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VIA E-MAIL

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Subject: Draft Section 401 Certification for the U.S. Environmental Protection Agency's
Vessel General NPDES Permit

Dear Mr. Nygaard:

The National Wildlife Federation ("NWF"), League of Ohio Sportsmen ("LOOS"), and Ohio Environmental Council ("OEC") are writing to comment on the draft Section 401 Certification that the Ohio Environmental Protection Agency ("OEPA") has issued for the U.S. Environmental Protection Agency's ("EPA's") draft Vessel General National Pollutant Discharge Elimination System ("NPDES") Permit ("VGP"). Despite the conditions OEPA has included in the draft certification, there is no reasonable assurance that vessels discharging ballast water will comply with applicable water quality standards ("WQS"). On the contrary,

certification would harm Ohio's waters because the VGP would not prevent invasive species from being introduced by vessels discharging ballast water, even with the conditions OEPA proposes to add.

Over the past thirty-plus years, EPA's illegal exemption of discharges incidental to the normal operation of a vessel has allowed oceangoing vessels to discharge ballast water containing species not indigenous to the Great Lakes without effective controls to protect water quality. This has led to the establishment of many invasive species that have severely impaired the use and value of Ohio's waters for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes.

Invasive species are causing the foundation of the Great Lakes food web to crash, interfering with the health, recreation, and enjoyment of millions of Americans, dramatically harming the sport and commercial fishery, and costing the region billions of dollars. Many scientists believe that invasive species are the worst problem facing the Great Lakes.

Efforts to stem this serious problem must concentrate on preventing any further invasions of non-indigenous species. Unfortunately, the VGP will not prevent such invasions, nor will the conditions OEPA has proposed to add to the VGP. The VGP is incapable of stopping the introduction of new invasive species or preventing the damage they will cause. Instead, the VGP would merely perpetuate the use of ballast water exchange ("BWE") and saltwater flushing ("SWF"), two management practices that are patently inadequate to protect water quality. Continued total reliance on these ineffective practices will lead to more invasions of non-indigenous species and devastating violations of WQS.

In the balance of these comments, NWF, LOOS, and OEC explain why OEPA cannot certify the VGP, despite the conditions included in the Certification.

I. OEPA cannot certify the VGP because no conditions will assure compliance with Ohio WQS.

A. A certification may only issue if it contains conditions that will assure compliance with WQS.

Under the Clean Water Act ("the Act"), any certification must include limitations necessary to assure compliance with state WQS.¹ The Supreme Court explained this requirement in the case *PUD No. 1 of Jefferson County v. Washington Dept of Ecology*, 511 U.S. 700 (1994) ("*PUD No. 1*").

PUD No. 1 involved a controversy between petitioners, a city and local utility district, and respondent, a state environmental agency. Petitioners proposed to build a hydroelectric

¹ See *PUD No. 1 of Jefferson County v. Washington Dept of Ecology*, 511 U.S. 700, 712-13 (1994); 33 U.S.C. § 1341(d).

project on the Dosewallips River, which would divert water from the river to electricity generating turbines, then return the water to the river.² Because the Federal Power Act required a federal license for the project, and because the project could result in discharges into the Dosewallips, petitioners were required to obtain certification before the license could be issued, pursuant to § 401 of the Act.³

In issuing a certification, the State imposed a variety of conditions, including minimum stream flow requirements in the Dosewallips where the water was to be diverted.⁴ The State imposed this condition to protect the salmon and steelhead fishery in the Dosewallips,⁵ a designated use under the State WQS.⁶ Petitioners challenged the State's action, asserting that the State lacked authority under § 401 to condition its certification on the protection of a designated use.⁷

Upon consideration, the Court determined that a function of a certification is to assure compliance with the applicable provisions of the Act, including § 303.⁸ Consequently, imposing conditions to assure compliance with state WQS adopted pursuant to § 303 is proper, and precisely what a state must do.⁹

“A water quality standard defines the water quality goals for a water body . . . by designating the use or uses to be made of the water, by setting criteria necessary to protect the uses, and by protecting water quality through antidegradation provisions.”¹⁰ To assure compliance with a WQS, a certification must include conditions sufficient to assure compliance with all three components of the WQS: the designated uses, the water quality criteria (numeric or narrative), and the antidegradation policy.¹¹ In *PUD*, the Court upheld the minimum stream flow condition because it protected the designated use of the Dosewallips and satisfied the antidegradation policy.¹²

To protect a designated use, effluent limitations must assure that the use will be maintained. This follows from the CWA's mandate that WQS “shall . . . serve the purposes of

² See *id.* at 708.

