

# OhioEPA

Division of Surface Water

## Response to Comments

**Project: State 401 Water Quality Certification, National Pollutant Discharge Elimination System (NPDES) General Permit for Vessel Discharges; National Pollutant Discharge Elimination System (NPDES) General Permit for Small Vessel Discharges**  
Ohio EPA ID #: N/A

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Ohio EPA held a public hearing on June 25, 2012, regarding State Water Quality Certification of the U.S. Environmental Protection Agency's General NPDES Permit for Vessel Discharges and General NPDES Permit for Small Vessel Discharges. This document summarizes the comments and questions received at the public hearing and/or during the associated comment period, which ended on June 25, 2012.

Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

**Comment: 1:**      **The Vessel General Permit (VGP) is an extremely poor fit for vessels that travel through multiple states and jurisdictions on a regular basis. The process allows states to impose multiple, and potentially conflicting, requirements in addition to the VGP's provisions. It is extremely difficult to change operations moving across invisible state lines. Therefore, we urge Ohio EPA to certify the VGP without any additional conditions.**

**No state on its own can protect the ecosystem from invasive species that can migrate across political borders. The true solution is for Congress to establish a**

**new, uniform statutory regulation for vessel discharges. This statute would provide for environmentally friendly, protective standards that keep our waters clean while being tailored to the operations of vessels in interstate commerce. We urge Ohio EPA to ask Senators Brown and Portman to advance the Coast Guard Authorization Bill passed by the House of Representatives last November to set these standards.**

**Response 1:** The decision to cover vessel discharges under NPDES permits was a decision of the federal court system, and not Ohio EPA or U.S. EPA. Having an effective federal program that protects regional water quality standards would be a more streamlined and effective control system. That system does not exist at this time, however, and we are left with the NPDES permit / state certification system as the only means of regulation.

Ohio EPA has been in contact with our national senators to comment on pending legislation in the U.S. Senate.

**Comment 2:** **We support Ohio EPA's approach to ballast water regulation as detailed in the draft certification. We commend OEPA for harmonizing state rules with those established by the federal government. In doing so, Ohio is helping to move the Great Lakes Region away from the state-by-state patchwork that we believe has created confusion, delays in environmental protection, and economic uncertainty for the maritime sector. Compatibility in control requirements is important amongst ballast water regulators on the Great Lakes – St. Lawrence Seaway system, as non-native species do not recognize political boundaries.**

**Response 2:** We acknowledge this comment, and will continue to work for uniformity among the states.

**Comment 3:** **We concur with Ohio EPA that IMO treatment standards are not "practical and possible" at this time for lakers. So do both federal agencies that have jurisdiction over ballast water discharges – the U.S. Coast Guard and U.S. EPA. In addition, the states of Wisconsin, New York, Indiana, Pennsylvania and Michigan have likewise determined that there are presently no ballast water management systems that can be installed and operate satisfactorily on lakers.**

**While no systems that accommodate lakers' ballast flowrates and large volumes of often frigid water will be available during the term of this permit, our vessels will take steps to limit the potential for their ballast to spread aquatic nuisance species.**

**Response 3:** The final certification retains these conditions from the draft version.

**Comment 4:** Ohio's draft certification also states "The director will evaluate treatment standards equivalent to IMO or more restrictive standards for all vessels covered by the Federal General Permit (including both oceangoing vessels and vessels that operate only in the Great Lakes) when he issues the next certification of this permit..." Even if treatment becomes available for lakers, we question the value of requiring installation of treatment for the following reasons:

- U.S.-flag lakers never leave the system, and have never or will never introduce an ANS;
- Once an ANS has become established, it can and will migrate independent of commercial navigation; and
- Lakers' ballast is but one of many means of spreading ANS. The U.S. Geological Survey has identified 64 and ballast is but one.

**Response 4:** This condition remains in the certification. The statement expresses the director's intent to re-evaluate these technologies, in cooperation with the other states, U.S. EPA and the Coast Guard, each time the certification comes up for renewal. We acknowledge that Ohio EPA cannot add conditions during the term of a federal NPDES permit and its associated certification.

**Comment 5:** The draft 401 certification inappropriately excludes laker vessels from treatment requirements. Although lakers may not play a primary role in introducing invasive species into the Great Lakes, these vessels take up and discharge billions of gallons of ballast water every year as they travel within the Great Lakes, playing a significant role in spreading invasive species after they

have been introduced. Roughly 90% of the commercial shipping operations in the Great Lakes are domestic, and lakers account for 95% of the volume of ballast water transferred.

