5 data (if sufficient) for the receiving water and for the effluent to determine if a discharge is likely  
6 to "cause or contribute to" an exceedance of water quality objectives in the receiving water, and  
7 thus whether effluent limitations are required. Because water quality criteria are defined in terms  
8 of frequency, magnitude, and duration, determining reasonable potential and establishing  
9 effluent limitations requires information on the frequency, magnitude, and duration with which a  
10 particular set of conditions will occur. Reasonable potential determinations are typically made  
11 using information on observed effluent concentrations and flow rates, variability in the dataset  
12 describing effluent concentrations and flows, background receiving water concentrations, and in  
13 consideration of dilution. The reasonable potential procedures of USEPA (USEPA 1991)  
14 specify performing the evaluation for "specified low-flow conditions" (e.g., the 7Q10 flow,  
15 which is the lowest seven-day flow rate with a 10-year recurrence interval), which typically do  
16 not occur during storm flow conditions, and which therefore are not appropriate for storm runoff  
17 conditions and their highly time-variable flows. In addition, existing datasets for stormwater  
18 discharges from industrial facilities typically do not contain the type and quantity of data either  
19 for the effluent or for the receiving water that would be needed to evaluate "reasonable  
20 potential."

21 20. If reasonable potential is found to exist, water quality-based numeric effluent limitations  
22 (WQBELs) may be calculated, if and where possible. As outlined in USEPA (1991), permit  
23 limits can be calculated in one of two ways: (1) using steady-state representations of worst-case  
24 conditions, and (2) using dynamic modeling approaches. Both steady-state and dynamic  
25 modeling approaches can be used to determine appropriate permit limits for point source  
26 discharges, and these approaches have typically been used to calculate effluent limits for

1 discharges from POTWs or for industrial process water flows. However, as discussed below,  
2 only the dynamic modeling approaches are appropriate for addressing storm flows, because of  
3 the dynamic nature of effluent constituent concentrations and flow rates, and of receiving water  
4 constituent concentrations and flow rates.

5 21. As described by USEPA (1991), Exhibit 3, 78-80, steady-state models used to develop  
6 water quality-based effluent limitations require information on effluent flow rate, effluent  
7 concentration and the variability of the constituents to be evaluated, background receiving water  
8 constituent concentrations, and background receiving water flow rates. Steady-state models use  
9 available information to determine an effluent limitation for a single set of circumstances. For  
10 example, water quality may be evaluated for a specified low-flow condition in the receiving  
11 water (e.g., the 1Q10 flow, or the lowest one-day flow rate with a 10-year recurrence interval, for  
12 acute aquatic life criteria). A single, constant effluent concentration is selected based upon a  
13 statistical analysis of effluent data. Effluent flow rates are also assumed constant over the  
14 relevant timescales, so that the duration and frequency with which a water quality objective will  
15 be exceeded will be reflected by selecting the appropriate receiving water design flow. Thus,  
16 steady-state modeling is appropriate for constant or near constant discharges at facilities such as  
17 POTWs or industrial wastewater treatment plants, where critical conditions generally occur  
18 during low-flow time periods. As a result, steady-state modeling is not an appropriate method  
19 for developing effluent limitations for storm water flows, since such flows are highly variable, as  
20 are constituent concentrations in both storm flow discharge and receiving waters.

21 22. The Washington State Permit Writer's Manual (2008b) refers to and relies heavily on  
22 USEPA (1991). However, the State Permit Writer's Manual presents only the steady-state  
23 method of calculating effluent limitations; the manual states that low flow (e.g., 7Q10) receiving  
24 water conditions should generally be used. However, low flow conditions do not typically occur  
25 during storm events. For example, Table 1 (below) shows that for Green River near Auburn,  
26 Washington, rainfall events of 0.1 inches or more always occurred when flow rates were higher

1 | than the 1Q10 and 7Q10 flows. Even in much smaller watersheds, rainfall events of 0.1 inches  
2 | or more rarely occurred when flow rates in the receiving water were at or near critical levels.  
3 | For example, flows in Bear Creek (King County, WA) were greater than double the 1Q10 flow  
4 | 96.3% of the time when rain events of 0.1 inches or larger occurred; flows were greater than  
5 | double the 1Q10 flow 98.3% of the time when rain events of 0.3 inches or larger occurred. Thus,  
6 | I conclude that critical conditions in the receiving water (e.g., 1Q10 and 7Q10 flow rates) are  
7 | highly unlikely to occur during storm conditions. The Washington State procedures for  
8 | calculating QBELs differ from those of USEPA in that they do not provide a separate method  
9 | for considering storm flows. Because storm flows very rarely (if ever) result in stormwater  
10 | discharges to a receiving water during critical low flow conditions, the procedures for calculating  
11 | QBELs that are contained in the Washington State Permit Writers' Manual are not applicable  
12 | for storm flows.

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**Table 2: Comparison of storm flow and critical flows for Green River near Auburn, WA**

	<b>Green River *</b>		
	all flow units in cfs		
<b>Flow Statistics for Rainy Days **</b>	P >= 0.1 inch	P >= 0.3 inch	P >= 0.5 inch
# days	1,158	623	373
Maximum	11,300	11,300	11,300
50 percentile	1,220	1,290	1,360
25 percentile	733	759	787
10 percentile	373	372	413
5 percentile	293	291	319
1 percentile	224	225	277
Minimum	180	185	213
<b>Critical Flow ***</b>			
1Q10	138		
7Q10	144		

\* Flow data were obtained from the U.S. Geological Survey's (<http://waterdata.usgs.gov/nwis/sw>) website. For Green River, data from USGS Gage 12113000 (Green River near Auburn, WA) for the period WY 1937-2010 (74 years) were used.

\*\* Rainy days were identified as those days for which the total daily precipitation (snow did not occur on these days) was greater than or equal to a specified threshold (0.1 inch, 0.3 inch and 0.5 inch). Daily precipitation over the Green River watershed was assumed to be the same as the maximum of the daily precipitation recorded at the following three rain gages for the overlap period of WY 2001-2010: Lower Green River rain gage (Gage 32u, WY 1989-2010), Maple Valley I&I rain gage (MVAL, WY 2001-2010) and Enumclaw rain gage (Gage 44u, WY 1998-2010). Precipitation data were obtained from the King County's Water and Land Resources Division website.

\*\*\* Critical flows (1Q10 and 7Q10) were determined using the U.S. EPA DFLOW computer program (available online at

1 <http://water.epa.gov/scitech/datait/models/dflow/index.cfm>), using daily flow data for the  
2 period WY 1937-2010 (74 years)

3 23. Steady-state models that are used to develop effluent limitations also assume that the  
4 underlying effluent data are lognormally distributed (State of Washington 2008b; USEPA 1991).  
5 If effluent data are not consistently lognormally distributed, as is the case for storm flows, the  
6 given steady-state methods of calculating effluent limitations are not applicable.

7 24. As described in USEPA (1991), dynamic models explicitly predict the effects of  
8 receiving water and effluent flow and concentration variability. In dynamic modeling, computer  
9 models (either deterministic or probabilistic or a combination<sup>2</sup>) may be used to incorporate the  
10 variability of individual inputs (e.g., effluent flow rate and concentration, receiving water flow  
11 rate and concentration) and can provide a more realistic representation than steady-state models  
12 of receiving water concentrations and/or toxicity. Effluent limits derived using dynamic models  
13 are generally expressed as long-term average concentrations and as acceptable variances from  
14 those averages (e.g., as monthly or seasonal averages, with permissible maximum values for  
15 single samples). Some alternatives to dynamic modeling, such as the use of statistical methods  
16 that do not assume that data fit particular probability distributions (e.g., non-parametric  
17 methods), may also be appropriate for developing numeric limits for storm flows.

18 25. The considerations described above for water quality objectives, reasonable potential  
19 determinations, and the derivation of effluent limitations are also applicable to the derivation of  
20 benchmarks as that term is used in the ISGP, since the ISGP benchmarks are also derived from

21  
22 <sup>2</sup> Deterministic models include continuous simulation models, which use a time series of flow rate and  
23 concentration data for both the effluent and the receiving water, and which consider mixing within the receiving  
24 water body. Probabilistic analysis techniques include Monte Carlo simulations, which use statistically described  
25 inputs, such as statistical distributions of effluent and receiving water constituent concentrations. Deterministic and  
26 probabilistic techniques can be combined. In either case, and as described by USEPA, "dynamic modeling  
techniques have an additional advantage over steady-state modeling in that they determine the entire effluent  
concentration frequency distribution required to produce the desired frequency of [water quality] criteria  
compliance." (USEPA 1991 at p. 80)

1 | water quality criteria that describe the frequency, magnitude, and duration of an exposure.  
2 | Further, I understand that Ecology has argued to the Pollution Control Hearings Board in  
3 | response to the Fourth Motion for Summary Judgment on behalf of Puget Soundkeeper Alliance  
4 | that the implementation measures of the permit that are triggered by ISGP benchmark  
5 | exceedances are expected to result in attainment of the ISGP benchmarks. An exceedance of  
6 | Action Levels would likely lead to a review of a site's SWPPP and BMPs, but would only lead  
7 | to the implementation of structural and treatment controls if subsequent analysis indicated that  
8 | the selected source controls and BMPs were not achieving the expected pollutant removal  
9 | (performance).

10 | 26. Given the extreme variability of stormwater runoff concentrations, use of water quality  
11 | criteria directly as effluent limitations (i.e., to be applied at end-of-pipe, with no allowable  
12 | exceedances) is inappropriate, as such use does not account for or incorporate the variability  
13 | observed in effluent discharge concentrations, and does not account for mixing, dilution, and  
14 | exposure times within a receiving water. Note that effluent from BMPs or treatment measures  
15 | continues to exhibit high levels of variability (as detailed further below), and thus the same  
16 | considerations apply to treated stormwater flows. As discussed below, the ISGP contains  
17 | effluent limitations for discharges to 303(d)-listed waters that are simply the water quality  
18 | criteria applied in or at the end-of-pipe.

19 | 27. Likewise, effluent limitations and benchmarks that were not derived in consideration of  
20 | the observed or expected variability of constituent concentrations in effluent discharges are  
21 | inappropriate. Both benchmarks that are based on water quality criteria and effluent limitations  
22 | that are developed for stormwater discharges must consider variability in effluent and receiving  
23 | water flow rates and constituent concentrations, and must also consider the relevant exposure  
24 | time (for aquatic life criteria) within the receiving water.

25 | 28. The Storm Water Panel to the State Water Resources Control Board for California  
26 | (Currier et al. 2006) concluded that numeric limits were feasible for some industrial categories.

1 The report recommended that numeric limits should be established, for discharges to waters  
2 without a TMDL, in a phased manner, such that limits are first based upon the use of best  
3 currently available technology, with a defined period of compliance, and in recognition of the  
4 issues associated with individual industry types or categories and financial viability. The ISGP  
5 does not “phase in” numeric limits in this manner.

6 29. The Storm Water Panel also concluded that “to establish Numeric Limits for industrial  
7 sites requires a reliable database, describing current emissions by industry types or categories,  
8 and performance of existing BMPs.” (Currier et al. 2006 at p. 19). The Storm Water Panel  
9 concluded that the current industrial permit in California has not produced such a database; it  
10 appears to me that such a database likewise does not exist for the State of Washington. For  
11 example, I am unaware of a comprehensive dataset that characterizes the variability of  
12 constituent concentrations and storm flows during and between storm events and by industry  
13 types or categories, or that describes the performance of specific BMPs for industrial activities,  
14 or that characterizes the dissolved and total fractions of metals (see discussion below) in  
15 stormwater discharges from industrial facilities. EnviroVison and Herrera Environmental  
16 Consultants (2006) also reached similar conclusions, as follows:

17 “The possibility of establishing numeric effluent limits for this  
18 permit, as is the case with individual stormwater permits, was also  
19 reviewed. It was determined that the data needed to develop  
20 numeric limits are not currently available and could not be  
21 confidently applied against the large range of facility sizes, types,  
22 and locations represented by this general permit.”