³ See *id.*

⁴ See *id.*

⁵ See *id.*

⁶ See *id.*, 511 U.S. at 706.

⁷ See *id.*, 511 U.S. at 711.

⁸ See *id.*, 511 U.S. at 707, 712.

⁹ See *id.*, 511 U.S. at 713.

¹⁰ U.S. Environmental Protection Agency, *Water Quality Standards Handbook* (1994), § 1.2, at 1-1 (“*EPA WQS Handbook*”) (attached as Exhibit 1); see also *PUD No. 1 v. Washington Dept. of Ecology*, 511 U.S. at 714; 33 U.S.C. § 1313(c)(2)(A); 40 C.F.R. § 131.3(e) (“Water quality standards are provisions of State or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses.”); 40 C.F.R. § 131.6 (identifies the elements that states must include in water quality standards, including designated uses, water quality criteria, and an antidegradation policy).

¹¹ See *PUD No. 1 v. Washington Dept. of Ecology*, 511 U.S. at 714-15, 719.

¹² See *id.*, 511 U.S. at 715, 719.

this Act,”¹³ which are “to restore and *maintain* the chemical, physical, and biological integrity of the Nation’s waters.”¹⁴ An impairment of a designated use would run contrary to the mandate of maintaining the integrity of the water. Consequently, a violation of a WQS occurs where a designated use continues to a diminished extent. The purposes of the Act would not be served by deeming a designated use protected even as its usefulness degrades, by turning a blind eye to the degradation of a designated use until it is completely eliminated.

The requirement to fully maintain designated uses finds explicit expression in the antidegradation policy. The antidegradation policy requires the maintenance and protection of existing uses and the water quality necessary to protect existing uses.¹⁵ “Existing uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.”¹⁶ “No activity is allowable under the antidegradation policy which would partially or completely eliminate any existing use.”¹⁷

B. No conditions will assure that discharges made pursuant to the VGP will comply with water quality standards.

The evidence is overwhelming that the VGP’s effluent limitations will not assure compliance with Ohio’s WQS. Even were ballast water discharges to meet the VGP’s effluent limitations, such discharges nevertheless would likely cause or contribute to exceedances of Ohio WQS. Therefore, Ohio must deny certification of the VGP.

1. The VGP’s technology-based effluent limitations and related requirements are not stringent enough to assure compliance with Ohio WQS.

(a) EPA’s technology-based effluent limitations for ballast water discharges: ballast water exchange and saltwater flushing.

Ballast water is a major pathway for the transfer of non-indigenous species to non-native waters.¹⁸ EPA’s proposed VGP contains two primary technology-based effluent limitations (“TBELs”) to regulate the discharge of ballast water. The first TBEL is the requirement of ballast water exchange (“BWE”) for oceangoing vessels.¹⁹ BWE is the process of exchanging

¹³ 33 U.S.C. § 1313(c)(2)(A).

¹⁴ 33 U.S.C. § 1251(a) (emphasis added).

¹⁵ See 40 C.F.R. § 131.12(a)(1); Ohio Admin. Code 3745-1-05(C)(1).

¹⁶ 40 C.F.R. § 131.3(e); Ohio Admin. Code 3745-1-05(A)(8).

¹⁷ EPA WQS Handbook § 4.4.2, at 4-5. Thus, a state must protect existing uses (including existing uses which are also designated uses) against degradation, not just elimination. See *PUD No. 1*, 511 U.S. at 718-19.

¹⁸ See United States General Accounting Office, *Invasive Species: Clearer Focus and Greater Commitment Needed to Effectively Manage the Problem*, GAO-03-1, at 12 (October 2002) available at <http://www.gao.gov/new.items/d031.pdf> (last visited Jul. 31, 2008) (“*Clearer Focus Report*”) (attached as Exhibit 2).

¹⁹ See VGP Parts 2.2.3.5, 2.2.3.6, at 16-17.

freshwater or estuarine ballast with highly saline ocean water prior to entering regulated waters.²⁰ U.S. Coast Guard regulations require BWE either through “flow through” or “empty/refill” exchange.²¹ In theory, BWE reduces the introduction of invasive species by purging or killing them with highly saline ocean water, and replacing the ballast tanks with water containing organisms that cannot survive if released into regulated waters.²²