Lakers are especially suited to transport invasive species for two reasons. First, they move the water over relatively short distances and thus do not keep it in their ballast tanks for a long time, leading to a high survival rate for the organisms inside. Secondly, empirical evidence shows that 30% of ballast water for lakers is loaded in Detroit, Nanticoke, Indiana Harbor and Cleveland, while most of it (56%) is discharged in Superior, Duluth, Two Harbors, Stoneport and Calcite. This leads to a conclusion that a lot of ballast water transfer goes upstream, transporting invasive species at a rate far greater than they could achieve on their own.

**Response 5:**

While laker vessels have the capability to transport aquatic organisms between lakes, there does not appear to be any treatment technology available or pending that can eliminate invasive organisms in ballast discharge at this time. U.S. EPA has made this same determination, and has included BMPs for lakers in the permit that will reduce the uptake and transfer of organisms. Based on this information, Ohio EPA has determined that treatment of ballast water from these vessels is not "practical and possible" at this time.

**Comment 6:**

Many Canadian vessels will be unable to comply with the installation schedule for ballast water management systems. In addition to the points raised in Comment 3, our vessels have high ballast water flow rates, more similar to American lakers than to ocean-going vessels; second our ships' voyages may last only a few hours or days – many ballast water treatment systems, particularly those that use a biocide, require hold time of several days. These systems would not be feasible on our vessels. Additionally, all of the known treatment systems have not successfully met the IMO D-2 standard in the water conditions of the Great Lakes. Finally, the power demands for many of these larger systems would exceed the generator capacity of our ships, particularly the self-unloaders. We ask that you delay these conditions until the Coast Guard concludes

its study of ballast control on our type of vessels within the next year.

Although no technical solution currently exists for use in fresh water, we are optimistic that the combination of results from existing best management practices and alternate technologies will provide promising solutions to the secondary spread of ANS, and that this combination represents a pragmatic solution that is achievable and a true representation of Best Available Technology.

**Comment 7:**

Although the majority of Canadian Shipowners Association vessels operate exclusively in the Great Lakes, very few are confined to operations above the Welland Canal. The CSA does not consider the EPA's and Ohio's demarcation of the Welland Canal as being sufficiently supported by science or risk analysis. If the demarcation is used to signify the challenge posed to installing ballast water treatment systems in vessels designed to operate exclusively in the Great Lakes, then the CSA recommends that EPA and Ohio recognize the constraints and challenges posed to vessel classes and not a geographic division.

The CSA urges the state to include a proviso in its 401 Certification that requires ballast water treatment systems to be:

- Validated at a fresh-water testing facility according to the U.S. EPA ETV Protocol;
- Commercially available;
- U.S. Coast Guard type-approved for use in the unique water conditions of the Great Lakes; and
- Viable for installation in specific vessel types.

Also, while the ballast water exchange/flushing requirement does not apply to CSA vessels, as they do not operate beyond the EEZ, we recommend that the State include language that reflects that this condition is applicable to vessels that "operate outside the U.S. Exclusive Economic Zone and the Canadian Equivalent" so as to avoid confusion.

**Response 6-7:** While we understand and appreciate these comments, their resolution rests with U.S. EPA in their permitting decision, not with the Ohio EPA certification. First, states cannot certify conditions less restrictive than those in an NPDES permit. Secondly, the draft certification does not change the definitions or compliance schedules in the permit. If U.S. EPA changes these permit conditions, nothing in the Ohio certification would alter them.

**Comment 8:** **Support for the continued practice of ballast water flushing or exchange after treatment standards go into effect was expressed by:**

**The American Great Lakes Ports Association  
The Toledo / Lucas County Port Authority  
The Cleveland / Cuyahoga County Port Authority  
The Government of Canada**

**Response 8:** We acknowledge these comments and appreciate the support for this condition. We have retained it in the final certification.

**Comment 9:** **While we accept the additional requirement to conduct ballast water flushing/exchange in addition to treatment for vessels transiting the Great Lakes, we would have expected that it would be accompanied by a comprehensive scientific rationale. We are aware that current research, as well as tests conducted at the Great Ships Initiative (GSI), indicate that ballast water exchange and flushing, combined with treatment, could result in a ten-fold reduction in risk. However, there is currently no published information regarding the results of the land-based tests undertaken at GSI nor have any shipboard tests been conducted. As well, we would respectfully suggest that an assessment be undertaken of how this requirement would impact the shipboard crews who will be responsible for its implementation, as there may be some conflict with the requirements of the Convention on Standards of Training, Certification and Watchkeeping.**

**Response 9:** The comment partly makes the case for continuing the flushing/exchange requirement, noting the GSI studies that show an environmental benefit. Not only have GSI studies suggested a significant reduction in risk, their studies

indicate that, for some treatment systems, flushing/exchange may do more organism control than the treatment process. If so it is an important fail-safe for treatment systems that do not function as advertised, or under all conditions. The treatment type-approval process is not yet very transparent with respect to approval and assessment criteria. Until it is, we believe it unwise to place too much trust in treatment systems.

