

NATURAL RESOURCES BOARD AGENDA ITEM

SUBJECT: Update on Ballast Water Permitting

FOR: JANUARY 2010 BOARD MEETING

TO BE PRESENTED BY: Russ Rasmussen, Watershed Management Bureau Director

SUMMARY:

WDNR General Permit for Ballast Water and Fact Sheet attached

(note: this item was on the December agenda but due to inclement weather, it was moved to January)

RECOMMENDATION: For Information Only

LIST OF ATTACHED MATERIALS:

- |    |                                     |   |     |                          |          |
|----|-------------------------------------|---|-----|--------------------------|----------|
| No | <input checked="" type="checkbox"/> | Fiscal Estimate Required                              | Yes | <input type="checkbox"/> | Attached |
| No | <input checked="" type="checkbox"/> | Environmental Assessment or Impact Statement Required | Yes | <input type="checkbox"/> | Attached |
| No | <input checked="" type="checkbox"/> | Background Memo                                       | Yes | <input type="checkbox"/> | Attached |

APPROVED:

Russell Rasmussen  
Bureau Director,

January 27, 2010  
Date

[Signature]  
Administrator,

1/22/10  
Date

Charlyll Caldwell  
Secretary, Matt Frank

01-22-2010  
Date

## Permit Fact Sheet

### General Information

Permit Number:	WI-0063835-01-0 General Permit
Activity:	Ballast Water Discharge
Permittee:	U.S. and international commercial vessels $\geq 50$ meters in length and $\geq 8$ m <sup>3</sup> ballast capacity
Discharge Location:	Ports of call or in transit on commercial shipping routes
Receiving Water:	Lake Michigan, Lake Superior, and other locations with commercial shipping traffic

### General Description of Activities Covered Under This GP

General permits (GP) are designed to cover discharges from a category of activities that are similar in character. When a GP is issued, many dischargers meeting its requirements may be covered under the same GP. The Department has several categories of GPs covering hundreds of facilities. For activities eligible for coverage under a general permit, the Department sends a cover letter and a copy of the permit to the facility. The cover letter includes the Department's determination that a discharge is covered under the GP. A facility may need to be covered under more than one GP, depending on the different types of waste streams that a facility discharges. However, a facility that requires an individual permit for any part of its discharge may have all of its discharges covered under one individual permit.

Growing concerns and damage to the environment caused by aquatic invasive species (AIS) has raised the awareness on the need to regulate ballast water from vessels, which are the major vector for AIS introduction into the Great Lakes. However, the discharges incidental to the normal operation of a vessel, including ballast water, have been exempt through Environmental Protection Agency (EPA) regulations under the Clean Water Act since 1973. In 2005 the U.S. District Court for the Northern District of California determined the exemption by EPA exceeded its authority. In accordance with the court ordered time frame EPA prepared a NPDES general permit to regulate ballast water and 25 other discharges from commercial vessels, which became effective December 19, 2008. The vacatur of the exemption became effective February 6, 2009. For more information on the history regulating ballast water and other discharges incidental to the normal operation of a vessel, refer to the EPA Vessel General Permit (VGP) and accompanying fact sheet available at the EPA web site:

[http://cfpub.epa.gov/npdes/home.cfm?program\\_id=350](http://cfpub.epa.gov/npdes/home.cfm?program_id=350)

The discharge of ballast water is a new category of dischargers that EPA will now regulate under a National Pollutant Discharge Elimination System (NPDES) general permit. EPA determined that effluent limit guidelines, a document with an in depth evaluation of how to regulate a category of dischargers, could not be prepared for vessels in the time allowed by the court. Consequently, the EPA general permit primarily relies on established best management practices, and doesn't include treatment requirements or numerical water quality based effluent limits. EPA's VGP requires oceangoing vessels to perform seawater exchange or flushing of the ballast water tanks as is currently required under U.S. Coast Guard regulations. This practice has helped reduce but not prevent the introduction of AIS from oceangoing vessels, and the Department believes a stringent treatment discharge standard is necessary. The Department is proposing this general permit for this purpose because the requirements in the EPA VGP aren't stringent enough to protect Wisconsin's water quality.

States, including Wisconsin, have been told by EPA they lack the legal authority to issue a NPDES permit to regulate a ballast water discharges. The proposed state general permit is being issued under the independent state authority to regulate discharges of pollutants of the waters of the state pursuant to Wis. Stat. §283.31. EPA has stated verbally that they will not object to a state permit issued under state authority. Both Michigan and Minnesota have issued state permits regulating ballast water discharges under independent state authority.

Pending federal legislation and regulations could supersede regulation under the Clean Water Act's NPDES permit program, making any work done by EPA or States to regulate ballast water moot. Congressional legislation could shift the legal burden of regulating ballast water from the EPA to the U.S. Coast Guard. If this happened, the permitting functions would lie with the U.S. Coast Guard. Depending on how the legislation is drafted, state permit options may no longer be viable because of federal preemption issues. The U.S. Coast Guard also has proposed federal treatment standards for ballast water discharges which include numerical standards. Although Wisconsin strongly supports a federal numerical standard, the Department believes it could wait no longer for federal action, and fulfill its duty to protect the quality of Wisconsin's waters.

