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ATTORNEY GENERAL'S OFFICE
Ecology Division

BEFORE THE POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

ASSOCIATED GENERAL CONTRACTORS OF WASHINGTON, BUILDING INDUSTRY ASSOCIATION OF WASHINGTON, SNOHOMISH COUNTY, AND PUGET SOUNDKEEPER ALLIANCE, Appellants, and ASSOCIATION OF WASHINGTON BUSINESS, Intervenor, v. STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, Respondent.	PCHB NO. 05-157 PCHB NO. 05-158 PCHB NO. 05-159 (Consolidated) FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

This appeal involves the regulation of stormwater runoff from construction sites pursuant to the Federal Water Pollution Control Act, commonly known as the "Clean Water Act" (CWA), 33 U.S.C. §1251 *et seq.* and the state Water Pollution Control Act, (WPCA), Chapter 90.48 RCW. In this consolidated appeal, Associated General Contractors of Washington and Building

Industry Association of Washington (AGC/BIAW), Snohomish County (County), and Puget Soundkeeper Alliance (PSA) challenge the validity of the Department of Ecology's (Ecology) Construction Stormwater General Permit issued on November 16, 2005. Association of Washington Business (AWB) was granted intervenor status in this matter, but did not participate in the hearing.

A hearing was held before the Pollution Control Hearings Board (Board) on February 1, 2, 5, 6, 7, and March 5, 2007. AGC/BIAW was represented by James A. Tupper, Jr. The County was represented by Thomas M. Fitzpatrick. PSA was represented by Richard A. Smith. Ecology was represented by Ronald L. Lavigne. The Board was comprised of William H. Lynch, Chair, Kathleen D. Mix, and Andrea McNamara Doyle. Administrative Appeals Judge, Kay M. Brown, presided for the Board. Randi Hamilton and Kim L. Otis of Gene Barker and Associates of Olympia, Washington provided court reporting services.

OVERVIEW OF THE CASE

The 2005 CSGP is a forty-six page permit including seven pages of definitions, one page of acronyms, twenty-five pages of special conditions (S1 through S10) and nine pages of general conditions (G1 through G26). The three appellants in this matter, collectively, challenged almost all of the special conditions in the permit and some of the general conditions. The pre-hearing order entered in the case identified 36 issues for resolution by this Board. Many of these issues were resolved through motion practice prior to the hearing.[1] At the time of the hearing, 13

[1] See orders on partial summary judgment motions in these consolidated appeals issued on October 26, 2006, November 27, 2006, January 4, 2007 and January 30, 2007.

specific issues remained in the case, involving conditions S4 (Monitoring Requirements), S8 (Discharges to 303(d) or TMDL Waterbodies), and S9 (Stormwater Pollution Prevention Plans (SWPPPs)). In addition, two remaining umbrella issues challenged whether the permit required achievement of water quality standards and implementation of all known, available and reasonable methods of prevention, control, and treatment (AKART) of construction stormwater discharges.

Based on the six days of sworn testimony of witnesses, more than fifty exhibits submitted into the record, and argument from counsel representing each of the four parties that participated in these consolidated appeals, and having fully considered the record, the Board enters the following decision:

SUMMARY OF THE DECISION

The Board concludes that the CSGP, with the minor modifications directed by this decision, ensures compliance with water quality standards and requires the use of AKART. The permit term allowing use of transparency tubes for testing water discharge samples for sites smaller than five acres, but prohibiting their use on larger sites is reasonable, supported by study and the need for practical applications in the field. The Board also affirms the benchmark for turbidity (25 NTU), and the related 250 NTU adaptive management trigger, but concludes the correlating transparency value for the 25 NTU measurement should be 33 cms, not 31 cms.

The Board concludes that the CSGP provisions that establish timelines for responses to inspections and monitoring, the frequency of inspections, and the frequency of sampling are all appropriate and reasonable, and should be affirmed. The Board directs that clarifying language

be added to the permit that an extension of the 10 day timeline for implementation of treatment BMPs can be provided by Ecology if it is not feasible for the permittee to install appropriate treatment BMPs within 10 days. The Board also affirms the timeframes for soil stabilization, although extraneous language regarding adjustments to the timeframes by local jurisdictions should be removed from Condition S9.D.5 of the permit.

The Board affirms the permit requirement that pH monitoring be used on sites with concrete pours of 1000 cubic yards or greater, given the data available at this time, but modifies the language in Condition S4.D.1 to clarify when the pH monitoring period should begin, and how long such monitoring should continue.

The Board affirms the numeric effluent limitation for turbidity that the permit applies to discharges into impaired waterbodies. The provision is reasonable because it is based on Ecology's determination that when a prior discharge from a site has been shown to exceed water quality standards, a reasonable potential exists that future discharges from that site into an already impaired water body may also cause or contribute to exceedances of water quality standards.

Finally, the Board concludes that allowing the use of turbidity testing as a surrogate for phosphorus is reasonable, given the relationship between sediment and phosphorus, and the lack of other practicable testing and treatment alternatives for phosphorus. The Board also concludes that the issue of control of other pollutants in stormwater discharges from construction sites is adequately addressed by Condition S9.D.9.

FINDINGS OF FACT

A. History of the CSGP

1.

Ecology issued the 2005 CSGP challenged in this appeal on November 16, 2005, with an effective date of December 6, 2005, and an expiration date of December 16, 2010. The CSGP is both a National Pollutant Discharge Elimination System (NPDES) permit, as required by the federal CWA and a State Waste Discharge General Permit issued pursuant to the Washington State Water Pollution Control Act (WPCA), Chapter 90.48 RCW. It is a statewide general permit designed to provide industry wide coverage for discharges of stormwater associated with construction activity within Washington. *Testimony of Killelea, Exs. 1, 2 and 3.*

2.

The CSGP is the fourth construction general permit issued in Washington. Ecology developed the first permit, issued in 1992, in response to the Environmental Protection Agency's (EPA's) "Phase I" rules, which required that construction sites with five or more acres of disturbed soils be covered under an NPDES permit. The first general permit covered discharges from both industrial and construction activities. It was a best management practices (BMP) based permit, and required applicants to prepare Stormwater Pollution Prevention Plans (SWPPPs) for all covered sites. It did not require water quality monitoring. Ecology issued the second permit in 1995, and at that time separated the industrial and construction activities into two separate permits. On October 4, 2000, Ecology issued the third CSGP. The 2000 permit,

which was substantially the same as the prior permits, did not require water quality monitoring. It was appealed to the Board. *Testimony of Killelea, Exs. 1, 2 and 3.*

3.

The parties reached a settlement prior to hearing on the 2000 CSGP.[2] The settlement agreement required Ecology to rewrite and reissue the permit with assistance from a public advisory committee. The advisory committee was comprised of business representatives, environmental organizations, and state, local, and tribal agencies. The 2005 CSGP at issue in this appeal was developed through a collaborative process with this advisory committee. *Testimony of Killelea, Exs. 1, 2 and 3.*

4.

One significant difference between the 2000 CSGP and the 2005 CSGP is the change in the scope of construction activities subject to the permit. This change was made in response to EPA's "Phase II" stormwater rules, which require that construction sites with less than five acres of disturbed soils, but greater than one acre, be covered under the NPDES permit process. *See* 40 C.F.R. 122.26(b)(14)(x) and (15). *Testimony of Killelea and Exs. 1, 2 and 3.*

5.

The lead permit writer for Ecology, Jeff Killelea, is Ecology's technical lead on erosion and sediment control on construction sites. Mr. Killelea has a Masters degree in forestry, and prior experience in land reclamation regulation. Mr. Killelea led the team at Ecology that drafted

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[2] The Board did issue two orders prior to the parties reaching a settlement. See Puget Soundkeeper Alliance Waste Action Project v. Ecology, (Order Granting Partial Stay (Aug. 29, 2001) and Order on Motion for Summary Judgment (Aug. 29, 2001).

the CSGP. In addition to Mr. Killelea, the team consisted of Ecology's lead water quality inspectors from each of its five regional offices, and Ecology's water quality section manager. *Testimony of Killelea and Craig.*

B. Overview of CSGP Requirements

6.

All operators of construction sites which discharge stormwater to surface waters of the state, and either disturb greater than one acre, or disturb less than one acre but are part of a larger common plan of development or sale, are required to apply for coverage under the CSGP. *Ex. 1, p. 4, 5 (S1)(Permit coverage).* Depending on the timing of work on the site, and certain site specific factors, sites less than five acres may qualify for a waiver from the permit. *Ex. 1, p. 8, 9 (S2.C)(Erosivity Waiver).* To obtain permit coverage, the applicant must submit an application, referred to as a Notice of Intent, within certain time frames set out in the permit. For new or previously unpermitted sites, the CSGP contains public notice requirements. *Ex. 1, p. 6, 7 (S2.A and B)(Permit Application Forms, Public Notice).*

7.

A central component of the CSGP is the Stormwater Pollution Prevention Plan (SWPPP). *Ex. 1, p. 21-29 (S9)(SWPPP).* The contractor must prepare and implement the SWPPP beginning with initial soil disturbance. The SWPPP must identify which BMPs the operator has chosen to use at the site. *(S9.B).* It must also include the technical basis for those BMPs if the BMPs are from a source other than Ecology's Stormwater Management Manual or another equivalent manual approved by Ecology. *(S9.C).* The SWPPP must have a narrative section

addressing twelve elements required by the permit, absent a site specific exemption. *(S9.D).* One such element requires the maintenance and repair of the BMPs to assure their continued performance. *(S9.D.11).* The SWPPP must also include a vicinity map, and a site map. *(S9.E).*

8.