Our assessment of continued flushing/exchange is based on the current practicality of the process. Vessels currently do the exchange/flushing with apparently little adverse effect on commerce. To continue the practice makes protective sense to the Agency under the circumstances. Because it is an existing and partially effective process indicates that an in-depth study is not necessary.

**Comment 10:**        **The draft 401 Certification prohibits the discharge of seawater ballast inside the breakwalls of Ohio ports. Ohio should consider removing this requirement until it is supported by science.**

**There is no evidence to suggest that the discharge of salt water from ballast exchanges has or will cause a degradation of the water quality in Ohio ports. The Ohio EPA fact sheet states that salt water exchanges “will be rapidly lethal if discharged where fresh water organisms will be exposed to the full concentrations”. However, to our knowledge there have been no incidents recorded where such rapid lethality has occurred. Nor do we know of any research indicating that sea water can have a negative impact on harbour aquatic ecosystems. As research has demonstrated that salt water exchange is an effective means of preventing the introduction of ANS, we are frankly perplexed by the inclusion of this assertion in the draft certification.**

**Response 10:**     This condition, included in the first Ohio certification, is based on toxicity identification / reduction evaluation data that shows acute toxicity to dissolved solids in the 2100-3000 range (as measured by the LC50). With sea water having dissolved solids concentrations much higher than that, it is reasonable to conclude that habitable areas of acute toxicity may occur near the ballast water discharges. Ohio WQS do not allow mixing zones to be rapidly lethal, which we interpret as the LC50 concentration [OAC 3745-1-

04(D)]. While we recognize that salt water exchange is an effective means of reducing the number of invasive organisms in ballast water, it is a biocide for fresh water organisms. Managing residuals of dissolved solids is important in the same sense that managing residuals of biocides such as chlorine. This rule also prohibits toxic conditions in ambient waters. Given these observations, we believe this to be a reasonable certification condition and have retained it in the final certification.

**Comment 11:**           **The biocide limits in the draft certification add restrictions another layer of requirements that will not significantly improve the environmental protectiveness of the new VGP. We recommend that this section of the 401 Certification be deleted and the VGP 2013 discharge limits be adopted. In the draft VGP, U.S. EPA has established protective discharge limits for chemicals commonly used in ballast water treatment systems, as well as an aggressive monitoring program. CSA believes that these discharge limits alone will prevent degradation to the aquatic environment in the Great Lakes.**

**Response 11:**       The biocide limits in the draft certification were developed using fresh water toxicity data for these chemicals; the same limits in the VGP2 were developed using salt water toxicity data. The values in the certification are inside-mixing-zone maximum WQS (also known as Final Acute Values or Secondary Acute Values). These types of standards are typically applied at the discharge point to prevent rapidly lethal conditions in areas of the receiving water near the discharge {OAC 3745-1-04(D) and 3745-1-07}. Because they are applied at the discharge point, they are often based on discharge characteristics instead of receiving water characteristics.

Because of the discharge characteristics of ballast water from ocean-going vessels, we have reconsidered many of these limits. The discharges are primarily salt water because of the salt water flushing/exchange requirement. Therefore salt water toxicity data is appropriate for the assessment of these end-of-pipe standards. As a result, we are certifying the VGP2 biocide limits for all chemicals except residual chlorine. The limits for chlorine are being retained from the previous 401 certification; these limits are

uniformly applied across the Great Lakes States, and are proposed to continue in other states' permits and certifications for ballast water.

**Comment 12:** Neither the VGP2 nor the draft 401 certification meets Ohio water quality standards. Applicants for a federal permit must provide the federal agency with a state certification that a discharge will comply with WQS. Therefore the CWA requires states to provide a water quality certification before a federal license is issued. Section 401(d) of the CWA also requires the certification to set forth limits and monitoring requirements necessary to ensure compliance with WQS. Ohio rules require that the Director determine that an activity meets WQS before certifying.