EPA’s second TBEL is the requirement of saltwater flushing (“SWF”) for NOBOB vessels.²³ A NOBOB (“No Ballast on Board”) ship is one that has pumped out its ballast tanks before entering regulated waters, and is therefore not subject to Coast Guard regulations requiring BWE.²⁴ However, various considerations preclude the evacuation of all the water in a ballast tank.²⁵ As a result, NOBOBs are rarely completely dry, or completely free of residual sediment.²⁶ Total ballast residuals have been found to range from a negligible amount up to 200 tonnes, and average 62 tonnes.²⁷

As a NOBOB moves from port to port in regulated waters, it may take on new water as ballast to maintain trim and stability during operations, which then mixes with residual ballast water, sediment, and any associated non-indigenous organisms, and is later discharged elsewhere.²⁸ Flushing ballast tanks with highly saline water before NOBOBs enter regulated waters is designed to prevent the introduction of invasive species by exposing them to a lethal “salinity shock.”²⁹

(b) The VGP’s TBELs have not been effective, and will not be effective, in preventing invasive species.

The proposed VGP’s two TBELs together are an insufficient solution to the invasive species problem. Neither BWE nor SWF is completely effective in preventing the introduction of invasive species. Although a less than complete solution might be acceptable for the prevention of some pollutants, it is unacceptable with respect to invasive species. Because even a small

²⁰ See Anthony Ricciardi, *Patterns of Invasion in the Laurentian Great Lakes in Relation to Changes in Vector Activity*, 12 *Diversity and Distrib.* 425 (2006) (“*Patterns of Invasion*”) (attached as Exhibit 3).

²¹ See 33 CFR §§ 151.1510(a), 151.2025(b)(1) & (2), 151.2035.

²² See Ricciardi, *Patterns of Invasion*, at 425.

²³ See VGP Parts 2.2.3.7, 2.2.3.8.

²⁴ See Thomas Johengen et al., *Assessment of Transoceanic NOBOB Vessels and Low-Salinity Ballast Water as Vectors for Non-indigenous Species Introductions to the Great Lakes*, at 1-2 (last modified May 20, 2005), available at <<http://www.glerl.noaa.gov/res/projects/nobob/products/NOBOBFinalReport.pdf>> (last visited Jul. 31, 2008) (“*NOBOB Final Report*”) (attached as Exhibit 4).

²⁵ See *id.*, at 1-2, 2-8.

²⁶ See *id.*

²⁷ See *id.* at 2-7, 6-2.

²⁸ See *id.* at 1-3.

²⁹ See Gregory M. Ruiz et al. and David F. Reid, *Current State of Understanding about the Effectiveness of Ballast Water Exchange (BWE) in Reducing Aquatic Nonindigenous Species (ANS) Introductions to the Great Lakes Basin and Chesapeake Bay, USA: Synthesis and Analysis of Existing Information* 4, NOAA Technical Memorandum GLERL-142125 (2007) available at <ftp://ftp.glerl.noaa.gov/publications/tech_reports/glerl-142/tm-142.pdf> (last visited Jul. 29, 2008) (“*Current State of Understanding*”) (attached as Exhibit 5).

number of non-indigenous organisms could entrench themselves and spread through the waters, any solution must achieve complete prevention.³⁰

(i) Non-indigenous species have been and will be discharged despite ballast water exchange.

BWE is ineffective in eliminating organisms in ballast tanks.³¹ “[L]ive freshwater-tolerant zooplankton and other organisms have been found in ships that reportedly exchanged ballast and these include species not previously reported from the Great Lakes.”³²

An EPA study of BWE found that “a 95 percent exchange of the original water resulted in flushing of only 25 to 90 percent of the organisms studied.”³³ This was due to the inability of BWE to remove water remaining in the crevices of the ballast tank, as well as sediment layers in the ballast tank, both of which contain organisms.³⁴ A number of studies have found that ships which exchanged ballast water in the ocean carried live organisms in their ballast tanks.³⁵

Another problem with BWE is that residual freshwater left in ballast tanks does not necessarily allow the ballast water to reach a high enough salinity to eliminate invasive species in the water. Species from low-salinity environments have exhibited a range of tolerance to high salinity exposure, making it difficult to generalize about their ability to survive the “salinity shock” which occurs during BWE.³⁶ Species with a broad salinity tolerance are most able to survive in a ballast tank following ballast water exchange; recently introduced species have such a broad tolerance.³⁷

BWE has not prevented the introduction of invasive species into the Great Lakes. Since BWE became mandatory, the mean rate of discovery of invasive species in the Great Lakes has not declined.³⁸ The fishhook water flea is one example of an invasive species that almost certainly invaded Lake Ontario well after implementation of mandated open-ocean exchange.³⁹ The bloody-red mysid *Hemimysis anomala* is another.⁴⁰ “Shipping remains the most plausible vector responsible for 62% of non-indigenous species (84% of free-living species) discovered after 1993.”⁴¹

³⁰ See Anthony Ricciardi & Hugh J. MacIsaac, *Evaluating the Effectiveness of Ballast Water Exchange Policy in the Great Lakes*, 18 *Ecological Applications* 1321, 1322 (2008) (“*Evaluating the Effectiveness of Ballast Water Exchange*”) (attached as Exhibit 6).