Another key component of the CSGP is the monitoring conditions, which include inspection and water quality sampling and analysis requirements. *Ex. 1, p. 10-15 (S4)(Monitoring Requirements).* Contractors at all sites covered by the CSGP, regardless of size, are required to make weekly site inspections. The CSGP also imposes turbidity and transparency sampling requirements, varying in method and starting date, depending upon the amount of soil disturbance on the site. *(S4.Table 3).* The permit also requires sampling for pH on sites where there is significant concrete work or use of engineered soils. *(S4.D).* The CSGP sets out recording requirements for site inspections, and training and certification requirements for the person performing the inspection (referred to as a Certified Erosion and Sediment Control Lead (CESCL)). *(S4.B).* Finally, the CSGP establishes a narrative effluent limitation, in the form of a numeric benchmark for turbidity and/or transparency which, if exceeded, requires the CESCL to undertake responsive actions within prescribed time frames. *(S4.C.5).*

9.

Discharges to water bodies listed as impaired by Ecology or subject to Total Maximum Daily Load (TMDL) limits are subject to special sampling requirements. *Ex. 1, p. 18-21 (S8)(Discharges to 303(D) or TMDL Waterbodies).* The CSGP provides that if a single sampling event establishes a discharge into a 303(d) listed waterbody that exceeds the state water

quality standard for turbidity, the discharger shall then comply with a numeric effluent limitation equal to the state water quality standard's numeric criteria for turbidity. *(S8.B.2).*

C. Challenged Provisions of the CSGP

1. Condition S4: Monitoring.

10.

The primary environmental concern with construction stormwater is the sediment that it carries from construction sites into receiving waters. There are three related characteristics that can be measured to assess the sediments in stormwater. One characteristic, total suspended solids (TSS), is a direct measurement of the amount of suspended sediment in a water sample. TSS measurement involves quantifying the mass of solids retained on a filter following filtration of a known quantity of stream water, resulting in a measurement stated in milligrams per liter. This method must be performed in a laboratory. *Testimony of Graves, Alongi, Horner and Karr, and Exs. 2, 8 and 29.*

11.

A second characteristic that can be measured to assess sediments in stormwater is turbidity. Turbidity is a measure of light scatter from materials in a water sample. Turbidity is an indicator of suspended solids, but not a direct measurement of the amount or concentration of materials in water. Turbidity measurements are affected by the size and angularity of particles that are present in the sample. Turbidity is measured through the use of a nephelometer,

commonly referred to as a turbidity meter.[3] The turbidity meter is based on technology that passes light through a sample of water and then uses a photoelectric cell to measure the strength of that light through the sample. The meter then interprets the data into a turbidity reading. The turbidity meter produces a measurement in nephelometric turbidity units, or NTUs. The higher the NTU value measured, the more turbid the water. Turbidity measurement can be performed in the field using a field turbidity meter. *Testimony of Graves, Alongi, Horner and Killelea, Exs. 2, 8, 29, 43 and 48.*

12.

A third sediment-related characteristic that can be measured is transparency. Transparency is measured using a portable clear plastic tube 60 cms (cm) in length. It has a drain tube and valve, and cm markings along the side. At the bottom of the tube is a black and white disk. To measure water clarity, the tube is filled with a water sample. Then, the tester looks down into the tube, while water is slowly released through the valve until the disc at the bottom becomes visible. The depth of the water column at which the disc is visible, measured in cms (cm), indicates the transparency of the water. In contrast with the turbidity meter, the higher the cm value measured, the more transparent (*i.e.*, less turbid) the water. *Testimony of Graves, Alongi, and Horner, Exs. 8, Ex. 29, 43, 48 and 49.*

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[3] Some of the witnesses and exhibits use the term "turbidimeter" instead of "turbidity meter." The CSGP uses the term turbidity meter, and therefore that term is used in this decision. *See Ex. 1, p. 10.*

13.

Condition S4 requires sites with five or more acres of soil disturbance to perform weekly discharge sampling using a calibrated turbidity meter (effective October 1, 2006). Beginning October 1, 2008, sites with between one and five acres of soil disturbance must also conduct weekly discharge sampling, but these sites may choose whether to use a turbidity meter or transparency tube to measure the quality of the sample. The weekly sampling is required when there is a discharge of stormwater. *Ex. 1, p. 10 (S4).*

14.

The field turbidity meter has been in use for decades and is a scientifically valid way to measure the turbidity of a water sample. A turbidity meter costs between $875 and $2000. A study published by Ecology in August of 2005 established a high degree of correlation between field turbidity readings and laboratory turbidity readings. Turbidity meters do require calibration. The meters come with instructions that detail how to calibrate the machine and how frequently calibration must be performed. While there is some evidence that turbidity meter readings may vary slightly based on the type of turbidity meter, this potential variability does not affect the validity of the turbidity meter for field measurements of water turbidity. When used properly by someone with training on their use they provide an accurate measurement of turbidity in water samples. *Testimony of Lubliner, Alongi, and Horner, Ex. 4, 7, 8, 13, 22, and 27.*

15.

The transparency tube is a simple and economical way to quantify the measurement of water clarity. A transparency tube costs about $35, and requires little maintenance because calibration is unnecessary. The most frequent operator errors in the use of the tube are letting the water out of the tube too quickly, and not closing the valve quickly enough when the disc can first be seen. The results of these types of errors is an understatement in the clarity of the water. Variations in ambient lighting conditions may also affect the accuracy of readings with this device. Ambient light that is too dim can interfere with the operator's ability to see the disc, which would generally result in an understatement in the clarity of the water. High ambient light, however, can lead to an overstatement in clarity. *Testimony of Alongi, Horner, and Killelea, Ex. 2, Ex. 4, Ex. 29, 43, 48 and 49.*

16.

In order to measure the clarity of a water sample with a transparency tube, and then use this information to calculate the turbidity of the sample, it is necessary to determine a relationship between the two measurements. The August 2005 Ecology study demonstrated a consistently high correlation between transparency tube readings and turbidity meter readings in the turbidity range between 12 NTUs and 250 NTUs. In other words, transparency tube readings can be a valid surrogate for turbidity measurements in the field at certain levels. The Ecology study was limited to a four county area of Western Washington, and the correlation between the two testing devices may vary in other areas to a greater or lesser degree. However, the Board finds that based on studies completed, the transparency tube is a reasonable alternative to a

laboratory or portable turbidity meter for businesses facing financial or logistical limitations, such as small construction businesses that are subject to the CSGP. *Testimony of Alongi, Killelea, and Lubliner, and Exs. 2, 8, 27, 28, 29, 30, 43, and 49.*

17.

The data from the Ecology study establishes that a reading of 25 NTUs corresponds to a transparency reading of 33 cm. The turbidity calculation has a standard deviation of 2.5 NTUs, which Ecology also applied directly to the corresponding transparency value when it adjusted the transparency benchmark from 33 to 31 cm. It is incorrect statistical methodology, however, to apply the standard deviation for the turbidity value (which is in NTUs) directly to the related transparency value (which is in cms). Ecology admitted the benchmark for transparency should be set at 33 cm. *Testimony of Horner, Killelea, Lubliner, Exs. 1, 3, 8 and 27.*

18.

Many factors affect the amount and turbidity of discharges from construction sites. These factors include the amount of water on the site, the type of soil, the slope on the site, the amount of vegetation, and construction practices. However, a key factor contributing to the turbidity of discharges is the amount of disturbed soils. Because smaller sites by definition have less disturbed soils, they will generally have less impact on water quality. The smaller site operators as a whole are also less familiar with discharge permitting and water quality sampling since they have not been subject to NPDES or state waste discharge permits in the past. *Testimony of Killelea, Horner, and Slavik, and Exs.2, 3, and 43.*

2. Conditions S4 and S9: Timelines for responses.

19.

The permit sets out a timeline for responding to the results of visual inspections, discharge monitoring, and other site inspections or investigations. If stormwater discharge problems are identified as a result of any of these activities, the permittee must "Fully implement and maintain appropriate *source control* and/or *treatment BMPs* as soon as possible, but no later than 10 days of the [triggering event]." *Ex. 1 (S4.B.1.b Inspections; S4.C.5a.ii and S4.C.5.b.ii Discharge monitoring; S9.B.2.b Inspections or investigations).*

20.

"Source control BMPs" are defined in the permit as "physical, structural or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater." *Ex. 1, Appendix A – Definitions.* Examples of source control BMPs listed in the permit are erosion control practices, maintenance of stormwater facilities, construction of roofs over storage and working area, and directing wash water and similar discharges to sewers or a dead end sump. Source control BMPs can generally be fully implemented within 10 days. *Testimony of Alongi and Exs. 1, 2 and 3.*

21.

The CSGP requires sediment source control BMPs, such as sediment ponds, traps, and filters, to be constructed as one of the first steps in grading. These types of BMPs must be functional before other land disturbing activities take place. *Testimony of Killelea and Ex. 1, p. 24 (S9.D.4).*

22.