## **Rational for Permit Requirements**

### **1 Applicability**

Those vessels issued the EPA VGP that have a ballast tank capacity of at least 2114 gallons (8 cubic meters) and are at least 164 feet in length (50 meters), must receive coverage under this permit to discharge ballast water in the waters of Wisconsin. The two criteria are consistent with International Maritime Organization (IMO) convention and the Minnesota criteria for their State Disposal System permit. A vessel between 79 feet and 164 feet would need only the EPA VGP and not the Wisconsin permit.

The permit recognizes five criteria that would qualify a vessel for an exemption from coverage. A permit does not need to be obtained if any of the following apply:

1. Vessels with a sealed ballast tank that are unable to discharge. If the ballast tanks have the potential to discharge the vessel must be permitted, even if it does not intend to discharge ballast into waters of the state.
2. The vessel's movement is restrained to only one Captain of the Port Zone, as defined by the U.S. Coast Guard.
3. The vessel's ballast water is removed and treated by others, such as an on-shore treatment facility.
4. Vessels with flow-through ballast that is constantly being exchanged such as the ballast-free ship concept designed and patented at the University of Michigan.
5. Vessels of the U.S. Armed Forces because they are subject to their own regulation.

### **2 Permit Coverage**

Applicable vessels receive automatic coverage under this permit until 6 months after the effective date of the permit. This allows time for vessels to submit a Notice of Intent (NOI) to request coverage. After this time vessels must submit a NOI within 30 days prior to discharging into water of the state. In order to avoid any unnecessary duplication, a copy of the same NOI sent to EPA requesting coverage under the VGP may be used to request the Wisconsin Ballast Water Discharge General Permit. The Department will grant coverage under the permit after the NOI is reviewed. A PDF version of the NOI is available at the EPA web site:

[http://www.epa.gov/npdes/pubs/vessel\\_vgp\\_noi.pdf](http://www.epa.gov/npdes/pubs/vessel_vgp_noi.pdf)

Coverage under the Wisconsin general permit would be terminated upon the submittal of a Notice of Termination by a vessel. As with the NOI process, the Department will make use of the EPA termination of coverage process to avoid unnecessary duplication.

### **3 Prohibited Discharges**

Permitted vessels are prohibited from discharging certain types of substances - captured intake filtration solids, ballast tank sediment, and seawater. These prohibitions and limitations on what may be discharged are effective immediately.

### **3.1 Intake Filtration Residuals**

Any solid material strained out of the water intake system or sea chest, other than fine material entrained in the water and backwash, must be collected and disposed of properly (refer to Wisconsin's solid and hazardous waste regulations as noted in Subsection 3.2 of the permit). This requirement is similar to what the Department requires of facilities that have surface water intakes, such as power plants that withdraw cooling water from Lake Michigan. Any of the larger material collected by the intake may not be returned to the water, even though the vessel isn't the source of the material.

### **3.2 Disposal of Solids Removed from Ballast Tanks or by Treatment System**

Any accumulated solids, sediment, or biological material in the ballast tanks, or generated by a treatment system, may not be discharged back into waters of the state; but, must be disposed of properly (refer to Wisconsin's solid and hazardous waste regulations as noted in Subsection 3.2 of the permit). The release of sediment violates the water quality standard for objectionable deposits on the bed of a water body in s. NR 102.04(1)(a), Wis. Adm. Code. The re-suspension of sediment when washing ballast tanks and then discharging the sediment laden wash water into surface water while in transit is a common practice. The permit prohibits this practice effective immediately, consistent with the constraints on sediment in EPA VGP (Subsection 2.2.3.3) that says vessels must "clean ballast tanks regularly to remove sediments in mid-ocean or under controlled arrangement in port, or at dry dock". The permit also requires the documentation of when ballast tanks are cleaned and where solids are disposed of if that occurs within the jurisdiction of Wisconsin.

### **3.3 Seawater**

Seawater in other than residual amounts may not be discharged unless the effluent complies with the chloride effluent limit. Wisconsin has chloride toxicity criteria in ch. NR 106, Wis. Adm. Code that are applicable to the point source discharge from vessel ballast tanks. The limit is necessary to prevent the occurrence of acute toxicity at the point of discharge from the vessel. Because salinity is the parameter measured by oceangoing vessels to determine compliance for ballast tank flushing or exchange with seawater of at least 30 ppt, the limit is also expressed in parts per thousand of salinity. Explanatory notes describe the chloride to salinity conversion, and that the chloride limit doesn't conflict with the requirement for ballast water exchange or flushing.

## **4 Ballast Water Requirements**

### **4.1 Ballast Water Treatment Requirements**

A table identifies the ballast water discharge standards, requirements for biocides, what vessels the requirements apply to, and the effective date.

The ballast water discharge standard that limits the number of allowable viable organisms is a technology based performance limit. As EPA has not developed effluent limit guidelines for discharges from vessels, because they were previously exempt from the Clean Water Act, the Department is using the authority of best professional judgment to set technology based limits. Whenever effluent limit guidelines are not available for pollutants (in this case AIS is considered a biological pollutant), best professional judgment limits are established as the highest quality technical opinion developed by the regulator after consideration of all reasonable available and pertinent information, in accordance with §402(a)(1) of the Clean Water Act.

The limits for chlorine, other biocides, and chloride are water quality based effluent limits to prevent aquatic toxicity, under our authority in ch. NR 105 and 106, Wis. Adm. Code.