23 Executive Summary at p. 2.

24 Finally, the Storm Water Panel concluded that it may be more feasible to develop numeric  
25 effluent limits for new facilities. For these reasons, I believe that it is premature to establish  
26 water quality based effluent limitations (or benchmarks) in the ISGP.

30. I agree with the California Storm Water Panel that it may be feasible to develop effluent  
limitations (numeric limits) for storm water discharges from industrial facilities in the future.

1 However, as described above, I believe that the development of scientifically defensible numeric  
2 limits will require both the collection of a considerable quantity of data to characterize  
3 constituent concentrations, flows, and BMP performance, and the use of a technically adequate  
4 methodology for calculating limits that is based upon the particular and unique characteristics of  
5 storm flows and related receiving water concentrations.

#### 6 REASONABLE POTENTIAL

7 31. In my opinion, the EnviroVision and Herrera Environmental Consultants (2006)  
8 evaluation of data compiled by Ecology from Discharge Monitoring Reports (DMRs) is not an  
9 appropriate basis for conducting a reasonable potential evaluation for the purpose of establishing  
10 numeric effluent limitations. The DMR data for copper were reported as concentrations of total  
11 copper. EnviroVision and Herrera Environmental Consultants (2006) reported that 1177 data  
12 points were available for total copper in data submitted by permittees pursuant to the monitoring  
13 and reporting requirements of the prior industrial stormwater general permit. EnviroVision and  
14 Herrera Environmental Consultants (2006) do not report any dissolved copper data.

15 32. EnviroVision and Herrera Environmental Consultants (2006) report some single high  
16 values for copper concentrations in industrial stormwater samples. However, EnviroVision and  
17 Herrera Environmental Consultants (2006) note that “the maximum concentrations for several of  
18 the parameters (e.g., total zinc, total copper, nitrate + nitrite nitrogen, and total phosphorus)  
19 appeared to be extreme outliers that may indicate that the associated values were incorrectly  
20 entered in the DMR or database.” These “outlier” values were not removed from the  
21 EnviroVision and Herrera Environmental Consultants (2006) analysis. A document entitled  
22 “Ecology Perspectives” further indicates that the Ecology permit team “doubted the accuracy of  
23 DMR data.” Further, the sampling requirements of the previous permit only required continued  
24 sampling for copper concentrations when sampling results exceeded the zinc benchmark; the  
25 prior permit allowed a discharger to cease sample collection for metals when eight consecutive  
26 quarters of sampling data fell below benchmark values (State of Washington 2008a). It is

1 accordingly unlikely that the data in the dataset were representative of discharges from industrial  
2 facilities as a whole. Therefore, the DMR data evaluated by EnviroVison and Herrera  
3 Environmental Consultants (2006) do not form a suitable basis for a reasonable potential  
4 determination, particularly when one emphasizes the maximum reported values for total copper  
5 in individual industrial categories.

6 33. In their 2006 report, EnviroVision and Herrera Environmental Consultants concluded that  
7 existing data were insufficient for the purpose of evaluating reasonable potential, and that far  
8 more detailed and carefully collected datasets would be required to do so:

9 “Establishment of water quality based numeric limits for specific  
10 pollutants was considered during the initial phases of this project.  
11 However, the development of numeric effluent limits ... requires  
12 access to detailed, site-specific information in order to perform the  
13 reasonable potential analysis. Furthermore, this information must  
14 be collected on multiple occasions to adequately characterize the  
15 discharge and to allow for the development of scientifically and  
16 legally defensible effluent limits...the existing data that were  
17 compiled through the ISWGP are insufficient for evaluating  
18 compliance with State water quality standards because they do not  
19 include any information on receiving water characteristics and  
20 effluent discharge rates.”

21 EnviroVision and Herrera Environmental Consultants (2006) at 22.

22 34. The DMR data used in the evaluation are reported as total copper, and TSS values for the  
23 same samples have not been reviewed by me (or by EnviroVison and Herrera Environmental  
24 Consultants 2006). Without that information, it is not possible to know or to estimate the  
25 concentrations of dissolved copper in these samples. It is likely that samples that exhibited high  
26 concentrations of total copper contained much lower concentrations of dissolved copper (or were  
erroneous, as noted previously). It is not possible to determine if these values exceeded water  
quality criteria for dissolved copper.

35. Additionally, there is no information as to what BMPs were in use at the sites where  
samples were collected, or just where on a facility the samples were collected. It is also not  
known whether the dataset includes data points that should be eliminated due to unusual

1 | circumstances (e.g., spill events). For all these reasons, I believe that available data are  
2 | insufficient to perform a robust analysis of “reasonable potential.”

3 | 36. To summarize, the existing datasets are insufficient to allow determination of “reasonable  
4 | potential” for stormwater discharges from industrial facilities, or to serve as the basis for the  
5 | calculation of scientifically sound effluent limitations or benchmarks. Should Ecology wish to  
6 | pursue these goals in the future, it should require implementation of a careful, well-designed  
7 | program of data collection. This would require a significant commitment of resources on the  
8 | part of Ecology and permittees, and other approaches (e.g., enhanced implementation of BMP  
9 | approaches) may be preferred.

10 | 37. Puget Soundkeeper Alliance contends that “EPA’s NPDES Permit Writers’ Manual even  
11 | explains a method for determining reasonable potential without any effluent monitoring data.”  
12 | (p. 4 of Nos. 09-135 through 09-141). However, USEPA’s new Permit Writer’s Manual  
13 | (USEPA 2010) provides no specific method for determining reasonable potential with limited  
14 | data. Rather, it says that the permit writer can consider a range of information and use best  
15 | professional judgment (BPJ), so long as a “thorough rationale” is provided. Although the Permit  
16 | Writer’s Manual provides a section on “conducting a reasonable potential analysis without data,”  
17 | it provides that one factor a permit writer can consider in making such a determination is  
18 | “effluent variability information,” which would require data. In addition, the 2010 Permit  
19 | Writer’s Manual contemplates a reasonable potential analysis only for steady-state point source  
20 | discharges and not for intermittent and highly variable discharges such as stormwater runoff.

21 | **COPPER**

22 | 38. WAC 173-201A-240 provides water quality criteria for toxic substances for the State of  
23 | Washington. For copper, criteria are expressed in terms of the dissolved fraction. For copper,  
24 | criteria values are also a function of receiving water hardness. To convert the dissolved values to  
25 | total recoverable values for the purpose of developing an effluent limit, a “conversion factor” or  
26 | “translator value” (these terms are used interchangeably) that relates the dissolved fraction to the

1 the total metals concentration is used. WAC 173-201A-240 provides that metals criteria  
2 (including criteria for copper) “may not be used to calculate recoverable effluent limits unless  
3 the seasonal partitioning of the dissolved to total metals in the ambient water are known. When  
4 this information is absent, these metals criteria shall be applied as total recoverable values,  
5 determined by back-calculation, using the conversion factors incorporated in the criterion  
6 equations.” For copper, the default conversion factor in the criterion equation is 0.96 (i.e.,  
7 assumes that 96% of total copper is present in the dissolved fraction). It is important in any  
8 discussion of criteria, benchmarks, or effluent limitations to be clear about whether values are  
9 expressed as total or as dissolved copper concentrations.

10 39. The benchmark values for total copper in the ISGP are 14 µg/L and 32 µg/L for western  
11 and eastern Washington, respectively. These values were derived by Herrera Environmental  
12 Consultants (2009), which conducted a Monte Carlo analysis that quantified uncertainty arising  
13 from three variables: receiving water background concentrations, translator values for estimating  
14 dissolved metals concentrations from total metals concentrations, and hardness-dependent water  
15 quality standards for metals. The benchmark values for copper that were used in the ISGP were  
16 based upon Monte Carlo analyses performed at a fixed dilution value of 5:1 and that allowed a  
17 10% exceedance rate.

18 40. The benchmark values for total copper developed by Herrera Environmental Consultants  
19 (2009) and contained in the ISGP were derived without considering the variability of copper  
20 concentrations in effluent discharges. “The receiving water dilution factor (Fd) and effluent  
21 concentration (Cf) were each held as constants during these iterations” (Herrera Environmental  
22 Consultants (2009), at 2). Thus, the benchmarks would be exceeded if only one sample were  
23 collected during a quarterly monitoring period and that sample exceeded the benchmark value.  
24 (Note that the ISGP requires collection of only one sample per quarter, but appears to provide  
25 that if multiple samples are collected, concentrations can be averaged). Thus, the result from a  
26 single sample could be found to exceed the benchmark value, even if the average concentration

1 | in multiple effluent samples would have been at or below the benchmark values (i.e., if that  
2 | single sample had been drawn from a distribution with a mean concentration below the  
3 | benchmark value). Ecology recognized in the Sand and Gravel General Permit Fact Sheet (State  
4 | of Washington 2010) that the monthly average limit is the lowest applicable limit when only a  
5 | single sample is required per quarter, and it is inappropriate to apply daily maximum limits for  
6 | infrequent sampling. The Sand and Gravel General Permit Fact Sheet states: “The proposed  
7 | permit contains no changes to the surface water monthly effluent limits for turbidity and TSS  
8 | from the current permit. Ecology removed the daily maximum value for TSS in recognition that  
9 | with only one required sample per quarter, the monthly average limit is the lowest applicable  
10 | limit.” *Id.*, at 24 (emphasis added). By failing to consider the variability in effluent  
11 | concentrations in deriving the benchmark limits, the permit is requiring every sample to fall  
12 | below the benchmark value. Because of the variability inherent in stormwater samples, this is in  
13 | effect requiring the average effluent concentration to fall well below the benchmark value (i.e.,  
14 | requires achieving a value more stringent than the benchmark). Quantifying the level of  
15 | conservatism associated with this decision would require the analysis of large datasets.

16 | 41. Herrera Environmental Consultants (2009) characterized the receiving water copper  
17 | concentrations in terms of the dissolved fraction of metal present, using data obtained from the  
18 | Department of Ecology’s Environmental Information Management (EIM) database in a query  
19 | performed in 2008. A total of 833 data points were found to describe dissolved copper  
20 | concentrations in receiving waters in western Washington, and 353 data points were used to  
21 | describe dissolved copper concentrations in receiving waters in eastern Washington.

22 | 42. Herrera Environmental Consultants (2009) then appear to have used translator values to  
23 | “convert” effluent total copper concentrations for use as benchmarks in the permit to effluent  
24 | dissolved concentrations, which were then used in the Monte Carlo analysis to calculate  
25 | receiving water concentrations of dissolved copper that are compared to water quality standards  
26 | expressed as dissolved concentrations. The translator values used by Herrera Environmental

1 Consultants (2009) to estimate the fraction of the total metal present in the dissolved phase were  
2 derived from guidance provided by Pelletier (1996), who analyzed the fraction of metals present  
3 in the dissolved phase in data collected from rivers. Herrera Environmental Consultants (2009)  
4 did not use measurements of total and dissolved concentrations in stormwater effluent samples to  
5 calculate translator values. Thus, it is questionable that the values derived by Pelletier (1996) for  
6 receiving waters are applicable to stormwater discharges from industrial facilities.