³¹ See Ricciardi, *Patterns of Invasion*, at 425.

³² Ricciardi & MacIsaac, *Evaluating the Effectiveness of Ballast Water Exchange*, at 1321.

³³ U.S. Environmental Protection Agency, *Aquatic Nuisance Species in Ballast Water Discharges: Issues and Options*, at 10 (2001) (attached as Exhibit 7).

³⁴ See *id.*

³⁵ See *NOBOB Final Report*, at 6-9; Ricciardi & MacIsaac, *Evaluating the Effectiveness of Ballast Water Exchange*, at 1321.

³⁶ See *NOBOB Final Report*, at 6-9, 6-10.

³⁷ See Ricciardi, *Patterns of Invasion*, at 425.

³⁸ See *id.*, at 428, 431.

³⁹ See Ricciardi & MacIsaac, *Evaluating the Effectiveness of Ballast Water Exchange*, at 1321.

⁴⁰ See *id.*

⁴¹ Ricciardi, *Patterns of Invasion*, at 428.

(ii) Non-indigenous species will be discharged despite saltwater flushing.

NOBOBs overwhelmingly predominate over ballasted ships entering the Great Lakes.⁴² “[T]he best estimate is that over 90% of the vessels entering the Great Lakes do so as NOBOBs.”⁴³

“The potential for NOBOB-associated invasive-species introductions lies within their ballast residues, which can contain not only a wide assortment of viable larval and mature plants, animals, and microorganisms, but also ‘resting stages’ [variously called cysts, ephippia, resting eggs, or spores according to taxon].”⁴⁴ Indeed, residual ballast water and sediment have been found to contain virus-like particles (“VLPs”), bacteria, phytoplankton, and invertebrates, including non-indigenous species.⁴⁵

Ships entering the Great Lakes with fresh or low-salinity water residuals from their last overseas ballasting operation present the most serious threat of introducing non-indigenous species; nearly two-thirds of NOBOBs surveyed between December 2000 and December 2002 entered the Great Lakes in this condition.⁴⁶ “[D]uring the 2000 international shipping season it can be reasonably assumed that over 90% of the ocean ships entering the Great Lakes would have taken freshwater ballast into tanks which probably contained residuals from offshore, coastal or inland waters and the resulting mixture would ultimately have been discharged at one or more of the Great Lakes loading facilities.”⁴⁷

Thus, the residual water or sediment, or both, in NOBOB ballast tanks are a potential vector for the introduction of non-indigenous microorganisms, phytoplankton, and invertebrate species into the Great Lakes, especially algal and invertebrate species.⁴⁸ Experiments have shown that NOBOBs may spread nonindigenous zooplankton species to the upper Great Lakes from populations in the lower lakes.⁴⁹

Although SWF may be an improvement over no treatment at all, it is far from a panacea.

The use of high-salinity water to flush NOBOB ballast tanks should be considered a useful and beneficial management practice to reduce species transfers and invasion risks associated with NOBOB ships entering the Great Lakes. In the absence of proven alternatives, this practice provides *some* level of protection

⁴² See *NOBOB Final Report*, at 2-3.

⁴³ *Id.* at iii, 6-2.

⁴⁴ *Id.* at 1-2 (citations omitted).

⁴⁵ See *id.* at iii-viii, 3-14, 3-20, 3-26, 3-35, 3-39, 3-41-43, 3-53.

⁴⁶ See *id.* at i, ii, 6-2, 6-8.

⁴⁷ *Id.* at 2-5.

⁴⁸ See *id.* at 3-27, 3-39, 3-53, 6-5-7, 6-10.

⁴⁹ See *id.* at 4-35, 6-7.

against some adult and larval life stages, *but probably not against resting eggs and spores of zooplankton and phytoplankton.*⁵⁰

The effectiveness of SWF varies with the organisms present in the ballast tank. SWF is more effective in eliminating organisms from environments similar to the Great Lakes, which have very low salinity. However, the mortality rate drops for those native to estuaries, where salt levels are higher.⁵¹ The effectiveness of SWF also depends on the organism's age; in the larval stage, a freshwater mussel would be vulnerable to saltwater, but an adult could retract into its shell and possibly survive until dumped into a Great Lakes harbor.⁵²

(c) The water quality-based effluent limitations contained in the VGP cannot assure compliance with Ohio WQS.