"Treatment BMPs" are defined in the permit to mean "BMPs that are intended to remove pollutants from stormwater." Examples of treatment BMPs listed in the permit are detention ponds, oil/water separators, biofiltration, and constructed wetlands. *Ex. 1, Appendix A – Definitions*. Other examples of less-sophisticated treatment BMPs include sediment ponds, traps, silt fencing, check dams, and straw waddles. Technology-based systems that are considered treatment BMPs include polymer addition, sedimentation tanks, pressure filters, and electrocoagulation units. Some of the less-sophisticated treatment BMPs could be implemented very quickly, but many of the more-sophisticated and technology-based systems could require more than 10 days to fully implement, even if the necessary engineering, design, and/or permitting had been previously completed. Although these types of advanced BMPs are most likely to be installed at the outset of a project, situations can and do arise where they need to be installed later in response to unanticipated circumstances or changed site conditions. *Testimony of Killelea, Alongi, Craig, and Horner, and Exs. 1, 2, 3, 10, 11 and 12.*

23.

In a situation where discharges from a construction site exceed the permit benchmark, and interim measures fail to address the problem, Ecology expects the operator to notify Ecology that more time is needed to install more sophisticated treatment BMPs. However, even if the operator notifies Ecology, and the agency agrees that an extension is reasonable and appropriate under the circumstances, the operator will still technically be in violation of the permit as the

permit does not provide an exception to the ten day implementation requirement. *Testimony of Killelea, Alongi, Craig and Horner, and Exs. 10, 11 and 12.*

24.

Some individual NPDES permits, such as the permit issued to Washington State Department of Transportation in 2006 for construction work on highway SR 539, provide that if there is an exceedance of the turbidity benchmark, the permittee is required to cease all work that exposes any additional soil surface in the area contributing to the discharge, except for work that improves source control or treatment BMPs. *Ex. 24, p. 13 (S3.D.4).* The CSGP does not contain this type of limitation. A prudent operator, however, when faced with on-going discharges exceeding the benchmark for turbidity, would be unlikely to continue exposing more soil until the existing discharge was brought under control. *Testimony of Killelea and Horner and Ex. 24.*

3. Condition S4.B.2: Frequency of site inspections.

25.

Condition S4.B.2 provides:

> The site inspections shall be conducted at least once every *calendar week* and within 24 hours of any discharge from the site. The inspection frequency for temporarily stabilized, inactive sites may be reduced to once every calendar month.

Ex. 1, p. 11 (S4.B.2).

26.

The permit term that requires a one-time per month inspection of inactive, temporarily stabilized sites originated with EPA's construction stormwater general permit. A temporarily stabilized site would typically have erosion under control, and monthly inspections would verify

that conditions on the site remained stable. However, such a site may have BMP failures that would require corrective action due to rain or storm events, animal disturbances of sediment barriers, disruption or disturbance of siltation fences and gravel bags, and similar situations. Ecology anticipates, but the permit does not require, that operators will continue to perform weekly inspections of temporarily stabilized inactive sites during wet weather or after major storm events. *Testimony of Horner and Killelea, and Ex. 3.*

4. Condition S4.C.2: Sampling Frequency.

27.

Condition S4.C.2 requires weekly sampling when there is a discharge from the site. Sampling is not required outside of normal working hours or during unsafe conditions. Samples must be representative of the discharge. *Ex. 1, p. 12 (S4.C.2).*

28.

PSA's expert, Dr. Horner, opined that the sampling frequency was not adequate because it would not yield a sufficient number of samples taken in a sampling pattern that would provide a representative sample. He testified that the sampling frequency schedule of the CSGP ruled out two-thirds of the working week, plus weekends and holidays. In Dr. Horner's opinion, obtaining the first three samples in the week, and the first six in the month would provide a more rounded picture of the effectiveness of site BMPs. Dr. Horner also contended that more sampling during a storm event is important because the first flows often yield more pollutants. This happens because pollutants are often lying on the site and waiting to be entrained and

moved off the site. His suggested storm sampling schedule would be during the first hour and then once every three hours until the working day ends or the storm ends. *Testimony of Horner.*

29.

The term "representative sample" is a term of art with a specific meaning in the water quality field. Literature on stormwater pollution control describes how to collect a representative sample under EPA permits. *Testimony of Horner.*

5. Condition S4.C.5: Turbidity/Transparency Benchmark.

30.

Condition S4.C.5 establishes the benchmark value for transparency/turbidity in stormwater being discharged from a site, a key requirement of the 2005 CSGP: A benchmark is an indicator value used to determine the effectiveness of BMPs on site. Exceedances of the benchmark are not permit violations. Exceedances of the benchmark do, however, trigger steps the permittee must take to be in compliance with the permit. *Testimony of Killelea and Exs. 1, 2 and 3.*

31.

The permit establishes a turbidity/transparency benchmark value of 25 NTU/31 cms. If discharge turbidity exceeds 25 NTUs, but is less than 250 NTUs, or if discharge transparency is less than 31 cms, but greater than 6 cms, the CESCL must review the SWPPP, revise if necessary, and implement appropriate source and/or treatment controls. If another sample again exceeds the 25 NTU benchmark (or falls below the 31cm), the same steps are required. If discharge turbidity equals or exceeds 250 NTUs (or if discharge transparency is less than or

equal to 6 cms), the permittee must notify Ecology by telephone. Sampling must then be continued daily until one of the following happens: the discharge meets the 25NTU/31cm benchmark , the CESCL demonstrates compliance with the turbidity water quality standard, or the discharge stops. *Testimony of Killelea and Ex. 1, p. 13-14 (S4.C.5).*

32.

During the winter wet seasons of 2003-04, and 2004-05, Ecology collected data from construction sites in four counties of Western Washington in an effort to characterize stormwater discharges from these sites. Of 183 construction sites visited, only 44 (24%) were discharging runoff at the time of the visit (six of which were discharging directly into receiving water bodies). Ecology attributes the low incidence of sites discharging stormwater offsite during field sampling visits, in part, to lower than normal rainfall, permeable soils, and the use of water quality BMPs. It can also be attributed to the variable and intermittent nature of stormwater discharges, which makes it difficult to time sampling visits to coincide with stormwater discharge events. *Testimony of Killelea and Exs.7, 8 and 9.*

33.

The data collected by Ecology showed a wide range of water quality in discharges from construction sites. Approximately 80% of the sites had discharge turbidity ranging from 2.3 to 200 NTU. The median, or middle number, of the turbidity range for the construction site discharges was 29 NTU/27 cm. The average of all of the discharges was 69 NTU/31 cm. Twenty-nine percent of the samples exceeded 50 NTUs. Ten percent of the discharges (the 90 percentile) had a turbidity rate higher than 194 NTU. Two of six construction sites with

documented discharges directly into receiving water bodies were in violation of the state numeric water quality criterion for turbidity. The median value is commonly used for stormwater because it depicts a central tendency, or what a sample is most likely to show. This is preferred over the mean because the distribution of values can be very different. *Testimony of Lubliner, Killelea, and Graves, and Exs. 7, 8 and 9.*

34.

The 2005 CSGP went into effect in mid-December, 2005. The turbidity sampling requirement for sites with five or more acres of disturbed soil, however, went into effect October 1, 2006. *Ex. 1, p.10 (S4, Table 3).* Effective October 1, 2006, these sites were also required to file a monthly discharge monitoring report, whether or not they had any discharge. *Ex. 1, p. 15 (S5.B).* During October and November, 2006, less than fifty percent of the permitted construction sites (404 out of 1166), filed the required reports. Of the sites reporting, a majority of the sites reported either no discharges, or discharges less than 25 NTU. November, 2006 was one of the wettest Novembers on record in Washington State. *Testimony of Killelea and Ex. 57.*

35.

In general permits for other industrial sectors, Ecology has established both benchmarks and numeric effluent limits for turbidity. The 2005 Sand and Gravel general permit (modified in 2006) contains no benchmark value for turbidity, but instead established a 50 NTU numeric effluent limitation. The 2002 Industrial Stormwater General Permit (modified in December 2004), established a 25 NTU benchmark. A recent individual construction stormwater permit, issued to the Department of Transportation on March 28, 2006, for a highway construction

project in Bellingham and Whatcom County, established a benchmark for turbidity of 25 NTU and a numeric effluent limit of 50 NTU. *Testimony of Killelea and Graves, Ex. 23, 24 and 56.*

36.

The State of Oregon also uses a statewide construction stormwater general permit with a turbidity benchmark, although its regulatory approach differs from Washington's in many ways.[4] Oregon's permit, which was recently revised, contains a turbidity benchmark of 160 NTUs. This benchmark was established using a dilution factor of 5:1 to account for an amount of dilution that is assumed will occur once the discharge enters the receiving water. Washington's benchmark does not include a dilution factor. *Testimony of Killelea, Ex. 14.*

37.

The vast majority of streams are small. The small volume of water and the small area to which the streams extend make them susceptible to sedimentation problems. Construction activity can affect the hydrology of a stream, which can affect the biology of the streams. *Testimony of Karr.* Ecology was assured that only a minimal amount of dilution is available at construction sites. One way Ecology has estimated the amount of dilution available in a small stream is to multiply the width of the stream by three. Ecology believed that it would be very

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[4] For example, Oregon places more emphasis on the initial application and public review stage of the permitting process, while Washington favors a monitoring and inspection protocol. Under the Oregon general permit, operators must submit with their application for coverage an Erosion and Sediment Control Plan (ESCP), which is the equivalent of Washington's SWPPP. The ESCP is then subject to public notice and comment and must be approved prior to coverage. Washington does not require the SWPPP to be submitted or approved as part of the application for coverage.

difficult to identify a standard dilution factor for this general permit. *Testimony of Killelea; Ex. 20.*

38.