#### **4.1.1 Treatment Feasibility Determination**

Because the development of ballast water treatment technology is evolving the Department will conduct a treatment feasibility review by the end of 2010 to determine the availability of commercial technology that can treat ballast water to

the proposed Wisconsin Standard. The Department will review available information, and welcomes expert opinions on the emerging technology to provide treatment levels 100 times the proposed IMO standard. Refer to the attached "Treatment Feasibility Review Scope of Work" that outlines the use of a Technical Advisory Committee to assist the Department in the decision making. The Department will decide whether the Wisconsin Standard will remain in the permit, or whether the permit will be modified (following public notice procedures) to change the discharge standard to that endorsed by the IMO. Effective dates could also be modified. After the decision is made, three years would be available for vessels to install the applicable treatment system.

#### **4.1.2 Oceangoing Vessel Requirements**

Oceangoing vessels are subject to ballast water discharge standards in the Wisconsin general permit. The immediate concern addressed by this permit is to prevent the introduction of any new AIS or diseases (such as Viral Hemorrhagic Septicemia or VHS) by oceangoing vessels.

#### **4.1.3 Great Lakes Vessel Requirements**

Great Lakes vessels are not subject to ballast water discharge standards in the Wisconsin general permit. The Department may impose discharge standards on Great Lakes vessels in the next reissuance of the general permit. What the standards will be are still under consideration. While oceangoing vessels are responsible for introducing nonindigenous species, the Great Lakes vessels are not. Great Lakes vessels however, with their large ballast water capacities, have the potential to spread organisms from port to port in the Great Lakes. To reduce this threat, Great Lakes vessels are required to follow best management practices to prevent the spread of existing AIS or disease. The prohibition on the discharge of sediment in Subsection 3.2 should be effective in reducing the risk of spreading is because organisms in various life stages are present and more concentrated in this sediment.

### **4.2 Monitoring Requirements and Effluent Limitations**

#### **4.2.1 Ballast Water Discharge Standards**

For oceangoing vessels the Department is proposing a Wisconsin Standard that is more restrictive than the proposed Regulation D-2 standard from the International Maritime Organization (IMO) 2004 convention. The Wisconsin Standard is consistent with the proposal by the U.S. representatives at the IMO convention made on January 5, 2004, and the proposed standard in the U.S. Congressional legislation H.R. 2830 Coast Guard Authorization Bill of 2008. Because of a lack of scientific information on ballast water treatment, a conservative approach is appropriate, and a challenging standard is necessary to encourage development of treatment technologies. By December 31, 2014, existing oceangoing vessels must comply with Wisconsin Standards for how many viable organisms may be contained in ballast water discharges. New ocean going vessels constructed after January 1, 2012, must comply with the Wisconsin Standard.

More restrictive standards are necessary because the current IMO proposal also does not result in a significant reduction in the risk for introducing AIS (as discussed below for the three classes of organisms). It is critical to reduce the number of viable organisms in ballast water because the lower the concentration, the less likely it is a sustainable population can be established in the new ecosystem. Considering the large volume of ballast water discharged, the concentrations standard must be very low so the invasion process can not begin.

For macro-zooplankton and nekton (organisms  $>50 \mu\text{m}$ ) the proposed IMO standard is  $<10$  viable organisms per cubic meter, which is only 10 times less than the 100 per cubic meter background concentration of organisms typically observed in ballast water. The management practice of ballast water exchange or flushing is capable of achieving this same reduction. The Wisconsin permit limit of  $<1$  per 10 cubic meters represents a 1000 times reduction compared to background levels.

For protists and phytoplankton (organisms  $10\text{-}50 \mu\text{m}$ ) the proposed IMO standard is  $<10$  per ml, which is equivalent to background concentration of organisms typically observed in ballast water, so the standard represents no improvement. The Wisconsin permit limit of  $<1$  per 10 ml represents a 100 times reduction compared to background levels.

For microbial organisms E. Coli and Enterococci the proposed IMO standards are less protective than those to protect human health. The Wisconsin permit limit reflects standards for water used for bathing. One of indicator microbes for the discharge standards that is included in the proposed IMO standards, Vibrio cholera, has been excluded from the monitoring requirements in Tables A and B because the analytical technique has not been validated by EPA.

#### **4.2.2 Biocides**

This section of the permit is applicable to both oceangoing vessels and Great Lakes vessels that choose to use biocide treatments on their ballast water. If a vessel uses chlorine or other biocides at any time they are subject to limitations equivalent to any other surface water discharger. Existing water quality based effluent limits for chlorine apply to a vessel discharge. The acute limit of 38 µg/L, calculated in accordance with ch. NR 106, Wis. Adm. Code, applies when chlorine or another halogen is used as a biocide. A chronic limit is unnecessary for the short term and intermittent discharges of ballast water. The established Wisconsin water quality based limit is more stringent than the 100 µg/L limit contained in the EPA VGP. If other biocides or water treatment additives are used for treatment the Department will determine the use restriction (serves as a surrogate effluent limit) according to Subsection 4.2.2.2. Biocides used in ballast water are also subject to approval under the Federal Insecticide, Fungicide, and Rodenticide Act.

The inclusion of limits for chlorine and other biocide treatments in the permit is not an endorsement by the Department for the use of these dangerous chemicals. Use of chemicals creates concerns including health risks to sailors, corrosion of metal, and environmental toxicity. Biocides may only be appropriate in limited use, such as disinfection for VHS.