EPA claims that the VGP includes water quality-based effluent limitations ("WQBELs") that are as stringent as necessary to achieve WQS.⁵³ The permit directs that "discharge must be controlled as necessary to meet applicable water quality standards in the receiving waterbody or another waterbody impacted by . . . discharges."⁵⁴ However, this directive does not provide any meaningful guidance.

In fact, discharges cannot be controlled to meet WQS. The technology simply does not exist. Unfortunately, EPA does not have a magic wand. The VGP's WQBEL is thus nothing more than an empty incantation. Simply uttering a particular combination of words cannot and will not suddenly solve a problem that has proved intractable for decades.

EPA's expectation that compliance with the permit's TBELs, corrective actions, etc. "will control discharges as necessary to meet applicable water quality standards,"⁵⁵ is simply not credible. EPA nowhere offers any justification for this expectation, nor can it offer any such justification, at least with respect to discharges of ballast water.

As discussed above, the VGP's TBELs will not assure compliance with WQS. Rather, implementing them will or may result in the discharge of non-indigenous species which will cause, have the reasonable potential to cause, or contribute to non-attainment of WQS. OEPA's Condition II.a. will not assure compliance with WQS, either. Scientists have not yet figured out how to quantify the risk of a given concentration of organisms becoming invasive species.⁵⁶

⁵⁰ Ruiz et al., *Current State of Understanding*, at xii (emphasis added).

⁵¹ See John Flesher, *EPA Plan for Stopping Lake Invaders Debated*, Associated Press, July 11, 2008 quoting David Reid, National Oceanic and Atmospheric Administration, Great Lakes Environmental Research Laboratory (attached as Exhibit 8).

⁵² See *id.*

⁵³ See EPA U.S. Environmental Protection Agency, 2008 Proposed Issuance of National Pollutant Discharge Elimination System (NPDES) Vessel General Permit (VGP) for Discharges Incidental to the Normal Operation of Commercial and Large Recreational Vessels, Fact Sheet at 79 ("*EPA Fact Sheet*").

⁵⁴ VGP, Part 2.3.1, at 27.

⁵⁵ VGP, Part 2.3.1, at 27.

⁵⁶ See text accompanying footnotes 60, 78, and 79, *infra*.

Thus, OEPA's biological performance standards are completely arbitrary, and provide no assurance that invasive species will be prevented.

(d) The VGP is not consistent with the antidegradation policy.

Despite EPA's professed belief, the permit is not consistent with the antidegradation policy, either with respect to high quality waters,⁵⁷ also known as Tier 2 or Tier 2.5 waters, or with respect to existing uses.

(i) The VGP is not consistent with the antidegradation policy applicable to high-quality waters.

EPA expects that individual discharges will not "significantly" lower water quality in high quality waters based on the permit's TBELs,⁵⁸ but there is no foundation for this expectation. As an initial matter, Ohio's antidegradation policy governing high-quality waters does not allow *any* lowering of water quality caused by invasive species, significant or otherwise, without a review.⁵⁹

In any event, all the evidence establishes that individual discharges of ballast water will almost certainly lower water quality in high-quality waters to a significant degree despite the TBELs. Neither BWE nor SWF have prevented or will prevent all introductions of non-indigenous species, and no acceptable level of risk of invasion can currently be identified.⁶⁰ Since 1993, when BWE became mandatory, the mean rate of invasion in the Great Lakes has actually increased to 1.2 species per year.⁶¹ As detailed below, invasive species have so far wrought havoc on water quality in the Great Lakes. Some or all of the new invaders that will evade BWE and SWF will no doubt have the same devastating effect.⁶²

EPA nevertheless exempted individual discharges of ballast water from antidegradation review because "EPA does not believe that a vessel covered under this permit should be considered a new or increased point source discharge, the typical trigger for antidegradation review."⁶³ Nothing in the antidegradation regulation limits antidegradation review to new or increased discharges, however. EPA itself has long held that that the review is "triggered by *any* action that would result in the lowering of water quality in a high-quality water"; EPA has only

⁵⁷ See Ohio Admin. Code 3745-1-05(A)(10).

⁵⁸ See *EPA Fact Sheet* at 81.