7 43. As discussed in Herrera Environmental Consultants (2009), the translator values derived  
8 by Pelletier (1996) were found to vary depending on the total suspended solids (TSS)  
9 concentration in the receiving water. For this reason, the Herrera Environmental Consultants  
10 (2009) Monte Carlo analysis obtained and used TSS data in receiving waters to calculate  
11 translator values. Herrera Environmental Consultants (2009) performed a new query of the EIM  
12 database to obtain representative values of TSS in receiving waters. Herrera Environmental  
13 Consultants (2009) report obtaining 29,631 values from western Washington, and 31,811 values  
14 from eastern Washington, to characterize TSS concentrations in receiving waters. The use of  
15 two separate queries to characterize dissolved copper and TSS concentrations (and the result of  
16 two obviously different datasets, based on the number of data returned by each query) is  
17 scientifically inappropriate and unreasonable. There is no indication in Herrera Environmental  
18 Consultants (2009) confirmed any correlation or relationship between TSS and metals  
19 concentrations in the data used in the report. More importantly, it is not clear whether the data in  
20 the EIM dataset were for dry weather flows or for wet weather flows (or both). Thus, the data  
21 used by Herrera Environmental Consultants (2009) to derive the translators used to develop  
22 benchmarks in the ISGP have not been established to be representative of, or applicable to, storm  
23 flow conditions.

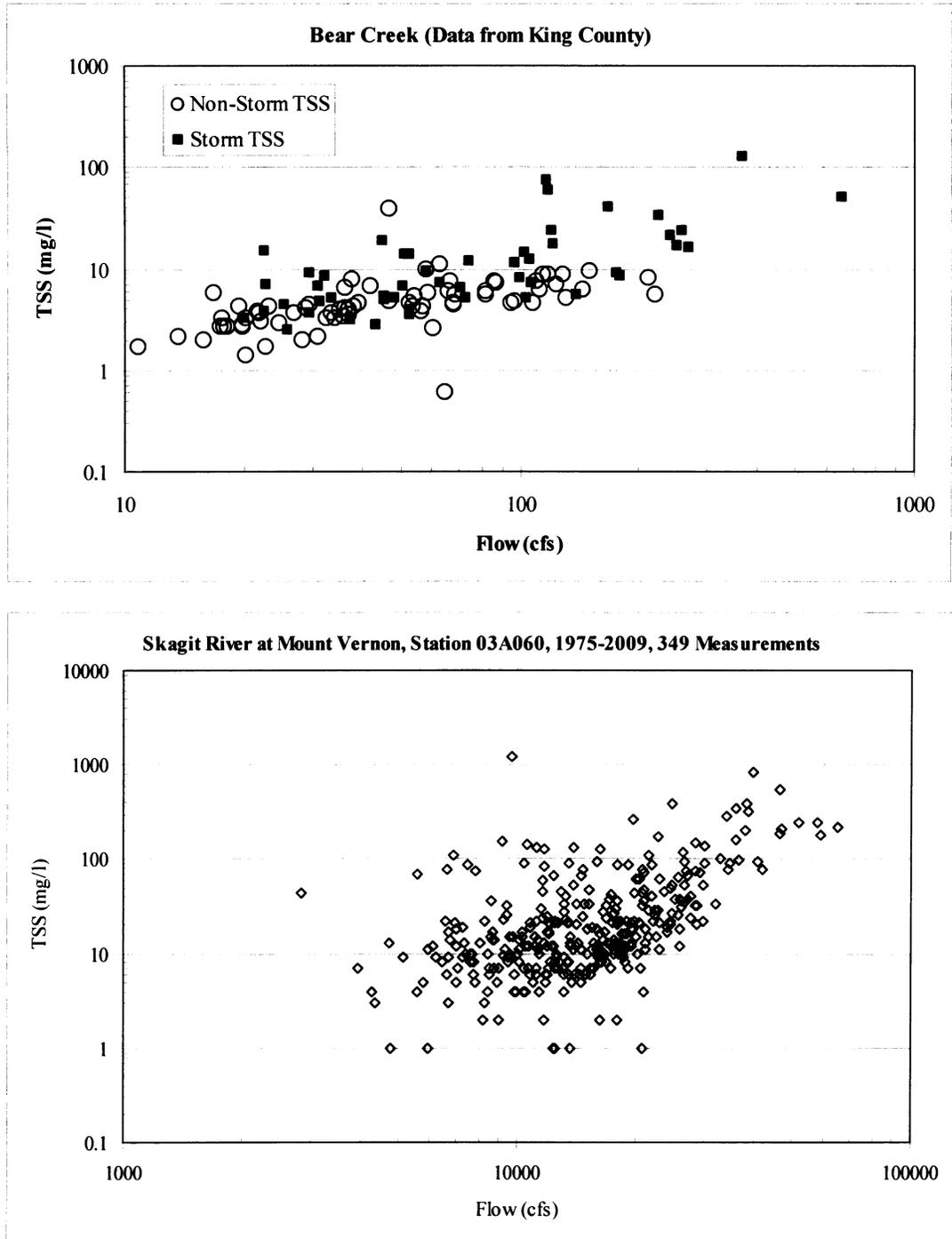
24 44. The highest TSS concentrations typically occur during storm flows, when high flow rates  
25 in receiving waters are sufficient to keep particles in suspension (Flow Science Incorporated  
26 2008; McPherson et al. 2002; Stein and Yoon 2007). Data from streams within the State of

1 State of Washington confirm this behavior. For example, Figure 4 shows that for Bear Creek  
2 (King County) and Skagit River (Skagit County) in western Washington, in general, TSS  
3 concentrations at high storm flows are greater than TSS concentrations during low flow  
4 conditions. Note also the TSS concentrations in these receiving waters frequently exceed 30  
5 mg/L, the effluent limitation established in the ISGP. Figure 4 also shows that TSS  
6 concentrations in the stream during storm conditions (when daily rainfall amounts are 0.1 inches  
7 or greater) tend to be higher than TSS concentrations in the stream during non-storm conditions.  
8 Similar relationships were also observed (but are not shown here) for several others streams in  
9 Washington (e.g., Mill Creek in King County, Green River near Auburn, and Samish River in  
10 Skagit County).

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**FIGURE 4 – TSS DURING STORM AND NON-STORM CONDITIONS FOR TWO RIVERS IN WA**



1  
2 Note –

3 1. For Bear Creek, TSS data from Station A0484 for the period 1971-2010, flow data from Gage  
4 02a (Bear Creek at Union Hill Road) for the period 1987-2010, and precipitation data from the  
5 Marymoor Park I&I rain gage for the period 2001-2010 were used. Data from the overlap period  
6 between the three datasets, 2001-2010, was used in the above graphic (top panel). TSS, flow and  
7 precipitation data were obtained from the King County's Water and Land Resources Division  
8 (<http://green.kingcounty.gov/WLR/Waterres/StreamsData/Default.aspx>) website.

9 2. For Skagit River, TSS and flow data for the period 1975-2009, Station 03A060 (Skagit River  
10 near Mount Vernon), were obtained from the Washington Department of Ecology's website  
11 ([http://www.ecy.wa.gov/apps/watersheds/riv/station.asp?theyear=&tab=final\\_data&scroll=252&](http://www.ecy.wa.gov/apps/watersheds/riv/station.asp?theyear=&tab=final_data&scroll=252&wria=03&sta=03A060)  
12 [wria=03&sta=03A060](http://www.ecy.wa.gov/apps/watersheds/riv/station.asp?theyear=&tab=final_data&scroll=252&wria=03&sta=03A060))

13 3. Storm events were identified as those days for which the total daily precipitation was greater  
14 than 0.1 inches.

15  
16 45. There is no disclosure or discussion in Pelletier (1996) as to whether the data the author  
17 used to develop translator values were collected for wet or dry weather conditions. In addition,  
18 the data reported by Pelletier (1996), and upon which the Herrera Environmental Consultants  
19 (2009) translator values are based, are problematic. The data in Pelletier (1996) show wide  
20 variability in the ratio of total to dissolved copper values. Calculations by Flow Science show  
21 values ranging from 0.03 to 1.9, indicating that Pelletier's data showed included samples with up  
22 to 190% of total copper present in the dissolved phase, a result that is not physically possible.  
23 Herrera Environmental Consultants (2009) report the translator values that they used in the  
24 derivation of permit benchmarks (Appendix D), and for copper, plots show that translator values  
25 as high as 140% were used. In fact, it appears that approximately 5% of the translator values  
26 used for western Washington, and 10% of the translator values used for eastern Washington,  
exceeded the maximum possible value of 100%.

46. In general, dissolved copper concentrations in the Pelletier (1996) dataset were relatively  
low (generally less than 2 µg/L dissolved copper, with a maximum reported value of 3.35 µg/L),  
while total copper concentrations varied much more widely (maximum value of 43 µg/L). TSS  
data for the same samples were also reported by Pelletier (1996) and also varied widely  
(maximum value of 1970 mg/L). The data demonstrate that, in general, the highest

1 concentrations of total copper occurred in the samples that also had the highest TSS  
2 concentrations. These data are also consistent with the observation that when total copper  
3 concentrations are high, dissolved copper concentrations are typically low. Pelletier (1996)  
4 confirmed this correlation and developed relationships showing that translator values are  
5 inversely correlated with TSS (i.e., translator values are lowest when TSS concentrations are  
6 highest). As discussed above, the highest TSS concentrations generally occur during storm  
7 flows. Thus, translator values would typically be lower during storm conditions than during low  
8 flow conditions, so that use of a TSS dataset that does not distinguish between wet and dry  
9 conditions would result in overestimation of the translator values to be applied during storm  
10 conditions.

11 47. Finally, it appears that Herrera Environmental Consultants (2009) used the equations  
12 presented in Table 8 of Pelletier (1996) to calculate the translator values used to derive the  
13 copper benchmark. Table 8 of Pelletier (1996) provides recommended estimates of the 90th and  
14 95th percentile of ambient dissolved fractions. If Herrera Environmental Consultants (2009) did  
15 indeed use the equations in Table 8 of Pelletier (1996), the translator values used to derive the  
16 copper benchmark value were likely too high. Indeed, Figure 6 of Pelletier (1996) indicates that  
17 the 90th and 95th percentile translator values corresponding to the equations in Table 8 were  
18 higher than the translator values indicated by the dataset, often by a significant margin. Use of  
19 translator values that are overly high will result in a benchmark value for total copper that is  
20 overly and unnecessarily low.

21 48. In addition, Herrera Environmental Consultants (2009) did not apply a water effect ratio  
22 (WER) when using the water quality criteria for copper and other metals to establish the  
23 benchmark values in the ISGP. As described in WAC 173-201A-240, "metals criteria may be  
24 adjusted on a site-specific basis when data are made available to the department clearly  
25 demonstrating the effective use of the water effects ratio approach established by  
26 USEPA...Ecology has developed supplemental guidance for conducting water effect ratio

1 studies” (WAC 173-201A-240, footnote “dd”). The WER is used to “correct” criteria for metals,  
2 including criteria for copper, lead, and zinc, in recognition of the fact that those metals often  
3 exhibit a lesser degree of toxicity in ambient waters than they exhibit in the laboratory waters  
4 used to establish the water quality criteria. Indeed, the toxicity of copper varies depending on  
5 the characteristics of the receiving water, including the dissolved organic carbon content, the  
6 alkalinity, the pH, and the hardness of the receiving water. To understand the toxicity of copper,  
7 use of a WER is necessary to reflect the actual characteristics of the receiving water. I  
8 understand that the 2005 Boatyard General Permit applied area-wide WERs to establish a copper  
9 benchmark, and that the use of WERs in this manner was acceptable to the Pollution Control  
10 Hearings Board.