The surface water quality standards for Washington provide that turbidity shall not exceed five NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a ten percent increase in turbidity when the background turbidity is more than 50 NTU. WAC 173-201A-030. Based on data from the Ecology database, typical background concentrations for turbidity in Western and Eastern Washington is 3.8 NTU. During storm events, when both flow and sediment levels in receiving waters increase, the background turbidity is likely higher, possibly as high as 20 NTU. *Testimony of Killelea and Exs. 8 and 9.*

39.

Ecology established the 25 NTU benchmark by relying on the best professional judgment of the senior Ecology inspectors comprising the agency's permit development team. The team considered available scientific data, water quality criteria, and technological factors, as well as their collective professional experiences as inspectors in concluding that the 25 NTU benchmark value represented both a protective and an achievable turbidity level for a stormwater discharge from construction sites. They considered typical background conditions at covered construction sites, including the types of small streams and wetlands commonly affected by construction activity; the effects of turbidity on beneficial uses of receiving waters, including both habitat impacts and impacts on salmonids and other aquatic biota; and the effectiveness of typical BMPs at well-managed construction sites with appropriate BMPs in place. They also took into account

the increased flow and turbidity present during rain events. In Ecology's judgment, expressed at hearing through its lead permit writer and designated speaking agent Jeff Killelea,[5] the 25 NTU benchmark is attainable most of the time on construction sites that use appropriate source control and treatment BMPs. It was Ecology's judgment that discharges up to 25 NTU are generally protective of beneficial uses and that construction sites meeting the 25 NTU benchmark would generally not violate state water quality standards. One of the Appellant's experts also opined that a properly managed construction site, applying appropriate BMPs would very likely meet permit terms, while another expert was of the opinion that 50 NTU was a more realistic and generally achievable benchmark. *Testimony of Killelea, Craig, Alongi, Graves. Exs. 2 and 3.*

40.

AGC/BIAW contend that salmon can adapt to high levels of turbidity and that salmon are impacted by chronic discharges of turbidity, which are unlikely to come from a construction site. *Testimony of Graves; Ex. 17 and 50.* The Board finds, however, that even low levels of suspended solids and turbidity "may cause chronic sublethal effects to salmonids such as loss or reduction of foraging capability, reduced growth, resistance to disease, increased stress, and interference with cues necessary for orientation in homing and migration." *Ex. 21, Effects of Turbidity and Suspended Solids on Salmnonids,* Bash, Berman and Bolton, University of Washington (Nov. 1, 2001) p. 6. Low levels of turbidity are defined as between 18 to 70 NTU. The effects from suspended solids and turbidity may produce mortalities and population decline

[5] Mr. Killelea was Ecology's designated 30(b)(6) deponent for purposes of this appeal.

in salmonid species over time. While salmonids may be able to move to different areas to avoid elevated levels of suspended solids and turbidity, such movement comes at a biological cost, because it requires the salmonids to use energy that could be used for other purposes such as growth. It can also expose them to more predation. Sediments in water also cause gill abrasion and entry points for disease. In addition, juvenile fish often spend much time in pools, which tend to fill up with sediment because water flows more slowly through pools. The loss of pools tends to be a permanent impact on juvenile habitat because few events would ever remove the sediments from a pool. *Testimony of Graves, Karr, and Horner, and Ex. 21 and 55.*

41.

Increased suspended solids also cause problems for other types of aquatic biota, such as mayflies and stoneflies, some of which cannot move away from the area experiencing increased turbidity and suspended solids. Salmon eggs are also affected by increased sediment in stream bed gravel, which causes a decrease in oxygen available to the eggs. The sediment can smother the eggs by preventing sufficient dissolved oxygen from reaching the eggs, and it can also delay the emergence of the fry. Delayed emergence may lead to smaller fry that is less able to compete for food, and may affect their migration timing and marine survival. Also, other aquatic organisms which cling to rocks are affected by increased turbidity and suspended solids, and are exposed to predation and death. *Testimony of Karr and Horner and Exs. 21 and 55.*

42.

Construction stormwater discharges differ in their effects on various aquatic species from the effects that result from natural event such as floods and landslides. Construction sites pose

the risk of continued, rather than intermittent, turbid discharges. In many areas of Washington, construction is more frequently occurring in areas of smaller streams and watersheds. The introduction of increasing sediments from construction sites to the interstitial gravels of these waterbodies has a negative impact on the biota or aquatic species. Loss of salmon eggs is a key consequence. Even pulses of sediment need to be considered in terms of their frequency, seasonal context, and the loadings associated with those pulses. *Testimony of Karr and Ex. 59.*

43.

The Board finds that a preponderance of the credible scientific evidence presented at hearing supports Ecology's best professional judgment that 25NTU turbidity/31 cm. transparency benchmark is both a protective and an achievable benchmark when permittees properly implement BMPs to control and treat construction stormwater.

6. Condition S4.D: pH monitoring.

44.

Condition S4.D sets out the requirements for pH monitoring. *Ex. 1, p. 14, 15 (S4.D).* pH monitoring is required on sites with greater than one acre of disturbed soil, which involve significant concrete work or the use of engineered soils, and where stormwater from the affected area drains to surface water. The permit defines "significant concrete work" as "greater than 1000 cubic yards poured concrete or recycled concrete." [6] *(S4.D.1.a).* Ecology chose 1000 cubic yards as the trigger for pH monitoring based on best professional judgment. Ecology's judgment

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[6] One thousand cubic yards is the approximate amount of concrete needed to cover one acre with a six inch slab of concrete.

was informed by input from the Washington State Department of Transportation water quality expert who had reviewed sampling data from ten highway construction projects over a period of three years and concluded that the risk of pH violations is very low when the guidance in Ecology's stormwater management manuals on how to prevent pH problems is followed. No data was presented to Ecology, or to the Board at hearing, supporting the need for a threshold of less than 1000 cubic yards of concrete as a trigger for the pH monitoring requirements. Ecology is developing further technical guidance, in the form of a focus sheet, to aid operators with pH control and monitoring under the CSGP. *Testimony of Killelea and Exs. 1, 2, 3 and 36.*

45.

Condition S4.D.1 provides:

> For sites with significant concrete work, the *pH monitoring period* shall commence when the concrete is first exposed to precipitation and continue weekly until stormwater pH is 8.5 or less.

Ecology intended that this pH monitoring period would begin when the concrete is first poured and exposed to precipitation, and that weekly monitoring would continue throughout and after the concrete pour and curing period until the stormwater pH is 8.5 or less. *Testimony of Killelea and Horner and Exs. 1, 2, 3 and 43.*

7. Condition S8: Discharges to 303(d) listed waterbodies.

46.

Pursuant to Condition S8, permittees that discharge to water bodies listed as impaired by Washington under Section 303(d) of the CWA for turbidity, fine sediment, high pH or

phosphorus, shall conduct water quality sampling. *Ex. 1, p. 18 (S8.A.1).* Samples are to be taken from the receiving water, and from the discharge. *(S8.B.1).* The CSGP establishes a numeric effluent limit equal to the state water quality standard for turbidity (more than 5 NTU over background when background is 50 NTU or less, or more than a 10 percent increase over background when background is more than 50 NTU). (S8.B.2). If one sample exceeds the numeric effluent limit, all future discharges must comply with the numeric effluent limit for turbidity. *Testimony of Killelea and Exs. 1, 2, 3 and 32.*

47.

The CSGP does not require phosphorous sampling in waters listed as impaired for phosphorous, and instead allows the use of turbidity monitoring as a substitute. Phosphorus is a nutrient that is generally found in soil. The evidence at hearing established that an association exists between the presence of turbidity and the presence of phosphorous in water, and that, to a great extent, preventing the release of sediment into water prevents the release of phosphorus into the water. The relationship between turbidity and phosphorous is not statistically correlated, however, because some phosphorus may dissolve in the water itself and therefore be unrelated to the amount of sediment in the same water. *Testimony of Horner and Killelea, Exs. 1, 2, 3 and 32.*

48.

Operators have limited ability to prevent dissolved phosphorous from leaving a construction site. Additionally, attempts to measure, treat, and remove dissolved phosphorous present several difficulties. First, dissolved phosphorus can only be measured in a laboratory.

Second, there is no generally applicable water quality standard for phosphorous against which a sample can be measured. The numeric lake nutrient criteria for phosphorous in the state's water quality standards must be calculated and adjusted based on a site-specific study of the trophic status of the receiving water. This site-specific analysis also requires a public involvement process. And finally, once its presence at unacceptable levels is verified, dissolved phosphorus is very difficult and expensive to remove from the water in which it is dissolved. *Testimony of Horner and Killelea, Exs. 1, 2, 3, and 32.*

8. Condition S9.D.5: Timelines for soil stabilization.

49.

Soil erosion is the greatest contributor to turbidity in discharges from construction sites. The primary defense to soil erosion is soil coverage. Condition S9.D.5 requires that exposed and unworked soils be stabilized through the application of effective BMPs that prevent erosion. *Ex. 1, p. 24-25 (S9.D.5).* Specific timelines for this action are set out in the permit based on the different geographic areas of the state. West of the Cascade Mountains Crest, the CSGP requires soils to be stabilized within seven days during the dry season and two days during the wet season. *(S9.D.5.b).* The CSGP further provides that "soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast." *Ex. 1, p. 25 (S9.D.5.c). Testimony of Alongi and Killelea.*

50.