⁵⁹ See Ohio Admin. Code 3745-1-05(C)(5) ("The director may approve activities that lower water quality only if there has been an examination of non-degradation, minimal degradation and mitigative technique alternatives, a review of the social and economic issues related to the activity, a public participation process and appropriate intergovernmental coordination, and the director determines that the lower water quality is necessary to accommodate important social or economic development in the area in which the water body is located.").

⁶⁰ See Ricciardi & MacIsaac, *Evaluating the Effectiveness of Ballast Water Exchange*, at 1321; Ruiz et al., *Current State of Understanding*, at xii.

⁶¹ See Ricciardi, *Patterns of Invasion*, at 427-28.

⁶² See Ricciardi & MacIsaac, *Evaluating the Effectiveness of Ballast Water Exchange*, at 1321.

⁶³ *EPA Fact Sheet* at 81.

cited new discharges as *one* action that would presumably necessitate review.⁶⁴ In any event, each ballast water discharge potentially constitutes a discharge of a non-indigenous species new to the Great Lakes. In other words, although ballast water discharges per se may not be new or may not increase, they may cause invasions of new species with new or different impacts on WQS. Unlike molecules of phosphorus or mercury, species are not fungible. Moreover, under Ohio's rules, antidegradation review is required for any application for a certification.⁶⁵

As shown, compliance with the VGP's effluent limitations is highly likely to significantly lower the quality of high-quality waters because the permit authorizes ballast water management practices that allow the introduction and establishment of non-indigenous species. Before allowing such degradation, ballast water discharges must be subjected to the scrutiny required by the antidegradation policy. This obligation cannot be excused by claiming administrative infeasibility or citing the mobility of vessels.⁶⁶

Under Ohio's rules, OEPA must consider thirteen factors relating to the magnitude and impact of a proposed lowering of water quality.⁶⁷ Among other things, OEPA must consider the impact "on aquatic life and wildlife, including threatened and endangered species, important commercial or recreational sport fish species, other individual species and the overall aquatic community structure and function;"⁶⁸ on "waters located within national, state or local parks, preserves or wildlife areas, waters listed as state resource waters in rules 3745-1-08 to 3745-1-30 of the Administrative Code, or waters categorized outstanding national resource waters, outstanding state waters or superior high quality waters;"⁶⁹ and "on the economic value of the water body for recreation, tourism and other commercial activities, aesthetics, or other use and enjoyment by humans."⁷⁰

Although the draft certification contains an "antidegradation statement" that OEPA considered the necessary factors, nothing in OEPA's fact sheet or elsewhere supports the statement. Certainly, OEPA has failed to provide the reasons underlying its statement, or to establish a rational connection between the statement and the evidence, if any exists. Given the uncertainty surrounding the impact of a given quantity or concentration of an introduction of a non-indigenous species on a water body, OEPA could not possibly have considered all of the required thirteen factors, especially the ones highlighted above.

The near certainty that new invasions will occur and that new invaders will lower water quality in high-quality waters does not permit EPA or OEPA to determine that each potential discharge that might be covered by the general permit is necessary to accommodate important

⁶⁴ *EPA WQS Handbook*, § 4.5, at 4-7 (emphasis added).

⁶⁵ Ohio Admin. Code 3745-1-05(B)(1)(c).

⁶⁶ See *EPA Fact Sheet* at 81.

⁶⁷ See Ohio Admin. Code 3745-1-05(C)(5)(a)-(m).

⁶⁸ Id. at 3745-1-05(C)(5)(b).

⁶⁹ Id. at 3745-1-05(C)(5)(d).

⁷⁰ Id. at 3745-1-05(C)(5)(e).

economic or social development *in the area in which the waters are located*.⁷¹ Before the fact, neither EPA nor OEPA can determine (1) whether a given discharge is associated with “important” economic or social development, or (2) whether, in the particular area in which the affected waters are located, lowering water quality is “necessary” for such development.

In short, the type of review required by the antidegradation policy for high-quality waters is impossible prior to the identification and evaluation of specific discharges into specific waters.⁷² The review therefore must be conducted at the time new individual discharges are proposed. Since it cannot be conducted on a statewide basis through a general permit, the VGP is inconsistent with the antidegradation policy.

(ii) The VGP is not consistent with the antidegradation policy with respect to existing uses.

A further problem with EPA’s belief that the VGP is consistent with the antidegradation policy is EPA’s and OEPA’s complete disregard of the effect of ballast water discharges on existing uses. Under Ohio’s rules, “[e]xisting uses . . . and the level of water quality necessary to protect existing uses, shall be maintained and protected.”⁷³ “There may be no degradation of water quality that results in . . . the elimination or substantial impairment of existing uses.”⁷⁴ Discharges of ballast water following BWE or SWF likely would partially, if not completely, eliminate existing uses by plaguing waters with invasive species.⁷⁵ Such discharges would therefore violate the antidegradation policy.