11 49. Where a WER is found to be greater than 1.0, the metal exhibits less toxicity than  
12 laboratory water, and metals criteria higher than the default criteria of WAC 173-201A-240  
13 would be allowed without causing any increase in toxicity to aquatic life. The fact that Herrera  
14 Environmental Consultants (2009) did not use a WER when establishing benchmarks within the  
15 ISGP represents an additional unrealistically conservative assumption that may have resulted in  
16 benchmark values that are lower than would be necessary to protect aquatic life. In my opinion,  
17 it was unreasonable for Ecology to establish a copper benchmark that was not adjusted to reflect  
18 the actual conditions of the receiving waters, as authorized through use of a WER.

19 50. In summary, there appear to be insufficient data describing both total and dissolved  
20 copper concentrations in industrial stormwater discharges to allow the calculation of a translator  
21 value for those discharges. Instead, it appears that Herrera Environmental Consultants (2009)  
22 calculated translator values based upon receiving water data and the analysis of Pelletier (1996).  
23 It further appears that some of the data in the Pelletier dataset were flawed (resulting in translator  
24 values greater than 100% for individual data points), and that the use of 90<sup>th</sup> or 95<sup>th</sup> percentile  
25 values, and the use of receiving water TSS concentrations from both dry and wet weather  
26 conditions, resulted in translator values that are unnecessarily high. This approach to translator

1 values, combined with the failure to apply a WER for copper, result in benchmark values that are  
2 unnecessarily low.

### 3 ALTERNATIVE APPROACHES AND BMP EFFECTIVENESS

4 51. As noted above, stormwater discharges by their very nature exhibit highly variable flow  
5 rates and constituent concentrations. As also noted above, the benchmarks implemented in the  
6 permit, and the effluent limitations that are to be applied to discharges to 303(d)-listed or TMDL  
7 waters through the ISGP, were not developed in consideration of the variability of storm flows or  
8 of the variability of constituent concentrations in effluent from BMPs or treatment technologies.  
9 For these reasons, it is not clear that BMPs can consistently achieve the benchmark levels or  
10 effluent limitations in the ISGP all the time and over a wide range of storm conditions.

11 52. I am unaware of evidence indicating that available best management practices (BMPs) or  
12 treatment technologies will be able to consistently achieve the benchmarks for total copper that  
13 are contained in the ISGP. Available evidence, including the test results for the three treatment  
14 technologies evaluated by Ecology to establish technology-based benchmarks for the Boatyard  
15 General Permit, indicates that these technologies cannot consistently meet either the benchmarks  
16 of the ISGP or the calculated WQBELs of the Boatyard General Permit (Taylor Associates Inc.  
17 2008). In a letter dated July 26, 2010, USEPA appears to agree with this conclusion, stating that,  
18 "EPA understands that the boatyards that recently installed the treatment systems have yet to  
19 demonstrate attainment" with the WQBELs calculated in the permit Fact Sheet.

20 53. However, it is well demonstrated that BMPs and treatment technologies can and do  
21 improve stormwater quality. For example, Taylor Associates, Inc. (2008) demonstrated  
22 significant removal rates for total and dissolved copper and for total and dissolved zinc in  
23 effluent from three tested treatment technologies in industrial discharges from boatyards;  
24 however, none of the tested technologies were able to meet the discharge criteria of the study  
25 (similar to effluent limitations) in all samples. Geosyntec Consultants and Wright Water  
26 Engineers, Inc. (2008) summarized BMP performance for fifteen pollutants, including total and

1 dissolved copper and total and dissolved zinc, for seven major categories of BMPs. These  
2 included detention ponds, wet ponds, wetland basins, biofilters, media filters, hydrodynamic  
3 devices, and porous pavement. This study demonstrated that each of these technologies (except  
4 porous pavement, for which data were insufficient) resulted in significant reductions of total  
5 copper and total zinc on an average basis, but that concentrations in individual samples varied  
6 widely. For dissolved copper and zinc, some BMPs produced significant reductions in  
7 concentration (e.g., wet ponds, biofilters) while others were less effective; again, individual  
8 samples showed relatively high variability.

9 54. With BMPs, as the volume of water to be treated increases, the size of the BMP and the  
10 associated cost of implementation increase significantly. For this reason, and as indicated in  
11 Figure 2, BMPs and treatment and structural controls are typically designed for a specific design  
12 condition (flow rate and/or volume of storm flow to be treated), frequently called the “design  
13 storm.” The larger the design storm for which a BMP or treatment control is sized, the greater  
14 the removal of a particular pollutant, but also the greater the cost of construction and  
15 maintenance. For example, a study by Ackerman et al. (2007) found that the cost to remove 65%  
16 of the annual copper load present in stormwater runoff from a 10-acre site using bioretention was  
17 \$200,000, while the cost to remove 85% of the load was about \$380,000 (i.e., \$180,000 for an  
18 additional 20% removal), and the cost to remove 92% of the load was approximately \$550,000  
19 (i.e., \$170,000 for an additional 7% removal of copper loads). Thus, the cost increment to  
20 remove copper loads increased in a non-linear fashion as the size of the design storm increased.  
21 This is important because the larger storms, for which full treatment is most expensive, occur  
22 infrequently. These are important considerations that should be included in any program  
23 designed to regulate storm flows, and particularly for those that utilize numeric effluent  
24 limitations (TBELs or WQBELs).

1 55. So, while BMPs can significantly improve runoff quality, it is improbable that effluent  
2 from these systems will always achieve a set benchmark value that does not account for the  
3 observed variability in BMP effluent quality.

4 56. On the basis of these data and additional available data (e.g., available at  
5 www.bmpdatabase.org), I conclude that significant improvements in water quality can be made  
6 by proper implementation of BMPs at industrial facilities.

#### 7 EFFLUENT LIMITATIONS FOR FECAL COLIFORM

8 57. The ISGP contains numeric effluent limitations for fecal coliform in stormwater  
9 discharges from industrial facilities that discharge to waters that are 303(d)-listed for fecal  
10 coliform bacteria. The use of the single sample maximum value from the Washington state  
11 criteria for fecal coliform as a never-to-be-exceeded numeric limit is inappropriate, as it in effect  
12 requires compliance with limits far more stringent than the water quality standard. Further, there  
13 is little reason to believe that human sewage or fecal matter would be present in runoff from  
14 industrial facilities, which typically employ standard measures to avoid the presence of human  
15 sewage in stormwater runoff. Instead, indicator bacteria present in stormwater runoff from  
16 industrial facilities likely originates from wildlife, birds, and regrowth, and are thus less likely to  
17 pose a human health risk than bacteria of human origin.

18 58. The State of Washington water quality criteria for fecal coliform are expressed as a  
19 geometric mean and as a single sample maximum value and depend upon the use category or  
20 classification of the receiving water. For example, criteria for waters categorized as  
21 “Extraordinary Primary Contact Recreation” specify that the geometric mean concentration of  
22 fecal coliform shall not exceed 50 colonies per 100 ml, with not more than 10 percent of samples  
23 (or any single sample when less than 10 sample points exist) exceeding 100 colonies per 100 ml  
24 (see WAC 173-201A at Table 200 (2)(b)). Fecal coliform criteria are also provided for “Primary  
25 Contact Recreation” and for “Secondary Contact Recreation.”  
26

1 59. Effluent limitations for fecal coliform are applied by the ISGP to industrial stormwater  
2 discharges to waters 303(d)-listed for fecal coliform bacteria. The ISGP states that the fecal  
3 coliform “limit is the water recreation bacteria criteria (WAC 173-201A)” (ISGP at p. 32). The  
4 ISGP Fact Sheet explains that since “the general permit only requires one grab sample per  
5 quarter, facilities will have fewer than 10 sample points” (Fact Sheet at p. 51). Thus, the ISGP  
6 applies the single sample maximum value as an end-of-pipe numeric effluent limit.

7 60. A never-to-be-exceeded, single sample limit is far more stringent than the actual water  
8 quality criterion for fecal coliform. Water quality criteria for indicator bacteria were developed  
9 in consideration of statistical data distributions (USEPA 2006). Because water quality criteria  
10 are statistically-derived limits, they are clearly not intended to apply as never-to-be-exceeded  
11 values. In fact, using water quality criteria for bacteria directly as never-to-be-exceeded numeric  
12 limits is in effect requiring compliance with levels far more stringent than the criteria upon  
13 which such limits are ostensibly based. Determining the level of conservatism that would result  
14 from this approach would require examination of multiple data sets. For example, USEPA states  
15 that it would be inappropriate to evaluate compliance with geometric mean criteria using single  
16 sample maxima:

17 “For example, in marine waters the geometric mean criterion for enterococci is 35/100  
18 ml, and the single sample maximum is 104/100 ml at designated bathing beach waters  
19 based on the 75th percentile of the distribution of individual values around the mean. If  
20 that single sample maximum were used as a value-not-to-be-surpassed, it would become  
21 a maximum value and all other values in the statistical distribution of individual  
22 measurements would have to be less than the maximum. EPA typically uses the 99th  
23 percentile of a distribution to derive regulatory maximums. Assuming a waterbody had  
24 the same standard deviation in concentrations of bacteria employed in deriving the single  
25 sample maximums (e.g., 0.7 for marine waters), the waterbody geometric mean needed to  
26 keep the waterbody concentration below 104/100 ml 99% of the time would be 2/100 ml.  
This would be far more stringent than the level of protection provided by the actual  
geometric mean criterion for enterococci of 35/100 ml. Therefore, EPA intends that  
States and Territories should retain the discretion to use single sample maximum values  
as they deem appropriate in the context of Clean Water Act implementation programs  
other than beach notification and closure, consistent with the Clean Water Act and its  
implementing regulations.”

1 Federal Register, Volume 69, Number 220, November 16, 2004, at 67225. (Note that this  
2 discussion is provided for enterococci, as fecal coliform are not recommended for use by USEPA  
3 as water quality objectives for recreational uses (USEPA 1986). However, the same statistical  
4 principles apply to fecal coliform as do for enterococci or *E. coli*, the indicators recommended  
5 for use by USEPA.)

6 61. Fecal coliform are indicator bacteria that are surrogates for the potential presence of  
7 human pathogens. Water quality standards for indicator bacteria are intended to protect humans  
8 against illness that might be caused by ingestion of water during recreational activities, such as  
9 swimming. Fecal coliform bacteria do not themselves pose a human health risk. For this reason,  
10 and because indicator bacteria come from a wide range of sources, the presence of indicator  
11 bacteria does not necessarily indicate a human health risk. In fact, a number of researchers have  
12 shown that bacteria from non-human sources pose a lesser human health risk than bacteria from  
13 human sources (Colford et al. 2005; Colford et al. 2007; Schoen and Ashbolt 2010).