The timelines for soil stabilization for Western Washington came from Ecology's Stormwater Management Manual for Western Washington (Manual). The identical timelines have been in the manual since the early 1990's. *Testimony of Killelea.*

51.

Although local jurisdictions have no authority over administration of the CSGP, an additional provision of the permit provides:

> The time period may be adjusted by a local jurisdiction, if the jurisdiction can show that local precipitation data justify a different standard.

Ex. 1, p. 25 (S9.D.5.b). This provision allowing local jurisdictions to adjust soil stabilization time frames came from the Manual. When originally included in the Manual, it was intended to allow local governments to make adjustments, through their local code provisions, to reflect local climate conditions. *Testimony of Alongi and Killelea and Ex. 1, 2 and 3.*

9. Condition S9.D.g: Other pollutants.

52.

Construction projects use various materials that include a large range of pollutants. These pollutant-containing materials include concrete, stucco, paints, coatings, solvents, fertilizers for landscaping, and pesticides. Construction also involves various processes that have the potential to generate pollutants, such as grinding metals, cutting metals, and sanding. Also, construction sites result in waste production as a result of materials that are not used, and packaging materials. Virtually the full range of pollutants that occur in urban runoff can also occur in construction

sites, including metals, synthetic organics of various kinds, and petroleum products. *Testimony of Horner and Killelea, and Exs. 1, 2 and 3.*

53.

Condition S9.D, which addresses the mandatory elements in the SWPPP, requires that all pollutants that occur on site be handled and disposed of in a manner that does not cause contamination of stormwater. *Ex. 1, p. 26-27 (S9.D.9).* Specific measures required include covering materials, using spill prevention measures, discharging wheel washing water to a sanitary sewer, applying fertilizers and pesticides according to manufacturer's labels and in a manner that will not result in their becoming part of stormwater runoff, and measures for prevention and treatment of pH modifying sources. *Testimony of Horner and Exs. 1, 2 and 3.*

54.

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

CONCLUSIONS OF LAW

1.

The Board has jurisdiction over the parties and the issues in the case pursuant to RCW 43.21B.110(1)(c). The burden of proof is on the appealing party(s) as to each of the legal issues in the case, and the Board considers the matter *de novo,* giving deference to Ecology's expertise in administering water quality laws and on technical judgments, especially where they involve complex scientific issues. *Port of Seattle v. Pollution Control Hearings Board*, 151 Wn.2d 568, 593-594, 90 P.3d 659 (2004). Pursuant to WAC 371-08-540(2), "In those cases where the board

determines that the department issued a permit that is invalid in any respect, the board shall order the department to reissue the permit as directed by the board and consistent with all applicable statutes and guidelines of the state and federal governments."

2.

The CWA was enacted with the broad policy objective of restoring and maintaining the chemical, physical, and biological diversity of the nation's waters. Congress created the NPDES permit program to further this goal. *Puget Soundkeeper Alliance v. Ecology*, 102 Wn. App. 783, 788, 9 P.3d 892 (2000). In Washington State, EPA has delegated authority to Ecology to administer the NPDES permit program.

3.

The CWA allows states to adopt and enforce additional water pollution limits, so long as they are no less stringent than the federal standards. The State of Washington adopted a Water Pollution Control Act (WPCA), codified as Chapter, 90.48 RCW. The policy of the state WPCA emphasizes the need to protect and restore the waters of the state. RCW 90.48.010. The Water Resources Act of 1971 also identifies water quality as a fundamental goal in utilizing and managing the state's waters. RCW 90.54.020(3)(b).

4.

The CWA and WPCA require construction stormwater discharges to meet all applicable effluent limitations and water quality standards. 33 U.S.C. § 1311(b)(1)(C), § 1313(a) & § 1342 (p)(2)(B); RCW 90.48.080; *Defenders of Wildlife v. Browner*, 191 F. 3d 1159, 1164-1165 (9th Cir. 1999). To achieve this, NPDES permits establish effluent limitations for the discharge of

pollution. Under both federal and state law, effluent limitations set forth in an NPDES permit must be either technology-based or water quality-based, whichever is more stringent. *EPA v. State Water Resources Control Board,* 426 U.S. 200, 205-205 (1976); 33 U.S.C. §1311 (b)(1); Ex. 3

5.

Technology-based limitations are based on the treatment methods available to treat specific pollutants or to prevent and minimize the introduction of pollutants. Dischargers are required to use AKART prior to a discharge, regardless of the quality of the water to which the wastes are discharged. RCW 90.48.010. Water quality based limitations require compliance with the water quality standards.

6.

General permits are an alternative to individual NPDES discharge permits. They allow regulators to efficiently administer a permit process covering large numbers of similar activities. A general permit covers multiple dischargers of a point source category within a designated geographical area, in lieu of individual permits being issued to each discharger. WAC 173-220-030(11). Companies engaged in activities regulated by the permit indicate their desire for coverage under a general permit by filing a Notice of Intent (NOI). Ecology has the right to deny coverage after receipt of the NOI, but in the absence of denial, coverage is extended based upon the NOI. WAC 173-226-200. Entities covered by the general permit are required to conduct their operation in compliance with the terms and conditions set forth in the permit. Construction activity encompasses land-disturbing operations such as clearing, grading or

excavation, and can cause sediment-laden discharges to waters of the state. Such activity is similar from site to site and occurs on large numbers of sites throughout the state, making it appropriate for coverage under a general permit.

A. Use of transparency tubes and turbidity meters (Issues 7, 8, 10, 34 and 35).

7.

AGC/BIAW, the County, and PSA all challenge the CSGP's provisions governing the methods by which permittees must measure for turbidity in water samples. The CSGP's monitoring provisions require the use of turbidity meters for sites with five or more acres of soil disturbance, and allow use of either the transparency tube or turbidity meter for sites with less than five acres of soil disturbance. AGC/BIAW and the County contend that the permit should allow operators to use transparency tubes for measuring water quality, regardless of the size of the operation. PSA, on the other hand, argues that all turbidity sampling required under the permit should be conducted using turbidity meters, regardless of the size of the site.

8.

The state water quality standard for turbidity states:

> Turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU. WAC 173-201A-030(1)(c)(vi) and (2)(c)(vi).[7]

[7] Ecology adopted new state surface water quality standards in 2003; however, several portions of those standards (including the provisions regulating turbidity) have not yet been approved by EPA, and thus are not currently applicable to NPDES permits.

Turbidity is defined as "the clarity of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidimeter." WAC 173-201A-020.

9.

The turbidity meter measures turbidity of water, and produces a reading in NTUs. It is the measuring device referred to in the state regulations and is the most accepted and scientifically valid means by which to measure the turbidity of a water sample. While there is a good correlation between the turbidity readings obtained from a turbidity meter and a transparency tube, the data supporting the correlation is somewhat limited in that it does not include information from all geographic areas of the state. These factors support PSA's argument that the turbidity meter should be used on all sites regardless of size.

10.

The transparency tube, on the other hand, is significantly cheaper and somewhat easier to use in the field, thus making it a preferable measuring method for some operators. We conclude there is little risk that water quality will be harmed by use of the less-sophisticated transparency tube at smaller sites. This is primarily because the scientific data, albeit limited, supports a good correlation between results obtained from a turbidity meter and a transparency tube in the range of 12 to 250 NTU.[8] We also note that while transparency tubes may present some risk of operator error, the two most common types of errors tend to underestimate transparency (i.e. indicate more rather than less turbidity than is actually present).

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[8] The ability to measure 25 NTU is the most critical for purposes of compliance with the CSGP.

11.

The Board concludes that the permit terms which allow the use of the transparency tube for the smaller sites,[9] and require the use of the turbidity meter for larger sites are reasonable and lawful. This conclusion recognizes the generally smaller environmental risk posed by less exposed soil at smaller sites and acknowledges the regulatory reality that the operators of the smaller sites as group are less familiar with water quality sampling and monitoring requirements. At this time, use of the transparency tube at such sites is an economical and satisfactory method by which to protect water quality. Larger sites, however, pose a greater risk to water quality and are more capable of using the preferred and most accepted turbidity testing method, the turbidity meter. Thus, the Board concludes that the permit is correct and rational in the application of differing testing protocols, based on the size of the construction site.

B. Timelines for responses to inspections and monitoring (Issues 10, 11, 15, 25, 34 and 35).

12.

PSA challenges the permit timelines for response to inspections and benchmark exceedances. When an inspection or sample reveals problems, these timelines require revisions to the SWPPP within seven days, and full implementation and maintenance of source control and/or treatment BMPs as soon as possible, but no later than ten days of the inspection or sample result. *(S4.B.1, S4.C.5 and S9.B.2)*. PSA contends that this 7/10 day protocol set out in the

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[9]The Board notes that measuring of samples required by Condition S8.B. for discharges to 303(d) or TMDL waterbodies must be done with a turbidity meter, regardless of the size of the site, because the parameter to be measured is identified as turbidity/NTU. *See Ex. 1, p. 18-20*. The CSGP Condition S8 makes no allowance for measuring transparency in this situation, and the Board agrees with this approach.