#### **4.3 Ballast Water and Sediment Management Plan**

Vessels must have an existing Ballast Water and Sediment Management plan, to comply with U.S. Coast Guard requirements and the EPA VGP. The plan must be updated to reflect any changes in response to the requirements in this permit. The Department doesn't intend to routinely review these plans, but reserves the right to inspect them, if necessary.

#### **4.4 Monitoring Plan**

Because of variations among ships and treatment systems, and to allow flexibility, ballast water discharge monitoring must be established by each vessel depending on the monitoring that would be useful for the operation of the treatment system, and for determining compliance with discharge standards. The permit does contain some minimum monitoring requirements. The permittee must prepare a monitoring plan prior to treating ballast water. The plan must be revised as necessary when ever appropriate. The Department doesn't intend to review these plans, but reserves the right to inspect them, if necessary.

#### **4.5 Ballast Water Treatment System Approval**

Wisconsin has a requirement for plan and specification approval of wastewater treatment systems (ch. NR 108, Wis. Adm. Code), and a ballast water treatment system is a reviewable project. An approval is required prior to installation of a treatment system. The Department intends to develop guidance for a fast track approval process as outlined below in (a) through (h). This will eliminate unnecessary duplication of the technical reviews for verification and approval of treatment systems performed by the IMO, EPA, U.S. Coast Guard, The Great Ships Initiative or other similar authorities who have the technical expertise. There is no need for individual approval of treatment systems by the Department.

If all of the following criteria are met, the Department intends to approve the plans and specifications for treatment systems related to this general permit:

- (a) The treatment consists of one or more treatment methods that are verified by the IMO, U.S. EPA Environmental Technology Verification Program, U.S. Coast Guard or equivalent technology verification process acceptable to the Department.

- (b) All ballast water management treatment systems used in lieu of ballast water exchange or flushing are approved by the U.S. Coast Guard and comply with all applicable U.S. Coast Guard ballast water management regulations.
- (c) The treatment system performance has been confirmed at a freshwater research, development and technology evaluation facility (such as the Great Ships Initiative) prior to implementation onboard the vessel.
- (d) The treatment system will meet the applicable biological performance standards and biocide effluent limits contained in this permit.
- (e) The treatment system is adequately sized and designed for the hydraulic capacity of the ballast tanks.
- (f) A professional engineer was consulted on the design for installation of the approved treatment system on the vessel.
- (g) An operation and maintenance manual is prepared for the treatment system.
- (h) The permittee shall submit a brief summary of the plans and specifications to the Department that consists of an engineering report to document compliance with the approval criteria. The engineering report shall include the following:
  - Schematic diagram of the treatment system, and its location on the vessel.
  - A summary of the design describing what mechanical, chemical, physical, or biological processes used.
  - Any calculations used for determining the design capacities to adequately treat the vessel's ballast tanks.
  - Other information requested by the Department that it determines necessary to evaluate the treatment system.

## **4.6 Safety Exemption**

In recognition that vessels may be subject to adverse conditions on the water, an exemption is provided to automatically allow the curtailment of permit requirements. When the safety exemption is needed the vessel must document the circumstances in the on board log book. The exemption provision is consistent with the EPA VGP.

## **4.7 Record Keeping and Reporting**

Record keeping consist of two components: (1) an on board log book to document activities associated with discharging ballast water that must be kept and made available to the Department upon request, and (2) an annual discharge monitoring report (DMR). Information on the disposal of sediment cleaned from the vessel is also to be reported with the annual DMR in accordance with Subsection 3.2.

## **5 Compliance Schedules**

The permit contains four tables with dates for compliance with permit requirements.

### **5.1 Permit Coverage**

To obtain coverage under WPDES general permit WI-0063835-01, permittees are directed to submit a copy of the Notice of Intent (NOI) form for the EPA Vessel General Permit. The automatic coverage, and a six month allowance for submitting a NOI are consistent with the EPA VGP.

### **5.2 Monitoring Requirements and Effluent Limitations**

The effective dates for the applicable discharge standards in Subsection 4.2 are set to prevent the introduction of AIS into the Great Lakes in an expeditious time frame. For existing oceangoing vessels, the January 1, 2014 effective date is two years sooner than the IMO schedule of 2016, because the Department believes a more aggressive is needed, while still allowing a reasonable time to install treatment systems on oceangoing vessels. For new vessels, the 2012 date is the same as the IMO. There are currently 9 treatment systems that are or will soon be approved by the IMO to comply with the IMO standard. Two are verified to work in freshwater.

The biocide effluent limits in Subsection 4.2.2 are effective immediately. The Department has the authority in ch. NR 106, Wis. Adm. Code for calculating water quality based effluent limits or use restrictions for biocides. This limit is independent of the effective dates for the discharge standards in Subsection 4.2.1.

### **5.3 Treatment System Plan Approval**

The permittee must obtain Department approval of plans and specifications for ballast water treatment systems. However, there is an automatic streamlined process described in Subsection 4.5. The requirements for the approval must be met prior to installation of the onboard treatment system.

### **5.4 Monitoring Plan**

The permittee must prepare a monitoring plan prior to treating ballast water. It does not need to be submitted to the Department for approval.

### **Other Comments:**

An antidegradation review for the issuance of this new general permit has not been performed because it is not applicable in situations for existing dischargers that have not previously been permitted. The Department is in agreement with the EPA fact sheet for the VGP that says vessels covered should not be considered a new or increased point source discharge, which is what typically triggers an antidegradation review.