14 62. Bacteria originate from multiple sources, including birds and wildlife (Bagshaw 2002;  
15 CREST 2008; Grant et al. 2001; Griffith et al. 2009; Stein et al. 2007). Data from wetlands  
16 within the State of Washington (King County) indicate that fecal coliform concentrations  
17 frequently exceed the State's water quality criteria, and that water in wetlands in both  
18 nonurbanized and urbanized watersheds likewise exceeds fecal coliform criteria (Azous and  
19 Horner 1997). Data collected by Los Angeles County demonstrate that storm water runoff from  
20 a variety of land use types, including vacant land/open space, exhibits concentrations of indicator  
21 bacteria that exceed water quality objectives (see, e.g., Table 4-12 of Los Angeles County  
22 Department of Public Works (2001). Recent work (Flow Science Incorporated 2005a; Schiff and  
23 Kinney 2001; Stein and Yoon 2007) also demonstrates that runoff from open space, natural  
24 watersheds exhibits indicator bacteria concentrations that exceed applicable water quality  
25 objectives in California, even when human sources are absent. Industrial facilities regulated by  
26 the permit typically are furnished with restrooms that are connected to the sanitary sewer system,

1 and human waste is transported via the sewer system to a publicly owned treatment works  
2 (POTW). Industrial facilities also typically do not engage in activities that directly involve  
3 indicator bacteria or the presence of human pathogens. Thus, it is unlikely that fecal coliform  
4 from human sources will be present in stormwater runoff from industrial facilities. Fecal  
5 coliform present in such discharges may originate from wildlife, birds, or regrowth within the  
6 environment. Thus, it is not believed that fecal coliform that may be present in stormwater  
7 runoff from industrial facilities will pose a significant human health risk.

8 63. Bacteria regrow in the environment. The propensity for bacteria to regrow, even in  
9 highly treated, disinfected water, is evidenced by the requirement to maintain a residual level of  
10 chlorine in highly treated drinking water within the drinking water distribution system. In fact,  
11 the USEPA requires treated tap water to contain a detectable level of chlorine to help protect  
12 against pathogens all the way to consumers' taps (American Chemistry Council 2010). A  
13 number of studies have shown that indicator bacteria also re-grow in storm drains and in the  
14 environment (City of Encinitas 2006; County of Orange 2004; CREST 2008; Grant et al. 2001;  
15 Hartel et al. 2005; Jones 2005; Martin and Gruber 2005).

16 64. A number of researchers have concluded that the primary risk to human health from  
17 recreational contact most likely comes from exposure to human viruses (Cabelli 1983; Levine  
18 and Stephenson 1990; Palmateer et al. 1991; Sinclair et al. 2009; World Health Organization  
19 1999). Because human-specific viruses require a human host for replication (Flint et al. 2004;  
20 Wagner et al. 2007), these viruses are only present in waste directly from human sources, and  
21 they will not replicate in the environment independent of human sources, as indicator bacteria  
22 such as fecal coliform do.

23 65. Fecal coliform is proven to be an unreliable indicator; the original water quality  
24 objectives for fecal coliform were established in 1968 on the basis of epidemiological studies  
25 conducted in 1948, 1949, and 1950 (National Technical Advisory Committee 1968). However,  
26 fecal coliform has since been shown to be a poor indicator of the presence of pathogens and

1 human health risk. As early as 1972, a Committee formed by the National Academy of Science-  
2 National Academy of Engineers noted the deficiencies in the study design and data used to  
3 establish the recreational fecal coliform criteria, and stated that it could not recommend a  
4 recreational water criterion because of a paucity of valid epidemiological data. Studies initiated  
5 in 1972 by USEPA found that fecal coliform densities showed “little or no correlation” to  
6 gastrointestinal illness rates in swimmers. Based upon these studies, EPA in 1986 proposed  
7 section 304(a) criteria for full body contact recreation based upon *E. coli* and/or enterococci.

#### 8 EFFLUENT LIMITATIONS FOR TSS

9 66. The ISGP requires that “[a] [p]ermittee who discharges to a water body 303(d)-listed for  
10 any sediment quality parameter shall sample the discharge for TSS” (p. 32). The TSS effluent  
11 limitation is “based upon a best professional judgment determination that stormwater discharges  
12 with less than 30 mg/L TSS will not cause or contribute to a violation of sediment management  
13 standards” (p. 53 of the Fact Sheet). Ecology has provided no additional calculations, studies, or  
14 references to support the effluent limit for TSS (see also Moore Dep. At 69-70).

15 67. The effluent limitation for TSS is not based on sound science. Absent a site-specific  
16 evaluation, it is not feasible to make a reasoned determination that sediment particles present in a  
17 stormwater discharge from any given industrial facility will cause or contribute to an exceedance  
18 of sediment management standards. This is because the mixing behavior and sediment  
19 deposition patterns within the receiving water are complex phenomena and because the  
20 concentrations of pollutants on sediment particles vary widely. There are no standard methods  
21 available in NPDES permitting guidance for determining if a stormwater discharge has the  
22 reasonable potential to cause or contribute to an exceedance of sediment management standards.  
23 The fate of pollutants on sediment particles in stormwater discharges is a complex function of  
24 mixing and dilution in the receiving water and the flow velocity of the water (as particles will  
25 settle out only below critical velocity thresholds). Determining the fate of sediment particles  
26

1 from a particular industrial stormwater discharge would be a complex undertaking requiring site-  
2 specific information and study.

3 68. TSS is not a reliable indicator of the concentrations or loads of pollutants regulated by the  
4 SMS in storm flows. Even measuring the concentrations of specific pollutants (those regulated  
5 by the SMS) in stormwater discharges would not allow a determination of whether those  
6 discharges will cause or contribute to an exceedance of SMS absent detailed, site-specific  
7 information regarding the fate of those pollutants in the receiving water. Finally, it is  
8 inappropriate to apply the standard that governs long-term average TSS concentrations in  
9 effluent from secondary sewage treatment processes as an effluent limitation to be applied to  
10 grab samples of storm water, for which secondary treatment processes are inapplicable.

11 69. Sediment management standards (SMS) include numeric thresholds for a range of  
12 pollutants, including metals such as copper and organic compounds such as polycyclic aromatic  
13 hydrocarbons (PAHs) and PCBs, and apply to marine sediments located within Puget Sound (see  
14 WAC 173-204-320, including Table I). The SMS require Ecology to consider a range of factors  
15 when establishing the need for and requirements of individual permit monitoring conditions  
16 related to the “potential for a discharge to cause a violation of the applicable sediment quality  
17 standards,” including but not limited to “discharge particle characteristics; discharge contaminant  
18 concentrations, flow, and loading rate, sediment chemical concentration and biologic effects  
19 levels; receiving water characteristics; the geomorphology of sediments; cost mitigating factors  
20 such as the available resources of the discharger; and other factors determined necessary by the  
21 department” (Ch 173-204 WAC at p. 9, bullet designations omitted). These factors have not  
22 been considered by Ecology as part of the development of the ISGP. Indeed, Bill Moore testified  
23 that the analysis required to associate a stormwater discharge with sediment contamination is  
24 “almost impossible to do” in the context of a general permit. Moore Dep. at 54:13–19.

25  
26 “Linking a stormwater discharge to a sediment contamination discharge is a -- by its  
nature, a site-specific determination. It's also a very -- a relatively complicated,

1 technically challenging assessment or analysis, one that in terms of the Industrial  
2 Stormwater General Permit covering 1200 different dischargers, is from --  
3 administratively, it's almost impossible to do.”

4 Moore Dep. at 54:13–19

5 70. Ecology has recognized the need for site-specific evaluations based upon data and  
6 information collected for specific discharges in permits issued for individual industrial facilities.  
7 For example, the Fact Sheet for NPDES Permit WA-003190-9 (Hansen Boat Company) includes  
8 the following finding:

9 “The Department has determined that the discharge of drydock flood water to Steamboat  
10 Slough, may have the potential to cause a violation of the sediment quality standards. A  
11 condition has been placed in the previous permit which requires the Permittee to  
12 demonstrate that either the point of discharge is not an area of deposition or, if the point  
13 of discharge is a depositional area, that there is not an accumulation of toxics in the  
14 sediments... the facility has a period of 36 months to collect and analyze the sediment  
15 samples, and compile the results into a Sediment Data Report and submit to the  
16 Department.” (Fact Sheet for NPDES Permit WA-003190-9 at pp. 12-13)

17 Similarly, the Fact Sheet for NPDES Permit WA-003105-4 (Foss Maritime Company) states that  
18 “Foss Maritime Company completed a sediment monitoring study in 1995. The report is  
19 under review by the Department’s Sediment Management Unit. Any additional sediment  
20 requirements...will be pursued through an administrative order.” (Fact Sheet at p. 12)

21 71. The concentration of specific pollutants on sediment particles present in stormwater  
22 discharges from industrial facilities will be a function of pollutant use at the given facility, of  
23 ambient concentrations of the pollutant that may be present over broad areas from atmospheric  
24 deposition, and of naturally occurring constituents present in soils at the facility (e.g., copper in  
25 soils and geologic deposits). The choice of 30 mg/L as a numeric limit for TSS appears to be  
26 entirely unrelated to information regarding the concentrations of pollutants that are regulated by  
the SMS and that may be present in industrial facility stormwater discharges.

72. Just as it is difficult to determine whether or not a stormwater discharge has contributed  
to sediment contamination for specific pollutants, it is also difficult to determine if individual  
stormwater discharges from industrial facilities have contributed to bioaccumulation or fish  
tissue concentrations that may result from pollutants that may be present in sediments. Bill

1 Moore also testified Ecology did not know how to link a fish tissue to an industrial stormwater  
2 discharge.

3 "I would agree that linking a fish tissue to an industrial stormwater discharge is -- we  
4 don't know how to do it."

5 Moore Dep. 63:9-10

6 73. Mr. Moore also testified that there is an "unclear and unknown relationship between fish  
7 tissue and bioassessment pollution problems and industrial stormwater discharges" (Moore Dep.  
8 63:11-18) and that he could not generalize that any particular industrial stormwater discharge is  
9 causing or contributing to a particular sediment impairment (Moore Dep. at 63-64:19-2).

10 74. Recent storm water research indicates that TSS is not a reliable or consistent indicator of  
11 the presence or concentration of other pollutants. Recent research has shown that TSS  
12 measurements generally are poor indicators of sediment loads in stormwater runoff (Bent et al.  
13 2001; USGS 2000). USGS (2000) found that "Using the TSS analytical method ... to determine  
14 concentrations of suspended material in open channel-flow can result in unacceptably large  
15 errors and is fundamentally unreliable."

16 75. TSS is in general an unreliable measure of sediment fluxes (and of pollutant loads  
17 associated with sediment transport) because TSS measurements do not typically represent larger  
18 sediment particle sizes (i.e., fine sand and larger) in stormwater. For example, URS Greiner  
19 Woodward Clyde (1999) reported that at high flow velocities (i.e., velocities typical of  
20 stormwater runoff), TSS measurements can underestimate larger particle sizes in a sample by as  
21 much as 25%. Underestimation occurs for at least two reasons. First, since larger particle sizes  
22 tend to be transported near the bottom of the channel, typical sample collection methods (e.g.,  
23 autosamplers, or grabs by hand) may not collect particle sizes larger than sand size (>0.062 mm)  
24 (Bent et al. 2001). Second, the TSS analytical method typically involves extracting an aliquot or  
25 sub-sample from the original sediment-water sample. This method rarely results in a sub-sample  
26 with the concentration and distribution of particle sizes representative of the original sample—

1 due to rapid settling of larger particle sizes in the original sample—thereby skewing TSS results  
2 toward smaller particle sizes (Glysson et al. 2000).

3 76. TSS concentrations in stormwater runoff are affected by various factors, such as land use  
4 type, geology, storm size, and rainfall intensity (Ackerman and Schiff 2003; Johnson et al. 1997;  
5 Yoon and Stein 2008). In addition, TSS and sediment loads in undeveloped watersheds are  
6 affected primarily by the size of the storm generating the runoff. Therefore, TSS concentrations  
7 in receiving waterbodies can change dramatically depending on storm size, receiving water flow  
8 conditions, and the nature of the watershed itself (Flow Science Incorporated 2008). As shown  
9 within this testimony, TSS concentrations in receiving water bodies within the State of  
10 Washington generally increase during storm events, and frequently exceed concentrations of 30  
11 mg/L.