CSGP fails to constitute AKART, fails to ensure compliance with water quality standards, and is unreasonably long. PSA argues that the operator should cease any further soil disturbing activities when there is a benchmark exceedance, and the permittee should take required action steps immediately.

13.

AGC/BIAW and the County, on the other hand, argue that the ten day time period is unreasonably short to implement certain types of advanced treatment BMPs. They argue that simple notification to Ecology when more than 10 days is needed for implementation, as the agency suggests, is inadequate and still leaves them in violation of the absolute 10-day requirement in the CSGP.

14.

The Board concludes the 7/10 day response time to correct problems identified as a result of inspections or sampling is reasonable. Most prudent CESCLs, while not required to do so by the actual terms of the permit, will advise operators to cease further soil disturbances as part of their source control measures until discharges are brought under control. In specific situations, where discharges violate water quality standards, and ground-disturbing activities have not been voluntarily stopped, Ecology may exercise enforcement authority to shut down a site or limit soil disturbing activities. *See* RCW 90.48.037, .120, .240.

15.

While AGC/BIAW and the County are correct that ten days may not be long enough to install sophisticated treatment BMPs, many less sophisticated treatment BMPs (i.e. traps, silt

fencing, check dams, and straw waddles) can quickly be put in place. Generally, most types of engineered treatment BMPs would be planned and installed at the beginning of an operation, not after a problem occurs. In those rare instances where installation of a sophisticated treatment BMP becomes necessary in response to unforeseen or changing site conditions, and it is not feasible to implement the treatment BMP within the ten day time frame, the appropriate response is for the operator to contact Ecology and seek additional guidance and time. The Board concludes the CSGP should be modified to reflect that in these circumstances, a longer period for installation of BMPs can be authorized by Ecology. With this minor change, the timeframes set out for responses to inspections and monitoring are adequate to protect water quality and meet AKART requirements.

C. Frequency of Inspections (Issues 10, 13, 25, 35).

16.

PSA challenges the provisions of S4.B.2 that require site inspections once every week and within 24 hours of any discharge, and monthly for temporarily stabilized, inactive sites. AGC/BIAW and the County support the frequency of inspections contained in the CSGP. PSA contends that significant changes can occur on a site during a week and that weekly inspections may not reveal problems prior to a rain event. PSA argues that an inspection should be made prior to any predicted rainfall event, and then again after the event, and no less frequently than one time per week. PSA also asserts that temporarily stabilized and inactive sites should be inspected as frequently as active sites, since temporary coverings can become worn or damaged and need attention more often than once per month.

17.

The Board concludes that PSA has failed to meet its burden of proving that the inspection schedule set out in the permit is inadequate to protect water quality or that it does not comply with AKART. PSA did not present any empirical data demonstrating the inadequacy of weekly inspections, nor could it point to any other state or federal stormwater permits that require an inspection schedule as rigorous as the one it proposes. The permit assumes that inactive sites will be "temporarily stabilized" and need a less rigorous inspection schedule. The Board concludes that requiring more frequent inspections of such sites would be an unreasonable burden, with no proven gain to protection of water quality. PSA's position amounts to a policy preference based on the assumption that more frequent inspections will logically lead to better site management. Even accepting the assumption, we note that the CSGP includes a number of other new requirements that will also improve stormwater management on construction sites, and the Board concludes that the inspection schedule represents a reasonable exercise of Ecology's permit decision-making discretion.

D. Frequency of Sampling (Issues 10, 14, 34).

18.

PSA contends the sampling requirements established in S4.C.2 (weekly, if there is a discharge, and only during business hours) are unreasonably lax. PSA argues, based on the testimony of their expert, that the schedule established will result in insufficient samples to provide enough information to gauge BMP performance and compliance. They also argue that weekly sampling will not produce a representative sample, which is another requirement of the

permit condition.[10] Instead, they contend the appropriate requirement would be sampling every runoff-producing rainfall event occurring during working hours, up to a maximum of three times per week and six times per month. The protocol they suggest for storm sampling would be once during the first hour of the storm, and then once every three hours until the working day ends or the storm ends.

19.

AGC/BIAW and the County, on the other hand, support the schedule contained in the CSGP. They contend that the requirement for the sample to be "representative" is an independent requirement that could impose additional sampling frequency if necessary, and therefore further requirements in the permit are unnecessary.

20.

The Board concludes that, like the inspection schedule, the sampling schedule established by Ecology in the CSGP represents a reasonable exercise of Ecology's decision making discretion. The permit's sampling frequency, coupled with the permit's requirement that the sample be "representative," is sufficiently protective of water quality.

E. Reasonableness of benchmark value (Issue 10, 17, 34, 35).

21.

In the CSGP, Ecology established a benchmark for turbidity/transparency at 25 NTU/31 cms. A contractor that has a discharge greater than 25 NTU, but less than 250 NTU (or

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[10] S4.C.2.a requires that the sample be representative of the flow and characteristics of the discharge.

transparency less than 31 cm, but greater than 6 cm) must review and revise the SWPPP, and implement appropriate BMPs as soon as possible, but within 10 days. A contractor that exceeds 250 NTU/31cm must take similar corrective actions, but also continue sampling discharges on a daily basis until the benchmark or water quality standards are met, or the discharge stops *Ex. 1, p. 13, 14 (S4.C.5).* AGC/BIAW and the County contend that the 25 NTU/31 cm benchmark is overly conservative and will likely lead to burdensome and unnecessary adaptive management requirements when a construction site is already fully implementing AKART and is not likely to cause or contribute to a violation of water quality standards. They argue that 50 NTU is a more appropriate benchmark. PSA, on the other hand, supports the 25 NTU benchmark, but contends the parallel transparency value should be 33 cms, not 31 cms. Further PSA contends the 250 NTU/6 cm trigger does not achieve AKART, and should be set at 75 NTU instead of 250 NTU.

22.

State law directs Ecology to include an enforceable adaptive management mechanism, such as a benchmark, in the construction stormwater general permit. RCW 90.48.555(8)(a)(i). A benchmark is not a numeric effluent limitation, even if it is stated in numeric terms. [11] Exceedances of the benchmark are not permit violations. Rather, the benchmark is a threshold or indicator value. When that threshold is reached, a permittee must implement a responsive protocol of SWPPP review and revision, monitoring, reporting, and appropriate source control and/or treatment of discharges.

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[11] In fact, the Board ruled in a partial summary judgment issued in this appeal on January 30, 2007, that the 25 NTU benchmark is not a numeric effluent limit. See *AGC/BIAW, PSA, and Snohomish County v. Ecology*, PCHB No. 05-157, 158 and 159, Order Granting Ecology's Motion for Partial Summary Judgment (Jan. 30, 2007).

23.

Ecology established the 25 NTU turbidity[12] benchmark based on studies that analyze stormwater discharge levels achievable with and without application of BMPs, evaluation of other permit discharge limitations, and the field experience of Ecology inspector staff. (*See, Exs. 8, 9, 10, 11 and 12*). The 25 NTU benchmark does not include a dilution factor because of the lack of dilution determined to be available at construction sites and the difficulty in identifying a standard dilution factor for this general permit. Ecology set the benchmark at a level at which discharges that did not exceed the benchmark would not, in most circumstances, violate the state water quality standard for turbidity in the receiving water. Ecology also concluded that discharges at or below 25 NTU would typically, but not always, indicate that erosion and sediment control BMPs were functioning effectively to protect water quality and the beneficial uses in the receiving water. In Ecology's judgment, the 25 NTU benchmark would be achievable most of the time on construction sites that were using appropriate source and treatment BMPs. This judgment was also supported by the opinion of other experts who testified at hearing.

24.

The Board concludes that the 25 NTU benchmark is supported by the weight of evidence, and is valid and reasonable. The Board concludes that the construction site that properly implements AKART will likely meet this benchmark. The Board also concludes that

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[12] The parallel transparency number is discussed later on this section. See CL 30.

exceedances of the benchmark are likely to violate state water quality standards and therefore it is an appropriate trigger for an adaptive management response by permittees under the CSGP. The evidence produced at the hearing supports a conclusion that the average background turbidity level of receiving water in Washington State is 3.8 NTU. During storm events, when the flows in receiving waters increase, the background turbidity would likely increase, possibly as high as 20 NTU. Applying the state water quality standard to discharges into receiving water with a background turbidity level of 20 NTU (discharge turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less) requires that a discharge have a value of 25 NTU or less to meet the state water quality standard. Thus, in a storm event, if a construction site discharges water with a turbidity level of greater than 25 NTU, it is potentially violating the state water quality standard for turbidity. Discharges with turbidity greater than 25 NTU also have the potential to harm salmon and other aquatic life. At this level of discharge, a site should review its SWPPP and implement appropriate source and treatment BMPs.

25.

The Board rejects AGC/BIAW and the County's contention that requiring response to a discharge level of 25 NTU with source and treatment controls constitutes a "burdensome and unnecessary adaptive management requirement even when a construction site is fully implementing AKART." *AGC/BIAW's hearing brief, p. 3.* The evidence produced at the hearing supports the conclusion that a site fully implementing AKART will not routinely be producing discharges in excess of 25 NTU. The median, or middle number, of the turbidity

range for construction site discharges under the prior CSGP, as documented in Ecology's August 2006 publication, was 29 NTU. The recent discharge data submitted from sites operating under the new, more stringent CSGP, established that a majority of the dischargers reporting either had no discharge or discharge turbidity levels at or below 25 NTU. This data was generated during one of the wettest Novembers on record in Washington State. The Board concludes, based on this data and the opinions of Ecology staff and other experts at hearing, that a well-managed construction site implementing appropriate BMPs will be able to meet the 25NTU benchmark. Further, the benchmark itself is an indicator value by which the permittee is warned that there are imminent water quality problems. It is a reasonable level at which the agency should expect response by a construction site to protect water quality.