### **Proposed Expiration Date:**

January 31, 2015

Attachment: Treatment Feasibility Review Scope of Work

### **Prepared by:**

Wisconsin Department of Natural Resources  
Bureau of Watershed Management

**Date:** November 10, 2009

## Treatment Feasibility Review Scope of Work

Subsection 4.1.1 of the WPDES general permit requires the Department to make a determination on whether ballast water treatment technologies are available that meet the four criteria in the permit to comply the Wisconsin ballast water discharge standard. To assist the Department in making this important determination, a "Technical Advisory Committee" or TAC may be formed to provide a forum for reviewing technical information on ballast water treatment. The TAC would consist of stake holders as well other interested parties who have technical expertise to offer.

The Department intends to invite those willing to provide technical advice from a cross section of groups to help the Department reach an unbiased decision. The TAC may include some or all of the following:

- Transoceanic shipping interests
- Great Lakes shipping interests
- Environmental groups
- University academics
- Port authorities
- Great Ships Initiative researchers
- US Environmental Protection Agency
- US Coast Guard
- Great Lakes organizations

Once these groups express their availability and interest to participate on a broad based TAC, the Department will conduct TAC conference calls or meetings. The Department intends to hold one or two sessions, but will hold more if necessary to make its determination. Each invited group will be asked to give a presentation and provide any relevant documentation they have in support of their technical knowledge on whether the four criteria below are met.

1. Treated effluent will comply with the Wisconsin Standard in Table A.
2. A compliant treatment system is commercially available.
3. Onboard installation is feasible for existing vessels and new vessels.
4. Sufficient time exists to comply with the discharge standard effective dates.

After the TAC completes its task, the Department will take under advisement all the information received from the TAC. Additional sources of information besides the TAC may also be taken into consideration by the Department. A decision on the treatment feasibility determination will be made by the Department no later than December 31, 2010.

*Note: If the WPDES general permit fails to become effective because of adjudication proceedings, some parts or the entire permit may not become effective, including the time frame for the treatment feasibility determination.*



## State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor  
Matthew J. Frank, Secretary

101 S. Webster St.  
Box 7921  
Madison, Wisconsin 53707-7921  
Telephone 608-266-2621  
FAX 608-267-3579  
TTY Access via relay - 711

Subject: Ballast Water Discharge General Permit WI-0063835-01-0

Dear Interested Party:

The Department has made its decision to issue the general permit to regulate ballast water discharges from commercial vessels that enter waters of the state. The Environmental Assessment (EA) has been certified by the Department and pursuant to s. NR 150.03(8)(i)2.a., Wis. Adm. Code, an EIS is not required.

You are receiving this letter because you have shown an interest in the development of the proposed Ballast Water Discharge General Permit and EA by attending the public informational hearing, writing us a letter, sending us an email, or requesting information. The Department has completed its review of the comments received and has prepared written responses. Based upon this public participation process, the proposed Ballast Water Discharge General Permit was revised.

The following permit documents may be electronically accessed at the link below:

[http://dnr.wi.gov/news/mediakits/mlk\\_ballast.asp](http://dnr.wi.gov/news/mediakits/mlk_ballast.asp)

- Final General Permit
- Permit Fact Sheet
- Summary of Public Comments and Department Responses
- Changes to the Permit since the Public Notice
- Environmental Analysis
- Notice of Final Determination

Thank you for being part of the public participation process.

Sincerely,

Russell Rasmussen, Director  
Bureau of Watershed Management

Date Signed: November 18, 2009

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

NOTICE OF FINAL DETERMINATION TO ISSUE A WISCONSIN POLLUTANT DISCHARGE  
ELIMINATION SYSTEM (WPDES) PERMIT No. WI-0063835-01-0 FOR BALLAST WATER DISCHARGES

Activity Regulated: The discharge of ballast water from vessels at least 164 feet in length and a ballast tank capacity of 2114 gallons or more (50 meters and 8 cubic meters).

Discharge Location: Ports of call or in transit on commercial shipping routes in Wisconsin.

Receiving Water: Lake Michigan, Lake Superior, and other locations with commercial shipping traffic.

Brief Description of the General Permit: Ballast water discharges from vessels in Wisconsin waters which meet the applicability criteria in the permit may be covered under the general permit for authorization to discharge ballast water. The proposed general permit contains requirements to minimize the introduction and spread of aquatic invasive species (AIS) or diseases (such as Viral Hemorrhagic Septicemia or VHS) that may be found in ballast water. A treatment discharge standard limits how many viable aquatic organisms may be contained in ballast water discharges. The state general permit supplements the Environmental Protection Agency Vessel General Permit with the inclusion of numeric ballast water treatment requirements and prohibitions that the Department believes are necessary to protect water quality. The ballast water treatment is required for existing oceangoing vessels starting in 2014, and for new oceangoing vessels in 2012.

The Wisconsin Standard for ballast water discharges is 100 times more restrictive than the proposed International Maritime Organization standard (IMO). The implementation schedule for existing oceangoing vessels is two years earlier than the proposed IMO schedule. Because treatment technology is still evolving, the Department will make a treatment feasibility determination by December 31, 2010, to decide whether treatment technology is commercially available to meet the Wisconsin Standard. If treatment technology is not commercially available, the permit will be modified to change the discharge standard to IMO, and the implementation schedule may also change. Certain vessels are exempt from numeric ballast water treatment standards, including Great Lakes vessels that operate exclusively in the Great Lakes. The Great Lakes vessels must implement ballast water and sediment management plans to minimize the spread of AIS and disease. They may also be subject to numeric ballast water treatment standards when this general permit is reissued.