12 77. For metals, much of the pollutant mass in storm flows is associated with larger particle  
13 sizes. Multiple researchers have reported that the majority of metals are associated with larger  
14 particle sizes (>0.062 mm) (Shaheen 1975) that are inadequately captured by TSS measurements.  
15 More recent research also confirms that mid-range to coarse particles carry the bulk of heavy  
16 metal mass in runoff from an urban Interstate pavement site (Sansalone and Tribouillard 1999),  
17 in urban stormwater (Sansalone 2001), and in urban roadway snow (Glenn and Sansalone 2002).

18  
19 78. An issue paper prepared by URS Greiner Woodward Clyde (1999) for USEPA found that  
20 although many pollutants were highly associated with particulates, the correlation between TSS  
21 and specific pollutants varied. For example, “the reason for the variability exhibited by copper  
22 and zinc (and likely other metals) is that the fraction of metal in particulate form is highly  
23 affected by the location, land use (e.g., industrial v. open space), and specific land use factors  
24 (the type of industry present; the presence of mineral resources). As such, generally TSS may be  
25 a poor indicator of the concentrations of other pollutants.” (URS Greiner Woodward Clyde  
26 (1999) at p. 3)

1 79. Organic pollutants are different from metals in that much of the pollutant mass tends to  
2 be associated with fine particle size fractions. A literature review by Witkowski et al. (1987)  
3 indicated that non-ionic organic compounds (e.g., DDTs, PCBs) tend to be associated with the  
4 smallest particle-size fraction due to the generally high organic content in that size fraction. For  
5 example, Frank et al. (1980; 1979) reported that DDT and its congeners, dieldrin, and PCB  
6 concentrations were at least two to three times higher in depositional areas of Lake Superior and  
7 Lake Ontario (i.e., where fine-grained sediments are found) than in non-depositional areas of the  
8 lakes, where coarser particles are present. Laboratory studies also indicate that “in general ...  
9 organic compounds sorb preferentially to the fine-sediment (silt and clay) fraction because of its  
10 typically high organic carbon content” (Karickhoff et al. 1979; Morris and Calvert 1975;  
11 Schwarzenbach et al. 1993; Witkowski et al. 1987).

12 80. Ms. Melissa Gildersleeve, Manager-Watershed Management, similarly testified that the  
13 presence of TSS in an industrial stormwater discharge would not necessarily support an  
14 assumption that other pollutants such as PCBs were present in the discharge.

15 “Q. I’ll try an example. If a water body is 303(d) listed for PCBs, and a discharger, an  
16 industrial stormwater discharger to that water body, has TSS in its stormwater discharge,  
17 can you necessarily assume from the presence of that TSS that the stormwater discharger  
18 is discharging PCBs?  
19 A. No.”

20 Gildersleeve Dep. at 37:5–11

21 Ms. Gildersleeve further testified that TSS in an industrial stormwater discharge might indicate  
22 that other pollutants were present, but only if it was assumed that there were other chemicals  
23 present that the stormwater could pick up (Gildersleeve Dep. at 37:12–23).

24 81. It appears that the TSS limit may also have been based in part on the 30-day average  
25 standard for wastewater treatment plants employing secondary treatment. Moore Dep. at 70.  
26 See WAC 173-221-040.

1 82. The purpose of secondary treatment as part of the wastewater treatment process is to  
2 break down the organic content of the waste stream (Schroeder 1977; Wanner 2006). Secondary  
3 treatment is applied to a sewage waste stream that has a continuous flow (Water Environment  
4 Federation 1992). Secondary treatment processes also involve anaerobic biological processes  
5 (Water Environment Federation 1996). Secondary treatment processes are not applicable to or  
6 suitable for the treatment of storm flows for several reasons. First, storm flows are intermittent,  
7 and equalization (retention or storage) is typically not provided in order to maintain continuous  
8 flows for secondary treatment. Second, the biological treatment processes used in secondary  
9 treatment require continuous flow and maintenance of anaerobic conditions; intermittent flows or  
10 disruptions in flow frequently cause disruptions of biological treatment processes (Kerri 2008).  
11 Finally, the wastewater characteristics of sewage typically differ significantly from the  
12 characteristics of storm flows. For example, typical municipal wastewater has a biological  
13 oxygen demand (BOD) of 300 mg/L, while storm flows typically have BOD values of 30 mg/L  
14 or less (EnviroVision and Herrera Environmental Consultants 2006; Schroeder 1977). For these  
15 reasons, secondary treatment would not work as a means of treating storm flows.

16 83. As noted above in the citation from WAC 173-221-040, the 30 mg/L TSS standard  
17 applicable to secondary treatment facilities is applied as a 30-day average TSS concentration.  
18 Secondary treatment standards also include a seven-day average TSS standard of 45 mg/L.  
19 Clearly, these standards anticipate the fact that secondary treatment processes typically  
20 experience continuous flow. In addition, the standards are not intended to be applied as short-  
21 term or instantaneous values. By contrast, the ISGP requires the collection of only one (1) grab  
22 sample per quarter, and TSS concentrations in that sample are then to be compared to the  
23 effluent limitation of 30 mg/L. The application of a secondary treatment standard as an  
24 instantaneous value is in fact far more rigorous than the actual standard, given the lack of  
25 averaging period.

26 84. This testimony is based in part on the following references:

- 1 Ackerman, D. and Schiff, K. (2003). Modeling stormwater mass emissions to the Southern  
California Bight Westminster, CA, Southern California Water Research Project.
- 2 Ackerman, D., Schiff, K., Strecker, E. and Leisenring, M. (2007). Concept development design  
3 storm for water quality in the Los Angeles region. Costa Mesa, CA, SCCWRP,: 40.
- 4 American Chemistry Council. (2010). "Chlorine and drinking water FAQs." Retrieved May 17,  
5 2010, from  
[http://www.americanchemistry.com/s\\_chlorine/sec\\_content.asp?CID=2183&DID=9227](http://www.americanchemistry.com/s_chlorine/sec_content.asp?CID=2183&DID=9227&CTYPEID=109)  
6 [http://www.americanchemistry.com/s\\_chlorine/sec\\_content.asp?CID=2183&DID=9227](http://www.americanchemistry.com/s_chlorine/sec_content.asp?CID=2183&DID=9227&CTYPEID=109)  
7 [http://www.americanchemistry.com/s\\_chlorine/sec\\_content.asp?CID=2183&DID=9227](http://www.americanchemistry.com/s_chlorine/sec_content.asp?CID=2183&DID=9227&CTYPEID=109)  
8 [http://www.americanchemistry.com/s\\_chlorine/sec\\_content.asp?CID=2183&DID=9227](http://www.americanchemistry.com/s_chlorine/sec_content.asp?CID=2183&DID=9227&CTYPEID=109)  
9 [http://www.americanchemistry.com/s\\_chlorine/sec\\_content.asp?CID=2183&DID=9227](http://www.americanchemistry.com/s_chlorine/sec_content.asp?CID=2183&DID=9227&CTYPEID=109)  
10 [http://www.americanchemistry.com/s\\_chlorine/sec\\_content.asp?CID=2183&DID=9227](http://www.americanchemistry.com/s_chlorine/sec_content.asp?CID=2183&DID=9227&CTYPEID=109)  
11 [http://www.americanchemistry.com/s\\_chlorine/sec\\_content.asp?CID=2183&DID=9227](http://www.americanchemistry.com/s_chlorine/sec_content.asp?CID=2183&DID=9227&CTYPEID=109)  
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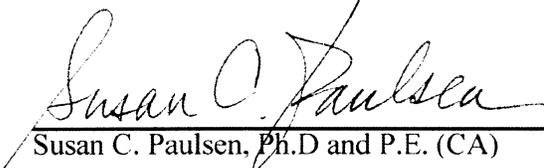
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17 DATED this 20<sup>th</sup> day of December, 2010.

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## SUSAN C. PAULSEN

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Vice President and Senior Scientist, Flow Science Incorporated  
723 E. Green Street, Pasadena, California 91101  
Phone: (626) 304-1134 Fax: (626) 304-9427 Email: spaulsen@flowscience.com

### EDUCATION

- Ph.D., Environmental Engineering Science** 6/97  
California Institute of Technology, Pasadena, California  
Thesis: A Study of the Mixing in Natural Waters Using ICP-MS and the Elemental Composition of Waters  
Advisor: Dr. E. John List
- M.S., Civil Engineering** 6/93  
California Institute of Technology, Pasadena, California
- B.S., Civil Engineering (Environment and Water Studies) with Distinction** 12/90  
Stanford University, Stanford, California.

### PROFESSIONAL AFFILIATIONS

Registered Professional Civil Engineer in California, C66554; American Society of Civil Engineers (ASCE);  
National Ground Water Association; American Water Resources Association

### PROFESSIONAL EXPERIENCE

- Senior Scientist, Flow Science Incorporated; Pasadena, California.** 8/97 - present
- Provided litigation support for major Superfund-related projects involving analysis of fate and transport of chemical compounds; evaluated sampling programs and possible remedial measures
  - Provided technical analysis, testimony, and litigation support related to NPDES permits, permit appeals, TMDL processes, and water quality regulation
  - Conducted analyses relating to water flow, water quality, and mixing patterns and conducted field studies in the San Francisco Bay-Delta estuary
  - Designed and implemented modeling and field studies in reservoir, river, estuarine, and ocean environments using both dye and elemental tracers to evaluate the impacts of treated wastewater, agricultural, and industrial discharges on receiving waters and drinking water intakes
  - Developed analysis methods, expert reports, and testimony regarding numeric effluent limitations and sources of pollutants in storm flows from construction sites, industrial facilities, and MS4 systems
  - Participated in an intensive study of the mixing of copper in the upper Sacramento River
  - Authored a review of the Administrative Record of the Los Angeles Basin Plan
  - Provided technical support and policy analysis in the development of sediment quality objectives, storm water policy, TMDL and listing policies, and water quality and water rights issues
- Consultant to Flow Science Incorporated; Pasadena, California.** 1/94 - 6/97
- Analyzed samples collected in the Napa River estuary to determine tidal flushing based upon water signatures; analysis resulted in conversion of 16,000 acres to wetland habitat
  - Assisted the development and successful implementation of a plan to add a rare earth tracer to a major drinking water reservoir to determine mixing and residence times
  - Assisted the development and implementation of a program to analyze samples and add a tracer to a major California river to determine the impact of acid mine drainage
  - Field tested a new method for removal of bacteria-induced iron oxide precipitates in groundwater wells
  - Participated in the implementation of a program of tracer addition, field sampling, and analysis to determine tidal mixing and dilution of a wastewater effluent in the San Joaquin Delta
- Staff Engineer, Dames & Moore; San Francisco, California.** 6/90 - 9/92
- Conducted hydraulic and hydrologic analyses and assisted design for water development projects; conducted water quality analyses for stormwater runoff, NPDES permitting, irrigation, and wastewater and industrial process water treatment facilities; provided design, cost estimate, and construction management services for remedial measures for reservoirs and a Superfund site.

## SUSAN C. PAULSEN

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### RESEARCH EXPERIENCE

- Ph.D. Thesis research**; California Institute of Technology, Pasadena, CA. 4/93 - 6/97  
The goal of this work was to delineate the distribution of chemical constituents and flow patterns in natural waters to understand and solve specific environmental problems. Conducted extensive sample collection within the San Francisco Bay-Delta System and within the streams and ocean of Oahu, with sample analysis by ICP-MS; established the elemental "signatures" of sources, selected tracers based upon conservative mixing demonstrated by laboratory and field work, and determined temporal and spatial variation of tracers.
- Research Engineer**, Fraunhofer Institute for Atmospheric Environmental Research; 1/89 - 4/89  
Garmisch-Partenkirchen, Germany (West).  
Researched, designed, and fabricated apparatus to sample, record, and analyze effects of pollutants in the ecosystem; designed and fabricated a chamber to control and measure the effects of plant exposure to atmospheric contaminants.