26.

The Board is also not persuaded by AGC/BIAW and the County's argument that the 25 NTU benchmark is in error because it does not include a dilution factor. To the contrary, the Board has recently held that the use of a dilution factor in the calculation of the copper benchmark in the Boatyard General Permit was flawed because it created the equivalent of a standard mixing zone. *PSA and Northwest Marine Trade Association v. Ecology*, PCHB Nos. 05-150, 151, 06-034 and 06-040 (Jan. 26, 2007). In that case, the Board cited a prior decision in which it had rejected the use of standard mixing zones in general permits as inconsistent with the overall goals of the CWA. *Puget Soundkeeper Alliance v. Ecology*, PCHB No. 02-162, 163 and 164, Order Granting Partial Summary Judgment (2003). Similarly, use of a dilution factor in setting the benchmark level for turbidity discharges in the CSGP would increase the potential

that permittees could violate turbidity water quality standards without triggering the benchmark. Such a result would be inconsistent with the purposes of the benchmark. The benchmark is intended to be an indicator that an operator needs to take additional steps to control the turbidity of their discharge before water quality violations occur.

27.

Snohomish County also argues that the benchmark provision of the permit puts a permittee into a perpetual effort to meet the 25 NTU benchmark when stormwater discharges are between 25-250 NTU, with no escape even if the permittee meets water quality standards. The County argues that when discharges exceed the 250 NTU level, the permit allows the CESCL to demonstrate compliance with the water quality standard for turbidity and thereby end a continued, and endless adaptive management effort. The County, joined by AGC/BIAW, urges that a similar provision must be read into the first section of the benchmark condition of the permit *(S4.C.5a)* to allow the permittee to end BMP efforts once water quality standards have been met for a discharge that was between 25-250 NTU.

28.

This argument misreads the permit. The permit benchmark is 25 NTU (31cm), achievable through AKART. All permittees must implement a tiered adaptive management response to meet this benchmark. *(S4.C.5.a)*. If, despite implementation of BMPs at the first tier, a site experiences a stormwater discharge(s) above 250 NTU, a more rigorous adaptive management protocol becomes applicable. At the 250 NTU level, the permittee, in addition to the requirements to review and revise the SWPPP, implement and maintain source control and

treatment BMPs, and log BMP implementation and maintenance, must notify Ecology by phone and *"continue to sample discharges daily"* until certain levels are achieved or the discharge stops (emphasis added). *(S4.C.5.b)*. The obligation to continue daily *sampling* is ended once the discharge meets the permit benchmark or water quality standard for turbidity. However, the obligation to meet the permit benchmark of 25 NTU is not. Simply bringing a particular discharge that had been in excess of 250 NTU back to the water quality standard does not obviate the need to continue efforts to meet the fundamental benchmark condition of this permit. The language requiring revisions to SWPPPs and implementation of BMPs is identical in subsections (5)(a) and (5)(b), so a different interpretation of what is required by this language is not justified. The permittee has an ongoing responsibility under the permit to implement AKART to meet the 25 NTU benchmark, regardless of the quality of the receiving water. To conclude otherwise would lead to the illogical result that the sites with the most turbid discharges need not implement AKART to meet the permit benchmark of 25 NTU.

29.

For the many reasons set forth above, the Board has concluded that the 25 NTU benchmark is protective of water quality and beneficial uses, including protection of aquatic species, some of which are endangered. The Board also concludes that it is reasonable and lawful for the permit to require a permittee to implement a tiered adaptive management response, including maintenance and revision of existing BMPs on an ongoing basis to meet this 25 NTU benchmark. In those rare situations where a specific construction site cannot reasonably meet the 25 NTU turbidity benchmark, and the site does not need to keep turbidity discharges at or

below the benchmark values in order to meet water quality standards, the operator can apply for an individual NPDES permit. AGC/BIAW and the County have not presented sufficient evidence to persuade the Board that Ecology's decision in setting the benchmark at 25 NTU for the general permit should be modified.

30.

PSA supports Ecology's choice of 25 NTU as an appropriate benchmark number, but challenges the use of 31 cms as the corresponding transparency number. Evidence presented at the hearing supports PSA's argument that the statistically correct corresponding transparency number is 33 cms, not 31 cms. No evidence was offered to refute such evidence, and Ecology conceded that the equation was not as exact as it should be. Therefore the Board concludes the appropriate transparency number for the benchmark should be 33 cms, not 31 cms and that the permit should be modified to reflect this correction.

31.

PSA contends that triggering a second response protocol at 250 NTU (transparency 6 cm or less), is too high, and that construction sites using AKART should not have discharges that exceed 75 NTU. PSA's argument is based on a study done almost 20 years ago with a very limited data set, and it offered no other credible evidence to support requiring the permittee to take additional adaptive management steps at 75 NTU. Having not been presented with any convincing evidence on this issue, the Board concludes that the 250 NTU turbidity trigger for additional adaptive management is lawful and reasonable.

F. pH Monitoring Threshold (Issues 10, 18 and 34).

32.

PSA contends that Condition S4.D.1, which requires pH monitoring when 1000 cubic yards of concrete is poured, is too high. *Ex. 1, p. 14.* PSA argues that a substantially smaller amount of concrete or stucco can lead to elevated discharge pH. PSA also contends that it is not clear from the condition when pH monitoring must start, and how long it should be continued.

33.

Ecology established the 1000 cubic yard trigger based on best professional judgment and data provided by the Washington State Department of Transportation's water quality expert. PSA's expert witness opined that a smaller-sized concrete pour could endanger the pH of waterbodies, but he acknowledged that there is no data to support an alternative threshold. In absence of other data, the Board concludes that the threshold established in the CSGP is valid. In special situations, where there is concern that a smaller concrete operation may cause pH impacts, Ecology can either require an individual NPDES permit or issue an additional enforcement order.

34.

PSA also contends that the language of S4.D.1 does not provide clear direction as to when monitoring should start and how long it should continue. S4.D.1 states:

> For sites with significant concrete work, the *pH monitoring period*[13] shall commence when the concrete is first exposed to precipitation and continue weekly until stormwater pH is 8.5 or less.

Ecology's permit writer testified that it was Ecology's intent that, where 1,000 cubic yards or greater of concrete is to be poured at a site, the pH monitoring period should begin when the first concrete is poured and exposed to precipitation. Once monitoring has started, Ecology intended the condition to require sampling until all of concrete is poured and cured, and the pH is 8.5 or less. The Board concludes that the language in S4.D.1 is vague and does not clearly protect water quality by requiring sampling throughout the concrete pour, and until the pH is 8.5 or less. This term of the permit should be modified to clearly state this requirement.

G. S8 Numeric Effluent Limitations for Discharges to impaired waterbodies (Issues 20 and 34).

35.

The permit subjects a permittee to a numeric effluent limit equal to the state water quality standard for turbidity once a single discharge sample from a site into an impaired waterbody exceeds state water quality standards for turbidity.[14] *Ex. 1, p. 19 (S8.B.2).* AGC/BIAW and the County contend that Ecology has not made the requisite determinations required under RCW 90.48.555(3)(d) to legally impose a numeric effluent limitation for 303(d) listed waterbodies in

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[13] "pH monitoring period" is defined to mean "the time period in which the pH of stormwater runoff from a site shall be tested a minimum of once every seven days to determine if stormwater is above pH 8.5" *Ex. 1, p. 42 (Appendix A – Definitions).*

[14] It also establishes a numeric effluent limitation for discharges to waterbodies subject to an applicable Total Maximum Daily Load (TMDL). *Ex. 1, p. 18, 19 (S8.D).* This aspect of the condition is not at issue in this appeal.

the CSGP.[15] Ecology responds that the first sample that exceeds the state water quality standard in these impaired waterbodies demonstrates that there is a "reasonable potential" that future discharges will cause or contribute to a violation of water quality standards. Therefore, the agency reasons that for subsequent discharges, it is appropriate to impose a numeric effluent limitation.

36.

The Legislature directly addressed the use of numeric effluent limitations in construction stormwater general permits with the enactment of RCW 90.48.555 in 2004. This statute first *requires* effluent limitations, and then generally *allows* them to be expressed as numeric effluent limitations, narrative effluent limitations, or a combination of both. RCW 90.48.555(2). It goes on to direct that Ecology must condition construction stormwater general NPDES permits to require compliance with numeric effluent discharge limits under certain limited circumstances. RCW 90.48.555(3). One such circumstance is when discharges are subject to:

> (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.*

RCW 90.48.555(3)(d). (emphasis added).

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[15] Section 303(d) of the CWA, 33 U.S.C. §1313(d), establishes a listing process for identifying water bodies that fail to meet applicable water quality standards for specific pollutants. The reference in Condition S8 to "303(d) listed waterbodies" refers to waters listed as impaired by the State of Washington under Section 303(d) of the CWA.

37.