Date Permit Signed/Issued: November 18, 2009

Date of Effectiveness: February 1, 2010

Date of Expiration: January 31, 2014

Following the March 23, 2009 public informational hearing and close of the comment period on March 30, 2009, the Department has made a final determination to issue the WPDES permit for the above-named general permit, and has certified the environmental assessment. Comments received on the proposed permit and applicable Wis. Adm. Codes were used as a basis for this final determination.

The Department has the authority to issue, modify, suspend, or revoke WPDES permits and to establish effluent limitations and permit conditions under ch. 283, Wis. Stats. The Department's findings of fact and conclusions of law are included in this Notice of Final Determination, the attached response to comments and the WPDES permit. In the issuance of the final permit, the Department has considered the information in the environmental assessment and the comments received on it. The Department has complied with the requirements of ch. NR 150, Wis. Adm. Code and s. 1.11, Wis. Stats. Within the authority under ch. 283, Wis. Stats., and consistent with social, economic and other essential considerations, the Department has included conditions in the WPDES permit to minimize impacts to water resources of the state.

As provided by s. 283.63, Stats., and ch. 203, Wis. Adm. Code, persons desiring further adjudicative review of this final determination may request a public adjudicatory hearing. A request shall be made by filing a verified petition for review with the Secretary of the Department of Natural Resources within 60 days of the date the permit was signed (see permit signed/Issued date above). Further information regarding the conduct and nature of public adjudicatory hearings may be obtained by contacting the Department of Natural Resources, and by review of ch. NR 203, Wis. Adm. Code, s. 283.63 Stats., and applicable code law.

Information on file for this permit action may be inspected and copied at this address: Department of Natural Resources, Bureau of Watershed Management WT/3, WPDES Permits, 101 South Webster Street, PO Box 7921, Madison, Wisconsin 53707-7921, Monday through Friday (except holidays and DNR furlough days), between 9:00 a.m. and 3:30 p.m. Information on this permit action may also be obtained by contacting the permit drafter (Paul Luebke) at 608-266-0234, email paul.luebke@wisconsin.gov, or by writing to the Department. Reasonable costs (usually 20 cents per page) will be charged for copies of information in the file other than the public notice and fact sheet. Pursuant to the Americans with Disabilities Act, reasonable accommodation, including the provision of informational material in an alternative format, will be made to qualified individuals upon request.

# ENVIRONMENTAL ASSESSMENT

## Aquatic Invasive Species in the Great Lakes and the WDNR Ballast Water Discharge General Permit

Prepared by Wisconsin Department of Natural Resources  
Bureau of Watershed Management  
November 2009

### PROPOSED ACTION

The Wisconsin Department of Natural Resources (WDNR) public noticed on February 23, 2009, a general permit for commercial vessels which includes effluent discharge standards for ballast water. This permit also included an aggressive compliance schedule for implementation. The permit specifies biological effluent discharge standards and biocide effluent limits that, based upon best professional judgement, represent the best practicable technology currently available pursuant to § NR 220.21, Wis. Adm. Code. The Department believes a permit for regulating ballast water beyond what EPA has developed is necessary to prevent the release of additional aquatic invasive species (AIS) and protect water quality standards in Wisconsin. Six commenters were specific on the Environmental Assessment (EA) and we have revised this final EA based on those comments received. A copy of the issued General Permit is attached to this document.

Wisconsin's General Permit will require discharges of ballast water to meet numeric technology based effluent limits based upon the number of living organisms in the discharge by 2014 for all existing ocean-going ships. Vessels constructed on or after January 1, 2012 would have to meet these requirements prior to operation. The permit is intended to minimize the further release of aquatic invasive species. The general permit requires all ocean-going vessels to meet discharge standards set at 100 times more stringent than the IMO standards. This discharge standard is similar to that adopted by New York in its § 401 Water Quality Certification. Plans and specifications of the treatment systems would require approval by the Department, to confirm the treatment has been approved by the USCG or an equivalent approval process, is effective and would comply with the discharge standards.

There is an exemption in this permit when ballast water is pumped from a vessel off-ship for treatment on another vessel or to a ballast water treatment system on-shore. Additionally, the permit allows for an alternative discharge limit, if the technology is not available to meet the discharge standards by December 31, 2011.

The federal general permit (VPG), effective December 19, 2008, that applies to all discharges incidental to the normal operation of a vessel<sup>1</sup> includes a technology based standard for all ocean-going vessels. This standard has been required by the United States Coast Guard (USCG) for all vessels that enter the St. Lawrence Seaway since March 2008 and has proven ineffective as the introduction of aquatic invasive species has continued. On August 28, 2009, the USCG

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<sup>1</sup> A federal court granted an extension to when a permit was required. Although the federal permit became effective on December 19, 2008, a permit was not required until February 6, 2009.

published in the federal register a new proposed ballast water discharge standard rule which requires a phased approach to ballast water discharge standards, with IMO being required in phase-one, and up to 1000 times IMO standards in phase-two. The Department's general permit contains technology based effluent limitations that represent the best practicable control technology currently available.

The 2010-11 biennial budget bill signed by Governor Doyle in July 2009 provides for statutory authority to establish a discharge performance standard for ballast water. *See* 2009 Wis. Act 2, creating Wis. State. § 283.35 (1m).