2. Invasive species impair water quality standards.

According to the United States Geological Survey, at least 173 nonindigenous species of plants and organisms have invaded the waters of Ohio.⁷⁶ This list of aquatic invasive species includes the spiny water flea, zebra mussel, and round goby, among others.⁷⁷

The discussion that follows details the severe impairments to water quality standards caused by these species, all introduced by means of ballast water. These impairments foreshadow the adverse impacts that will or may be caused by additional invasions regulated only by BWE or SWF, or required only to meet the biological performance standards adopted by OEPA. Those standards are arbitrary, because “[i]t is currently impossible to identify an acceptable level of risk based on biological criteria, because the relationship between propagule pressure and invasion

⁷¹ See 40 C.F.R. § 131.12(a)(2); Ohio Admin. Code 3745-1-05(C)(5)..

⁷² See *Ohio Valley Env'tl. Coalition v. Horinko*, 279 F. Supp. 2d 732 (S.D. W. Va. 2003).

⁷³ Ohio Admin. Code 3745-1-05(C)(1).

⁷⁴ *Id.*

⁷⁵ See Ricciardi & MacIsaac, *Evaluating the Effectiveness of Ballast Water Exchange*, at 1321.

⁷⁶ See U.S. Geological Survey Nonindigenous Aquatic Species Database, *NAS Species List*, available at <<http://nas.er.usgs.gov/queries/SpeciesList.asp?Group=&State=OH&Sortby=%5BGroup%5D%2CSpecies%2CSubSpecies&submit2=Submit>> (last visited Nov. 19, 2008) (listing 123 nonindigenous aquatic species of organisms and 50 nonindigenous aquatic plant species).

⁷⁷ *Id.*

success has not been ascertained with respect to ballast water discharges.”⁷⁸ Thus, there is no biological basis for OEPA’s standards “other than ‘lower is better.’”⁷⁹

(a) Invasive species found in Ohio waters impair the designated uses component of WQS.

The draft certification focuses on Ohio’s narrative water quality criteria and nuisance WQS.⁸⁰ The draft certification does not mention the designated use component of WQS, although OEPA’s fact sheet alludes to the severe negative economic and environmental impact aquatic invasive species have had.⁸¹ Nonetheless, designated uses are a component of WQS, and OEPA therefore should have addressed them.⁸²

(i) Public Water Supply and Public Health and Welfare Uses

In Ohio, public water supply is a designated use.⁸³ This designated use is impaired by invasive species found in Ohio, such as the zebra mussel.

The zebra mussel clogs water intake pipes and public water supply plants.⁸⁴ In addition, the zebra mussel has had “devastating economic impacts on municipal and residential drinking water delivery systems”⁸⁵ “They colonize pipes constricting flow, therefore reducing the intake in heat exchangers, condensers, fire fighting equipment, and air conditioning and cooling systems.”⁸⁶

⁷⁸ Ricciardi & MacIsaac, *Evaluating the Effectiveness of Ballast Water Exchange*, at 1321.

⁷⁹ *Id.* The quotation comes from a comment on the D-2 performance standards of the International Maritime Organization (“IMO”), which are the biological performance standards adopted by OEPA. *See* IMO, International Convention for the Control and Management of Ships’ Ballast Water and Sediments, Annex: Regulation D-2 Ballast Water Performance Standard (adopted Feb. 13, 2004), available at <<http://www.imo.org/home.asp>> (last visited Mar. 28, 2006) (attached as Exhibit 9).

⁸⁰ *See* Ohio Environmental Protection Agency, *Grant of Section 401 Water Quality Certification (U.S. EPA Vessel General Permit for Discharges Incidental to the Normal Operation of Commercial Vessels and Large Recreational Vessels)* at 2.

⁸¹ *See* Ohio Environmental Protection Agency, *Fact Sheet for 401 Certification of U.S. EPA’s Vessel General NPDES Permit* at 4.

⁸² *See* Ohio Admin. Code 3745-1-07(A) (“Water quality standards contain two distinct elements: designated uses; and numerical or narrative criteria designed to protect and measure attainment of the uses.”)

⁸³ *See* Ohio Admin. Code 3745-1-07(B)(3)(a).

⁸⁴ U.S. Geological Survey Nonindigenous Aquatic Species Database, *Zebra Mussel*, available at <<http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=5>> (last visited Jul. 28, 2008) (“*Zebra Mussel Fact Sheet*”) (attached as Exhibit 10).