The VGP2 does not ensure compliance with WQS and therefore violates 40 CFR 122.44(d)(1)(vii)(A). EPA's IMO limits set the concentrations of organisms allowed in ballast water; these limits reduce, but do not eliminate, the threat of new invasions. Invasive species are not like conventional pollutants – there is no known safe concentration that can be discharged. EPA provided no evidence that achieving IMO standards will eliminate the risk of further harmful invasions. The best claim is that it will add another layer of protection. EPA admits that ballast water discharges will have the reasonable potential to contribute to WQS exceedances even after meeting IMO standards. The IMO standards, therefore, will not protect water quality standards. As a result, limits are required that will protect WQS.

EPA's limit is not protective. EPA claimed, without justification, that a numeric WQBEL is infeasible, and included a narrative statement that WQS must be met. The operator of a vessel could not possibly determine when the discharge occurs or whether the discharge contained any new non-indigenous species.

Further, EPA is not allowed to consider economic or technical feasibility when deciding which WQBELs are necessary to protect WQS under the CWA.

Given this, Ohio EPA must set numeric WQBELs for ballast water discharges. The draft certification contains no basis for determining that VGP2 will not

**prevent or interfere with attainment or maintenance of WQS. The certification should include:**

- **numeric WQBELs on invasive species based on the natural invasion rate that will prevent introduction and spread;**
- **requirements that all vessels meet WQBELs;**
- **a compliance schedule to meet WQBELs; and**
- **monitoring requirements to make compliance with WQBELs enforceable.**

**Response 12:**

We agree that the certification must assure protection of WQS; however, the Ohio narrative water quality standard being used to set ballast water treatment standards states: "To every extent practical and possible as determined by the director, these waters shall be.....Free from materials entering the waters as a result of human activity producing .... other conditions in such a degree as to create a nuisance;"

While zero discharge of aquatic nuisance species is the most straight-forward way to meet this nuisance standard, the means to achieve it must be "practical and possible". This means that treatment must be available that can reliably achieve the standard.

Ohio EPA has included IMO treatment standards, with an additional requirement for ballast water flushing/exchange. Ohio EPA believes that this is the maximum control that is "practical and possible".

**Comment 13:**

**The VGP2 improperly exempts from treatment requirements vessels travelling short distances, vessels with a ballast capacity of less than 8 cubic meters, and unmanned barges. A vessel may introduce or spread invasive organisms regardless of the size of ballast water discharge, or the distance travelled.**

**Response 13:**

Organisms are assumed to be able to travel or drift short distances based on their own mobility or lake/river currents. In addition, most treatment systems using biocides require a residence time that cannot be satisfied during a short-term voyage; treatment therefore will not be effective for these

vessels. For vessels with less than 8 cubic meters of ballast capacity, treatment systems for these smaller vessels do not currently exist. Unmanned barges often do not have pumps for ballast water; none of the current treatment systems work under these conditions.

For all of these discharges, the BMP permit conditions to reduce transport of organisms apply.

**Comment 14:** **The draft certification fails to require the necessary monitoring. Ohio EPA must require vessel operators to monitor all classes of organisms in ballast water discharges – not just those organisms U.S. EPA identified as feasible given practical constraints – in order to assure compliance with numeric WQBELs.**

**Ohio EPA should also require operators to report the results monthly. Ohio should also require operators to report any discharge or uptake incident contrary to the terms of the VGP2 within 24 hours of the incident. This will allow the State or citizens to take timely action against operators who fail to comply with permit requirements.**

**Response 14:** The permit requires monitoring of parameters that are practical to test, and requires that indicator parameters be monitored for those parameters that cannot practically be monitored. This meets the requirements of state and federal regulation; therefore we are certifying these portions of the permit.

The permit requires direct monitoring of bacterial indicators and residual biocides (or their derivatives).

Biological organisms in the two general classes regulated by the permit cannot be directly monitored due to constraints identified in the U.S. EPA fact sheet for this permit. The permit substitutes treatment system function monitoring and monitoring of bacteria as indicators of overall organism kill.

The treatment systems are designed for maximum kill. These treatment systems contain flow meters, sensors and alarms that detect biocide presence and provide warning of insufficient treatment. The permit prohibits discharge of ballast water when alarms and other warnings indicate that treatment may be incomplete. Regular maintenance of

these treatment systems is also required by the Ballast Water Management Plan, one of the BMPs specified in the permit.

The monitoring results for bacteria parameters (E. coli. and enterococci) provide a direct indication of the level of organism kill achieved by the treatment system.

**End of Response to Comments**