## **AFFECTED ENVIRONMENT**

The Great Lakes contain 20 percent of the world's available fresh surface water supply. Because of that, the Great Lakes are critical to the health and welfare of all the Great Lakes states. They provide drinking water for millions of state residents. They support manufacturing and recreational industries providing thousands of jobs. They generate power and assimilate our wastewaters. But most importantly they define and support a huge freshwater system and related terrestrial ecosystem which is unique in the world.

The Great Lakes region, with its inland waters, contains an astonishing array of plants and animals—46 species that are found nowhere else in the world, and 279 globally rare plants, animals and natural communities. Hundreds of millions of birds, including North America's rarest songbird, the Kirtland's warbler, migrate through and breed in the Great Lakes region—making it crucial to their long-term health. One fifth of all fish species in North America are found in the Great Lakes, the lakes hold 20 percent of the worlds and 95 percent of North America's surface fresh water. Lake Superior is the largest and deepest of the Great Lakes.

At the Port of Superior, the lower stretch of St. Louis River includes a 12,000-acre freshwater estuary, which serves as the primary nursery for the fish found in western Lake Superior. The estuary is home to more than 45 native fish species, including walleye, lake sturgeon, muskellunge, northern pike and smallmouth bass. It also is a migratory stopover and breeding area for songbirds, shorebirds, raptors and waterfowl.

The waters and lands of the Door Peninsula harbor have a vast array of rare plants and animals, making it the most biologically rich region in Wisconsin. Globally rare species, such as the Hine's emerald dragonfly and glacial relict land snails, are found here.

## **BACKGROUND**

### **What is Ballast Water?**

Ballast water is water that is taken on by cargo ships to compensate for changes in the ship's weight as cargo is loaded or unloaded, and as fuel and supplies are consumed. Ballast water may be used for a number of different purposes, such as maintaining stability, maintaining proper propeller and bow immersion, and to compensate for off-center weights. Thus, ballast water is essential to the proper functioning of cargo ships, as well as to the safety of its crew.

Because ballast water is primarily used to compensate for changes in cargo, it is generally taken in or pumped out at the ports along a ship's route. When a ship takes on ballast water, whether freshwater or saltwater, organisms found in that water are typically taken in as well. These organisms are carried in the ballast tanks of the ships until the ship arrives at its next port, where, due to changes in the distribution of the ship's cargo, they may be released into a new ecosystem. Due to the size of ballast tanks on modern cargo ships, and the speed with which these ships can reach their destinations, organisms are increasingly able to survive the journey to a new ecosystem. If these foreign organisms manage to survive and reproduce in the new ecosystem, they can cause severe problems in the natural and human environment.

### **Why are invasive species an issue in the Great Lakes?**

Aquatic invasive species are non-native fish, aquatic animals, and plants that have been introduced into the Great Lakes systems and threaten the ecological integrity and economic future of the Great Lakes region.

AIS are increasingly recognized as a serious problem in Wisconsin. Both intentional and unintentional releases of invasive species pose serious threats to the health, economic welfare, and ecological integrity of Wisconsin waters and interfere with the uses of the waters of Wisconsin as identified in § NR 102.01(2). Particularly problematic is preventing new introductions of AIS into Wisconsin waters and controlling the spread of existing AIS between waterbodies. The key to preventing new AIS introductions is to control the transport mechanisms or pathways of release of AIS into Lakes Michigan and Superior and inland state waters. The highest prevention priority is the control of ballast water discharges.

Once AIS are introduced and established, they compete with the native species for the limited resources and available habitat with the native species, often out competing them and destroying the native population. Several examples of this have proven true with the zebra mussel, quagga mussel, white perch, ruffe, sea lamprey, and eurasian milfoil. This disruption of the natural ecosystem by the non-native species results in our threatened and endangered resources becoming more precarious as they are unable to compete with the invasives. These species not only invade and cause disruption of the Great Lakes, but also are transferred eventually to inland waters.

The impacts from these invaders to the ecosystem and economy are real. Zebra mussels clog water intake pipes costing millions of dollars annually in maintenance costs. Aquatic invasive species compete with native species for food and habitat. Because there are no natural predators to keep them in check, they have a distinct advantage over native species. In many cases, their population explodes after just a few short years and they can dramatically alter the ecosystem. Once in the system, it is almost impossible to eliminate these invaders. The best strategy is to prevent them from entering the system in the first place.

### **DIRECT AND CUMULATIVE EFFECTS OF THE PROPOSED ACTION**

The General Permit requires treatment of ballast water to a specific biological standard prior to discharge. This would significantly change how ballast water is discharged, which currently have no treatment or biological standard of any kind.

Wisconsin's goal for AIS management is, to the maximum extent possible, prevent any new introductions of nuisance exotic species and prevent any new introduced nuisance exotic species from becoming naturalized or spreading to new areas.

Ship and barge-mediated introductions and spread of AIS in the Great Lakes should be eliminated, through the development and implementation of a regulatory permitting system which ensures that ballast waters are adequately treated prior to discharge to waters of Wisconsin.

The primary way aquatic invasive species enter the Great Lakes is through ballast water discharge of ocean-going vessels. Invasive species have proven to be a significant and costly problem for the Great Lakes. The subsequent spread of these introduced species may in part be attributed to Laker vessels (which cannot move through the St. Lawrence seaway because of their size) that are significantly larger and carry up to ten times the volume of ballast water on their ships. More than 185 aquatic invasive species have entered the Great Lakes, disrupting the food chain, fouling beaches and clogging infrastructure, costing citizens, industry, and businesses in excess of \$200 million annually. One new non-native species enters the Great Lakes on average every 28 weeks. The spread of these species is documented by all vessels that carry ballast water throughout the Great Lakes.