⁸⁵ *Clearer Focus Report*, at 55.

⁸⁶ *Zebra Mussel Fact Sheet*.

(ii) Industrial Uses

In Ohio, industrial use is a designated use.⁸⁷ This particular designated use is impaired by the invasive species that impair the public water supply use and in much the same manner. For instance, the zebra mussel has had “devastating economic impacts on . . . power plant intakes, and industrial facilities that use raw surface water.”⁸⁸

(iii) Aquatic and Wildlife Uses

Ohio recognizes aquatic and wildlife uses as a designated use.⁸⁹ “[A]fter habitat destruction, alien invasive species is the second leading cause of extinction of native aquatic species.”⁹⁰ For instance, the zebra mussel interferes with the growth, feeding, movement, respiration, and reproduction of native species and it has been predicted that zebra mussels will cause the extinction of up to 140 native mussel species by 2012.⁹¹ They have already extirpated native unionid clams completely from Lake St. Clair.⁹²

In addition, the effects of the zebra mussel’s massive consumption of phytoplankton may ripple through the food web to affect fish, potentially causing increased competition, decreased survival and decreased biomass of fish that eat plankton.⁹³ Zebra mussels may also cause biomagnification of toxins into both fish and birds.⁹⁴

The round goby has caused declines in the numbers of native fish species because of competition for food and habitat.⁹⁵ In Ohio, the round goby’s presence in Lake Erie led the state to shut down the smallmouth bass fishery to help prevent predation on smallmouth eggs.⁹⁶

The spiny water flea competes with fish for zooplankton, and is therefore likely to adversely affect fish growth and survival.⁹⁷

⁸⁷ Ohio Admin. Code 3745-1-07(B)(3)(c).

⁸⁸ *Clearer Focus Report* at 55.

⁸⁹ See Ohio Admin. Code 3745-1-07(B)(1).

⁹⁰ Great Lakes Water Quality Board, Report to the International Joint Commission, Alien Invasive Species and Biological Pollution of the Great Lakes Basin Ecosystem at 3 (May 2001), available at <http://www.ijc.org/rel/pdf/ais.pdf> (last visited Jul. 31, 2008) (attached as Exhibit 11).

⁹¹ See *Clearer Focus Report*, at 55.

⁹² See *Zebra Mussel Fact Sheet*.

⁹³ See *id.*

⁹⁴ See *id.*

⁹⁵ See U.S. Geological Survey Nonindigenous Aquatic Species Database, *Round Goby*, available at <http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=713> (last visited Jul. 28, 2008) (“*Round Goby Fact Sheet*”) (attached as Exhibit 12).

⁹⁶ See *id.*

⁹⁷ See U.S. Geological Survey Nonindigenous Aquatic Species Database, *Spiny Water Flea*, available at <http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=162> (last visited Jul. 28, 2008) (“*Spiny Water Flea Fact Sheet*”) (attached as Exhibit 13).

(iv) Recreational Uses

Ohio recognizes recreational uses as a designated use.⁹⁸ The zebra mussel affects recreational boating and fishing by attaching to exposed surfaces, increasing drag, overheating engines, sinking navigational buoys, and fouling fishing gear.⁹⁹ Zebra mussels also cover beaches with sharp shells and give off a displeasing stench when they decay, which reduces recreational uses at beaches.¹⁰⁰ The spiny water flea fouls fishing gear and competes with larval fish for food.¹⁰¹

II. Conclusion

As NWF, LOOS, and OEC have shown, neither the VGP nor the draft certification assures compliance with the designated uses and the antidegradation policy established in the Ohio WQS. OEPA has absolutely no basis to support its claim that the conditions it would impose on ballast water discharges pursuant to the VGP will prevent the further introduction of non-indigenous species. Since compliance with Ohio WQS cannot be assured, OEPA must deny EPA's request for certification of the VGP.

If you have any questions about these comments please contact Neil Kagan, Senior Counsel, National Wildlife Federation, at (734) 887-7106 or kagan@nwf.org.

Sincerely,

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⁹⁸ See Ohio Admin. Code 3745-1-07(B)(4).

⁹⁹ See *Zebra Mussel Fact Sheet*.

¹⁰⁰ Minnesota Department of Natural Resources, *Zebra Mussel*, available at <http://www.dnr.state.mn.us/invasives/aquaticanimals/zebramussel/index.html> (last visited Oct. 20 2008) (attached as Exhibit 14).

¹⁰¹ See *Spiny Water Flea Fact Sheet*.