The statute specifies that Ecology, when making such a determination, should 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.
>
> RCW 90.48.555 (4)(a-c).

38.

Ecology asserts that the occurrence of one prior discharge that exceeds water quality standards in a 303(d) listed water body, combined with knowledge of the sediment-bearing nature of construction stormwater discharges in general, constitutes an appropriate basis for its determination that further discharges have a reasonable potential to violate water quality standards. In short, Ecology asserts that it has conducted the "reasonable potential" analysis required by statute. Ecology also argues that the permit presumes compliance with water quality standards, as required by RCW 90.48.555(6), until a sampling event demonstrates otherwise in relation to these impaired waterbodies.

39.

The fact sheet that accompanies the permit presents Ecology's analysis of the statutory requirements set out in RCW 90.48.555(4)(b-c), as follows:

> Ecology has determined that stormwater discharges generated from construction activities can cause an array of physical, chemical, and biological water quality impacts, including violation of water quality standards. Stormwater discharge quality is highly variable from site to site. Variability is a [*sic*] primarily a function of site conditions (soils, topography, construction phase, etc.), climate (antecedent storm events, storm

> intensity/duration, snow melt, etc.) and combination of erosion and sediment control best management practices. Impacts of stormwater discharges on receiving waters are also highly variable based on the receiving water characteristics (flow, background concentrations, etc.), beneficial uses, and timing/season. Since 303(d) water bodies fail to meet water quality standards, it can be assumed that no dilution is available in the receiving water, which infers that numeric criteria must be attained at the point of discharge without any consideration of mixing or dilution.

Ex. 3, p. 119.

40.

Ecology further supports its determination that stormwater discharges from construction sites can cause water quality impacts to impaired waterbodies with its August 2006 study of discharges from western Washington construction sites. *See Ex. 8.* The data upon which this report is based establishes that two of six construction sites with documented discharges directly into receiving waters (33%) caused violations of the state numeric water quality criterion for turbidity.

41.

By definition, the water bodies receiving discharges under Condition S8 already fail to meet water quality standards. In light of the fact that the waterbodies subject to Condition S8 discharges are already impaired, the Board concludes that further discharges of pollutants for which the water body is impaired have the potential to cause water quality violations. As the Board has previously recognized in its Order Granting Partial Stay of the prior Construction Stormwater General Permit issued in 2000:

> The § 303(d) listing process, by definition, identifies bodies of water that currently fail to meet applicable water quality standards for specified pollutants. It follows that allowing

> new or additional discharges of an identified pollutant to an impaired water body would necessarily cause or contribute to the existing violation of water quality standards. Such an action is contrary to state and federal law and would cause harm to the receiving water that is not easily repaired.

Puget Soundkeeper Alliance et al. v. Ecology, PCHB No. 00-173, Order Granting Partial Stay (August 29, 2001).[16]

42.

The Board also concludes that when a sample collected at a construction site operating under the narrative best management practices contained in the CSGP exceeds water quality standards for turbidity, Ecology can reasonably presume that such effluent limitations based on nonnumeric best management practices have not been effective in achieving compliance with state water quality standards.

43.

In sum, the Board concludes that Ecology's analysis and determinations with respect to 303(d) listed waterbodies comply with the requirements of RCW 90.48.555. Ecology correctly conducted a reasonable potential analysis and also correctly identified the circumstances under which nonnumeric BMPs are ineffective, prior to imposing the numeric effluent limitation applicable to 303(d) listed water bodies, as required by RCW 90.48.555(3). Ecology's determination was supported by the required analysis, set out in 90.48.555(4)(a-c), and started

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[16] The Board's decision on the stay of the 2000 CSGP preceded the passage of RCW 90.48.555. In that decision, the Board prohibited coverage under the 2000 CSGP to new discharges into 303(d) listed water bodies if the discharge included the pollutant for which the waterbody was listed "unless it can be documented that no water quality violation will occur." Id.

with a presumption of compliance by the permittee, as required by RCW 90.48.555(6). Finally, we conclude the permit correctly applies a numeric effluent limitation for turbidity to discharges into 303(d) listed waterbodies from a site that has previously discharged stormwater in exceedance of the state water quality standard for turbidity.

H. Use of turbidity as a surrogate for phosphorus (Issue 23, 34).

44.

Condition S8 requires permittees that discharge into 303(d) listed waterbodies for phosphorus to perform water quality sampling for turbidity, not phosphorus. *Ex. 1, p. 18, 19.* PSA challenges Ecology's decision to use the turbidity measurement as a surrogate for phosphorus.

45.

The Board concludes that Ecology made a reasonable decision to allow turbidity testing as a surrogate for phosphorus in the 2005 CSGP. The evidence was undisputed that control of sediment through proper implementation of BMPs is the most practicable way for construction sites to prevent phosphorous discharges. Additionally, we are persuaded that Ecology fully considered and properly balanced the many difficulties identified in directly measuring, treating, and removing phosphorous against any environmental benefit that phosphorous sampling might offer. The 2005 CSGP takes significant steps forward by requiring sampling and measuring of turbidity against benchmark values, and by setting a numeric effluent level once a discharge exceeds the state water quality standard for turbidity in impaired water bodies. As measurement and treatment of dissolved phosphorus becomes more readily available on a scale suitable for

construction sites, it may be appropriate for Ecology to require phosphorus sampling in future construction stormwater general permits.

I. Timeframes for soil stabilization (Issue 27)

46.

AGC/BIAW, the County, and PSA all challenge the soil stabilization provisions of Condition S9.D.5. *Ex. 1, p. 24, 25.* AGC/BIAW and the County contend that S9.D.5.b, which prohibits soils in Western Washington from remaining uncovered for more than seven days during the dry season, is impracticable and unreasonable. PSA contends that S9.D.5.c, which requires soils be stabilized at the end of the shift before a holiday or weekend only "if needed based on the weather forecast," fails to satisfy AKART, ensure compliance with water quality standards, and is unreasonable.

47.

The provision AGC/BIAW and the County challenge (S9.D.5.b) is not a new requirement. The identical timeline has been in Ecology's Stormwater Management Manual since the early 1990's. Given that soil erosion is the greatest contributor to turbidity in discharges from construction sites, that the primary defense to soil erosion is soil coverage, and that this timeline has been in use for many years, the Board concludes that the seven day soil stabilization requirements of the permit are neither impracticable nor unreasonable.

48.

The Board also concludes that requiring permittees to monitor weather forecasts on an hourly or daily basis, as PSA suggests, is not a practicable, reasonable, or enforceable general

permit condition. While such monitoring could be a good idea in some circumstances, the Board concludes that such a requirement is not required by law, nor necessary to protect water quality, given the permit's other terms.

49.

The Board concludes, however, that the language at the end of S9.D.5.b which allows local jurisdictions to make adjustments to soil stabilization time periods should be deleted from the permit. *Ex. 1, p. 25.* This provision comes from Ecology's Stormwater Management Manual and was inadvertently included in the CSGP along with the preceding language related to the timeframe for soil stabilization. There was no dispute at hearing that this provision is not appropriate in the CSGP and should be removed, as it amounts to an improper delegation of Ecology's permitting authority to local government.

J. Other pollutants (Issue 34).

50.

PSA's final challenge to the CSGP is that it does not address numerous pollutants that may be contained in stormwater discharged from a construction site. PSA argues that the CSGP focuses exclusively on sediments, pH, and phosphorus, and neglects to address other pollutants that may be released by construction materials, processes, and waste products. PSA contends that the CSGP also fails to address pollutants that can be present in soils as a result of former land uses or pre-construction activities.

51.

Condition S9.D.9 does address other pollutants generally present on construction sites. *Ex. 1, p. 26, 27.* It requires proper handling and disposal of all pollutants. While prior uses of a site can result in the presence of unique contaminants in the soil of the site itself, the Board concludes that it is not reasonable to impose monitoring requirements for a broader array of pollutants on all construction sites covered by the CSGP. If a specific site poses special contaminant risks, Ecology can impose additional site-specific requirements under this permit by administrative order or by requiring coverage under an individual permit. The provisions contained in S9.D.9 are adequate to address the presence of the typical pollutants found on construction sites.

52.

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

Having so found and concluded, the Board enters the following

ORDER

The 2005 NPDES Construction Stormwater General Permit is affirmed, and Ecology shall reissue the permit consistent with the following modifications:

1. Condition S4.C.5 is modified to reflect that the transparency tube value that correlates with 25 NTU is 33 cms, not 31 cms.

2. Conditions S4.B.1.b, S4.C.5.a.ii, S4.C.5.b.iii, and S9.2.b are each modified to include the following provision:

   If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when an extension is requested by a permittee within the initial 10-day response period.

3. Condition S4.D.1 is modified as follows:

> 1. For sites with significant concrete work, the *pH monitoring period* shall commence when the concrete is first **poured and** exposed to precipitation, and continue weekly **throughout and after the concrete pour and curing period,** until stormwater pH is 8.5 or less.

(modified language is in bold).

4. The following language is deleted from Condition S9.D.5:

> "The time period may be adjusted by a local jurisdiction, if the jurisdiction can show that local precipitation data justify a different standard."

DONE this 4th day of June 2007.

POLLUTION CONTROL HEARINGS BOARD

William H. Lynch, Chair

Kathleen D. Mix, Member

Andrea McNamara Doyle, Member

Kay M. Brown, Presiding
Administrative Appeals Judge