### TEACHING EXPERIENCE

- Teaching Assistant**, California Institute of Technology, Pasadena, California. 9/95 - 6/97  
*Hydrologic Transport Processes*. Delivered occasional lectures and conducted review sessions, provided individual instruction, graded problem sets and examinations.
- Fluid Mechanics*. Prepared materials, designed and conducted laboratory demonstrations, provided individual instruction, and graded problem sets for graduate level course. 9/93 - 6/94
- Instructor**, ASCE High School Outreach Program; San Francisco, California. 3/91 - 5/91  
Designed and taught a four-day interactive water resources unit to high school students.
- Instructor**, Technical Communications Program; Stanford University, Stanford, California. 9/89 - 6/90  
Taught public speaking course oriented toward professional speaking situations; lectured, demonstrated speaking styles, provided individual instruction, evaluated student speeches.

### HONORS

- Walter L. and Reta Mac Moore Fellowship (California Institute of Technology)  
Earle C. Anthony Graduate Fellowship (California Institute of Technology)  
Krupp Scholarship in Engineering (Germany)

### SELECTED PUBLICATIONS AND PRESENTATIONS

- Paulsen, S.C., E.J. List, and P.H. Santschi. Modeling variability in  $^{210}\text{Pb}$  and sediment fluxes near the Whites Point Outfalls, Palos Verdes Shelf, California. *Environmental Science & Technology* 33:3077-3085, 1999.
- Paulsen, S.C., E.J. List, and P.H. Santschi. Comment on "In situ measurements of chlorinated hydrocarbons off the Palos Verdes Peninsula, California." *Environmental Science & Technology* 33:3927-3928, 1999.
- Paulsen, S. C. and E. J. List. A study of transport and mixing in natural waters using ICP-MS: Water-particle interactions. *Water, Air, and Soil Pollution* 99:149-156, 1997.
- Paulsen, S. C. and E. J. List. Tracing discharges in ocean environments using a rare earth tracer. Presented at the 27th IAHR Congress, August 1997, San Francisco, California.
- Paulsen, S. C. and E. J. List. Delineation of estuarine mixing using elemental tracers and numerical modeling. In review.
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APPENDIX 13

Deposition of Jeff Killelea

July 20, 2010

p. 348

**In The Matter Of:**

*Copper Development Association, et al v.  
State of Washington, Dept of Ecology, et al*

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*Jeff Killelea*

*Vol. II*

*July 20, 2010*

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*Van Pelt, Corbett, Bellows*

*Court Reporters*

*401 Second Avenue South, Suite 700*

*Seattle, Washington 98104*

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**Min-U-Script®**

1 discharge.

2 Q And who made that -- who came up with the concept of using  
3 the secondary treatment TSS standard, the effluent  
4 guideline?

5 A I believe it was supported and considered by the previous  
6 permit writing group, and Bill Moore believed it to be  
7 appropriate and prudent in this case.

8 Q Do you know what kind of analysis or investigation Mr. Moore  
9 undertook to make that determination?

10 A No.

11 Q Do you know if he did anything to evaluate any scientific  
12 research or publications discussing the correlation between  
13 TSS and sediment contamination?

14 A No.

15 Q Do you know if anybody else on the permit development team  
16 or anybody that was assisting the development team,  
17 yourself, or Bill Moore, in drafting the permit?

18 A No.

19 Q You discussed yesterday ways in which listings could be  
20 removed from the 303(d) list. And the two you mentioned was  
21 the issuance of a TMDL, the approval of a TMDL, and the  
22 other was new sampling or additional sampling.

23 A In the second regard, additional sampling, that would not  
24 result in necessarily removal from the list but the  
25 development of a new list. The list is rereleased every

APPENDIX 14

Hearing Testimony of Jeff Killelea

February 2, 2011

pp. 36-40

BEFORE THE POLLUTION CONTROL HEARINGS BOARD

STATE OF WASHINGTON

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COPPER DEVELOPMENT ASSOCIATION, )	
INC., and the INTERNATIONAL COPPER )	
ASSOCIATION, LTD.; OLYMPIANS FOR )	
PUBLIC ACCOUNTABILITY; ARTHUR )	
WEST; PUGET SOUNDKEEPER ALLIANCE; )	
COLUMBIA RIVERKEEPER; THE BOEING )	
COMPANY; and GUNDERSON RAIL )	
SERVICES, )	
)	
Appellants, )	PCHB No. 09-135
vs. )	through
)	PCHB No. 09-141
STATE OF WASHINGTON, )	
DEPARTMENT OF ECOLOGY, )	
)	
Respondent. )	
)	
WEYERHAEUSER NR COMPANY, )	
)	
Intervenor. )	

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EXCERPT OF TRANSCRIPT OF PROCEEDINGS

TESTIMONY OF JEFF KILLELEA

February 02, 2011  
Tumwater, Washington

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KIM OTIS  
Certified Court Reporter  
Washington CCR No. 2342  
OLYMPIA COURT REPORTERS  
Certified Court Reporters  
P.O. Box 1126  
Olympia, Washington 98507  
(360) 943-2693

1 A That's correct.

2 Q I wanted to focus on the TSS provision for the 303(d)-  
3 listed waters. My notes are all over the place on  
4 this. First of all, I guess I'll first turn to  
5 Dr. Paulsen's prefiled testimony, and on page 42 of her  
6 prefiled testimony, I'll just read you the first  
7 sentence on paragraph 68, she says, "TSS is not a  
8 reliable indicator of the concentrations or loads of  
9 pollutants regulated by the sediment management  
10 standards in storm flows." Would you agree with that  
11 statement?

12 A I believe that there could be -- there's a relationship  
13 in that, all things being equal, where TSS is low, the  
14 other pollutants associated with sediment contamination  
15 would also be lower than they otherwise would have  
16 been, but there is not a perfect correlation or perfect  
17 understanding of, say, if TSS is exactly 30, how much  
18 PCBs or dioxin would correspond to that. It's highly  
19 site specific. An example is, say, the Yakima River  
20 had had problems with pesticides getting into the  
21 river, and rather than regulate agricultural fields for  
22 pesticides end of pipe, they regulated those facilities  
23 using turbidity as a surrogate to get at the pesticides  
24 and arsenic that was otherwise getting into the river.  
25 So there's this well-known relationship, if these

1 compounds adhere to soil and sediment and organic  
2 matter, so by controlling them, which you can do with  
3 conventional BMPs, you will also control the chemicals  
4 and compounds that stick to them chemically. But it's  
5 not a perfect relationship, but we believe it's a  
6 reasonable surrogate and a controllable parameter and  
7 far more cost effective to both permittee and Ecology.

8 Q It seemed to me like there was quite a significant  
9 difference between the prior permit regarding the  
10 concerns regarding discharges in 303(d)-listed waters,  
11 the concern had to do with sediment standards, and the  
12 current permit, and I'm just trying to find in my notes  
13 where I have the prior permit listed. First of all,  
14 while I am looking for that, Exhibit B-3 of the fact  
15 sheet on page 53, there is a reference to TSS level  
16 being based on best professional judgment. And is that  
17 what you just repeated to me, that it's not a perfect  
18 -- well, I'll let you answer that.

19 A Okay. So best professional judgment was applied, and I  
20 can explain a little bit more about the basis for that.  
21 It goes back to the fact that the previous permit did  
22 also apply total suspended solid sampling for  
23 discharges to sediment quality impaired waters. It,  
24 however, was a benchmark of 30 milligrams per liter.  
25 However, the statute changed between permit cycles and

1 we were required to change that from a numeric effluent  
2 limitation instead of just a benchmark, so this had  
3 already been an historical practice of using total  
4 suspended solids as a surrogate for sediment  
5 contamination. And it seemed that the alternatives  
6 were expensive pollutant specific monitoring, having  
7 consultants come out and sample for the  
8 pentachlorophenol or the dioxin end of pipe and also  
9 doing expensive sediment sampling end of pipe, which is  
10 not just TSS, it's actually putting elaborate  
11 catchments at the end of the pipe to catch the  
12 sediments and analyze them. And that would be, I  
13 think, very interesting and useful data, but not --  
14 it's very difficult to set a limit based on what you  
15 got there. And we needed to set a limit by a specific  
16 date in the statute. So with that big absence of  
17 information and data and the need to do multi-year  
18 studies in order to hone in on the precise number, we  
19 chose to stick with 30 milligrams per liter TSS.

20 Q And the 30 milligrams per liter TSS was based upon --  
21 wasn't that based upon wastewater, some sort of  
22 wastewater treatment standard?

23 A Its historical roots are that at a municipal wastewater  
24 treatment facility where they use detention basic  
25 settling to slow water down and allow things to settle

1 out of the water column, that 30 milligrams per liter  
2 is achievable and reasonable. It's more a  
3 technology-based standard. But we also believe it's  
4 appropriate in the absence of all the information, that  
5 it's an appropriate water quality based surrogate for  
6 the chemical compounds that can contribute to sediment  
7 quality contamination.

8 Q I just found where I was looking for I think in the  
9 previous permit, Exhibit P-5, if you could take a look  
10 at that, please. And I think it's on page 34. It's  
11 under the heading "Monitoring Requirements For  
12 Facilities Discharging to 303(d) Water Body Segments  
13 Listed For Sediments." And in that paragraph, it says,  
14 "Discharges that demonstrate TSS levels consistent with  
15 secondary treatment standards, 30 milligrams per liter  
16 monthly average not to exceed 45 milligrams per liter,  
17 are considered unlikely to violate sediment quality  
18 standards." And this is a monthly average under the  
19 previous permit; is that correct?

20 A Yes. I believe this portion of the paragraph is  
21 intended only to define what consistent attainment is.  
22 However, the benchmark itself was 30 milligrams per  
23 liter. And I've got to say that the permit is vague in  
24 exactly what their benchmark is, but that is what was  
25 applied on their discharge and monitoring reports, but,

1           yes, the secondary treatment standards for wastewater  
2           treatment plants is this 30-milligram-per-liter monthly  
3           average not to exceed 45 in a single sample.

4           Q    And so now switching to the current permit, the current  
5           permit is not a monthly average?

6           A    It's not a monthly average, it's a single value. Over  
7           30 would actually be a violation because it's over  
8           their limit, and we don't allow consistent attainment  
9           as an option for getting out of sampling for those  
10          parameters where there are numeric effluent  
11          limitations.

12          Q    That's all my questions for a moment.

13

14

EXAMINATION

15

BY MS. DOYLE:

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A    That's correct.

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25

Q    Do you have any information about what happened with  
those waivers under the previous permit; were they  
approved, denied, how long did it take, how

APPENDIX 15

Hearing Testimony of Jeff Killelea

February 1, 2011

pp. 43-53

BEFORE THE POLLUTION CONTROL HEARINGS BOARD

STATE OF WASHINGTON

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COPPER DEVELOPMENT ASSOCIATION,	)	
INC., and THE INTERNATIONAL COPPER	)	
ASSOCIATION, LTD.; OLYMPIANS FOR	)	
PUBLIC ACCOUNTABILITY; ARTHUR WEST;	)	
PUGET SOUNDKEEPER ALLIANCE;	)	
COLUMBIA RIVERKEEPER; THE BOEING	)	
COMPANY; and GUNDERSON RAIL	)	
SERVICES,	)	
	)	PCHB No. 09-135
Appellants,	)	through
vs.	)	PCHB No. 09-141
	)	
STATE OF WASHINGTON,	)	
DEPARTMENT OF ECOLOGY,	)	
	)	
Respondent.	)	
	)	
WEYERHAEUSER NR COMPANY,	)	
	)	
Intervenor.	)	

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HEARING TESTIMONY OF JEFF KILLELEA

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February 1, 2011  
Tumwater, Washington

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Randi R. Hamilton  
Certified Court Reporter  
Washington CCR No. 2260  
OLYMPIA COURT REPORTERS  
P.O. Box 1126  
Olympia, Washington 98507  
(360) 943-2693

1  
2 in the future or damage the property.

3 So in those cases, an operator could say, "It's not  
4 feasible to install treatment. However, we will  
5 employ aggressive operational source control that is  
6 likely to result in reduced concentrations that we  
7 believe will meet the benchmark."

8 Q Mr. Killelea, does Ecology have a plan for how the  
9 agency will deal with facilities that go through a  
10 level 3 corrective action and still are unable to meet  
11 benchmarks?

12 A Yes. A couple of things would happen. If, say,  
13 somebody triggered a level 3 based on last year's  
14 sampling data, they're required to install a level 3  
15 corrective action by September 30th of this year,  
16 September 2011. And then, say, 2012 they start  
17 sampling again, and they start exceeding the benchmark  
18 again for the same parameter.

19 The way the permit is written, they would still  
20 have to perform yet additional treatment BMPs with the  
21 goal of meeting that benchmark. That might be  
22 enhancing the existing treatment they've got  
23 installed. Sometimes that involves a pretreatment  
24 stage to reduce the sedimentation into the treatment  
25 structure. It might involve a polishing step after  
26 the treatment that they've installed. It might

1  
2 involve installing elaborate catch basin inserts  
3 before the water is all directed to a single treatment  
4 facility.

5 So that is the way the permit works. And then in  
6 addition to that, we have at our disposal the ability  
7 to order specific corrective actions in order to  
8 protect water quality. We can also order the operator  
9 to apply for and obtain coverage under an individual  
10 permit.

11 Q Mr. Killelea, I'd like to switch gears once again and  
12 talk about discharges into 303(d) impaired water  
13 bodies, if you could turn to the permit, Exhibit B-1,  
14 at page 32.

15 A (Witness complies.)

16 Q What is the effluent limit for discharges into a water  
17 body that is 303(d) listed for a sediment quality  
18 parameter?

19 A It is a benchmark of 30 milligrams per liter total  
20 suspended solids or TSS.

21 Q And you're able to state that by referring to footnote  
22 "e," correct?

23 A Yes, footnote "e":

24 (READING) A permittee who discharges to a water  
25 body 303(d) listed for any sediment quality parameter  
26 shall sample the discharge for TSS.

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Q How does that effluent limit for discharges into sediment impaired water bodies compare with -- well, let me ask first, was there a similar limit in the prior permit for discharges into sediment impaired water bodies?

A Yes, but the previous permit did not impose numeric effluent limitations. It only had a benchmark for those types of discharges, and it was also 30 milligrams per liter TSS.

Q How come Ecology decided to impose effluent limits instead of just benchmarks in the current industrial stormwater permit?

A Because a change to RCW 90.48.555 stipulated that the permit be modified to include appropriately derived numeric effluent limitations for discharges to water bodies that are 303(d) listed.

Q Mr. Killelea, could I ask you to grab Boeing Exhibit B-89.

A (Witness complies.)

Q What is Exhibit B-89, Mr. Killelea?

A It's a memo from Jim Pendowski, the program manager of Ecology's toxics cleanup program. It's written to the water quality program management team. It was presented at a team meeting on August 2nd, 2006.

Q Have you seen this memo before?

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A Yes.

Q What is the toxics cleanup program?

A Their mission is to clean up land and water that is contaminated with typically toxic substances.

Q And in this memo, the toxics cleanup program expresses some concern that the 30 milligram per liter limit for TSS may not be sufficient to maintain compliance with sediment management standards, and then they go on, on the second page, to offer three options for addressing the concerns the cleanup program has.

Did --

MR. TUPPER: Objection, Your Honor. The question from counsel mischaracterizes the statements in the document.

MS. MIX: Is your objection that it's leading or --

MR. TUPPER: Well, I don't know what the exact question is, but the characterization by counsel is completely contrary to the language in the document. It mischaracterizes the evidence.

MR. LAVIGNE: I don't think it does, but I'm happy to spend more time with Mr. Killelea on this document to address that concern.

MR. TUPPER: Well, specifically counsel said --

MR. LAVIGNE: I'll withdraw the question.

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MS. MIX: I don't think we need to go any further. I think he's going to reframe his questions and just break them up a little bit more.

Q (Continuing by Mr. Lavigne) Mr. Killelea, could you look at the bottom of page 1 of the document from TCP.

A Yes.

Q What, if anything, does that suggest to you about TCP's confidence that the 30 milligram per liter TSS limit would be protective of sediment management standards?

A The TCP did not think that these permit requirements are sufficient to maintain compliance with the sediment management standards.

Q And could you please turn to page 2 of the document.

A (Witness complies.)

Q Does TCP offer any options in this document to address the concern we just talked about?

A Yes. The toxics cleanup program proposed that we work together to find a solution, and they laid out three different options for addressing discharges to sediment quality impaired waters.

Q Did the industrial stormwater permit implement one of the suggested three options?

A Yes. We used option 1 except that rather than it just being monitoring against a benchmark, we imposed it as

1  
2 a numeric effluent limitation.

3 Q And did the 30 milligrams per liter stay as an average  
4 limit, as it was in the prior permit, or did it change  
5 in the current permit?

6 A It is imposed as a single value. So if any single  
7 value is over 30, that would be considered a  
8 violation.

9 I should add that we also imposed additional  
10 narrative effluent limitations in the form of catch  
11 basin cleaning, sweeping, catch basin inserts to  
12 control erosion in sediment-laden areas. So there was  
13 a combination of narrative effluent limitations, plus  
14 the numeric effluent limitation of 30.

15 Q And why didn't Ecology implement either option 2 or  
16 option 3 from the memo from the toxics cleanup  
17 program?

18 A Option 2 is basically a tiered monitoring approach.  
19 It's basically a study, a study of the effect of  
20 industrial stormwater discharges on these sediment  
21 impaired water bodies such as the Lower Duwamish. And  
22 it was a three-year study. There was no solution here  
23 for deriving a numeric effluent limitation within the  
24 time frames we needed to do it in.

25 Then option 3 was basically a variation on the  
26 study proposed in option 2 with some partial Ecology

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TCP funding.

Q Did the water quality program have any concerns about the cost of monitoring in the options 2 and 3 proposed by the toxics cleanup program?

A Absolutely. The costs to the permittees would be extraordinary. They would be in the orders of thousands or tens of thousands of dollars to collect sediment data, set up elaborate sediment sampling devices and perform chemical-specific monitoring that would probably require consultants to do most of the sample collection and lab analysis. So an extremely burdensome and expensive collection effort, basically a research project.

And then Ecology would also have a burdensome expense to evaluate the data and make sense of it. And then at the end of the day, we don't have the numeric effluent limitations within the time frames we needed to impose them.

Q Why did Ecology believe it was appropriate to stick with sort of a modified version of the 30 milligram per liter TSS limit in the prior permit?

A The types of pollutants and contaminants that are responsible for sediment quality impairments are things like PCBs, hydrocarbons, phthalates, pesticides, dioxins, and these pollutants have an

1  
2 affinity for sediment, for soil sediment, minerals,  
3 organic matter, on land surface.

4 So Ecology concluded that if there's aggressive  
5 sediment control on the industrial facility that  
6 reduces the sediment loading from the facility, it's  
7 going to also capture these pollutants that get  
8 chemically adsorbed to the sediment particles on the  
9 site during a stormwater event, and all things being  
10 equal, low levels of sediment being discharged from  
11 the site will also result in low levels of those  
12 pollutants being discharged.

13 Q Mr. Killelea, I'd like to turn to the limit in the  
14 permit for discharges to water bodies impaired by  
15 fecal coliform, so we'll need Exhibit B-1 again.

16 And do you have handy the excerpt from the water  
17 quality standards I left at the table earlier?

18 A Yes.

19 Q What is the effluent limit for discharges into water  
20 bodies that are 303(d) listed for fecal coliform?

21 A Well, because the water quality standards have  
22 different concentrations of bacteria for different  
23 types of water bodies, we simply referred to the water  
24 quality standards in footnote "h": The limit is the  
25 water recreation bacteria criteria applicable to the  
26 receiving water body.

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2 Q And if you could pull out the excerpt I left at the  
3 witness table this morning, the first page under  
4 WAC 173-201A-200, could you identify what that refers  
5 to.

6 A That is the water contact recreation bacteria criteria  
7 in fresh water.

8 Q And if you could turn to the next page -- and it's  
9 actually going to be the bottom of page 15, top of  
10 page 16 -- what are the fecal coliform limits in the  
11 water quality standards and thus the ones you  
12 incorporated into the permit?

13 A For extraordinary primary contact recreation, the  
14 limit is a geometric mean value of 50 colonies per  
15 100 milliliters with no more than 10 percent of the  
16 samples obtained exceeding 100 colonies per  
17 milliliter.

18 For primary contact --

19 Q Before you get there, Mr. Killelea, what about if a  
20 permittee takes less than 10 samples; do the  
21 regulations address what the fecal coliform limit is  
22 if there are less than 10 samples taken?

23 A Yes. If there's less than 10 but more than one, the  
24 geometric mean would need to not exceed 50 colonies  
25 per 100 milliliters. But any single sample cannot  
26 exceed 100 colonies per 100 milliliters.

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Q And is it the same structure -- and I don't know that we need to go through the details. Is it the same structure for the primary contact recreation?

A Yes, it is.

Q And if you could turn to the page that's numbered 21, it's not 21 pages in the document, but the page that's numbered 21 --

A Yes.

Q -- and the subsection (b) down at the bottom, is that the recreation bacteria criteria for marine waters?

A Yes, it is.

Q And on the next page is another chart from the standards. Is the structure of the fecal coliform standards for marine waters similar to what you just discussed for fresh waters?

A Yes, it is.

Q And this permit requires permittees to take how many samples a quarter to monitor their compliance with the fecal coliform limit?

A One.

Q Why did Ecology decide to use the water recreation criteria for regulating discharges into 303(d) listed waters for fecal coliform?

A Because that is the primary beneficial use of most receiving waters in Washington state, and they're

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identified in tables, and it can be easily identified and applied on a site-specific basis.

Q Mr. Killelea, I'd like to switch gears once more and talk about monitoring. It's condition S4 at page 21 of the exhibit, which again is Exhibit B-1.

A Okay.

Q What is the required monitoring frequency under the industrial stormwater permit?

A It is at least once per quarter.

Q And how does that frequency compare to what was in the prior version of the industrial stormwater permit?

A It's identical.

Q Why did Ecology elect to maintain quarterly monitoring?

A That's been standardized since 2002, and Ecology has invested a huge amount of time and energy and training resources to get permittees to sample their discharges at least once per quarter.

It's also the frequency of sampling in EPA's multisector general permit, and I'm not aware of any other states that have a different frequency. That is just a standard sampling frequency that's appropriate for industrial stormwater, and we wanted to continue the efforts and the inertia that we've got training permittees, and our compliance is gradually