Zebra mussels alone cost U.S. taxpayers up to \$5 billion dollars annually. Sea lamprey control costs taxpayers over \$15 million each year. Zebra/Quagga mussels filter out food disturbing food webs, negatively impacting native fish species. In addition, they sequester nutrients in the nearshore, reducing the food availability in the open water.

A recent example of the continued AIS threat is the Department's discovery of viral hemorrhagic septicemia (VHS) in 2007. The Department responded immediately to try to understand how this virus was transferred between water bodies and between fish species. The response included testing, monitoring, outreach and education, reassigning fish production and quarantining of fish hatcheries. Additionally, fish used for stocking were lost. The Department tracked the costs to our fish health staff as well as our intensive VHS outreach effort including testing and monitoring. For FY'2008, the Department quantified over \$1.3 million of costs relating to the VHS response including installation at the Wild Rose Hatchery of egg disinfection rooms at both the coldwater and coolwater buildings and UV disinfection for the coldwater reuse and a Biosecurity template for hatchery operations.

The Department is continuing to analyze the VHS outbreak and anticipates the next steps will include integrating the AIS hazard analysis and critical control point plan that have been developed for each hatchery into the biosecurity template. The Department estimates that this will take approximately 60 hours per small and medium sized hatchery for a total of up to 480 hours; and 80 hours for each large hatchery for a total number of hours up to 320 hours. These are actual costs the department has incurred trying to respond to just one new invasive species. These are also avoided costs that we cannot quantify of fisherman not fishing because of VHS being present and the lost of native fish in the waters of the state.

Table One contains examples of invasive species introduced through ballast water and how they have impacted the Great Lakes ecosystem.

**Table One: Invasive Species Introduced by Discharges of Ballast Water and Impact on the Great Lakes Ecosystem**

Type	Common Name	Origin	Date	Mechanism	Impacts
Fish	sea lamprey	Atlantic	1830s	Canals, Shipping (Fouling)	Well documented threat to survival of Great Lakes sports fish (esp. trout and salmon); present control measures are costly and imperfect.
	Eurasian ruffe	Eurasia	1986	Shipping (Ballast Water)	Competition for forage, predation on native species
	round goby	Eurasia	1990	Shipping (Ballast Water)	Aggressive predator, out-compete native fish, raids native fish nests, takes over native fish habitat
Zooplankton	spiny water flea	Eurasia	1984	Shipping (Ballast Water)	Competition for forage, predation on native species
Plants	phragmites, common reed, and giant reed	North America and Europe	1800s	Shipping (Ballast Water)	Out-competes and eliminates other marsh species with similar habitat requirements
Macroinvertebrates	quagga mussel	Eurasia	1991	Shipping (Ballast Water)	Dominant benthic settler, crowds out other benthic organisms, changes character of benthic habitat, damages submerged structures, clogs underwater pipelines, eliminates native plankton at bottom of food web, diverts food energy to bottom habitat.
	zebra mussel	Eurasia	1988	Shipping (Ballast Water)	Dominant benthic settler, crowds out other benthic organisms, changes character of benthic habitat, damages submerged structures, clogs underwater pipelines, eliminates native plankton at bottom of food web, diverts food energy to bottom habitat.

This table is adapted from the Great Lakes ANS Panel Research Coordination Committee coordinated through the Great Lakes Commission. These species (among other from other sources) have been identified as priority aquatic nuisance species for the Great Lakes for 2008. In addition, the USGS database identifies 79 species total as known non-indigenous species introduced via ballast water.

Requiring effective treatment of ballast water discharges is intended to prevent the continued introduction of new AIS, and thereby preventing the economic cost of treatment, removal, and monitoring of AIS costing hundreds of millions of dollars each year. Additionally, the potential immeasurable effects to the impaired ecosystems would be prevented.

The US Lake Carriers Association and the Canadian Shipowners Association have both written comments stating that requiring any treatment to their Great Lakes vessels would have economic and environmental consequences. They contend that installing ballast water treatment systems on existing vessels is not feasible within current ship design. Their ballast tanks are not connected to each other and they carry up to 16 million gallons of ballast water in up to 22 different tanks. They are also docked for no more than eight hours and discharge ballast water at high rates to prevent extreme costs. They believe these vessels do not pose a risk of introducing

new invasive species into the Great Lakes and, therefore, should be exempt from any requirements for additional treatment to ballast water prior to discharge.

The general permit is not anticipated to result effects on energy usage.

## **ALTERNATIVES**

The Department incorporates by reference the USCG Environmental Impact Statement (EIS) dated April 2008 and published in the federal register on August 28, 2009. *See* 74 FR 44632. This EIS contains information about the alternatives we describe below in much greater detail.

### **No Action**

On December 19, 2008, the EPA issued a federal general permit which is effective in Wisconsin waters. EPA is responsible for the issuance and enforcement of the VGP. The Wisconsin DNR does not have to take any action. This approach would be consistent with other states that either waived their Section 401 certification, or certified that the VGP was protective of their state water quality standards without the imposition of additional state requirements. None of the other Great Lakes States fall into this category. Both the states and the shipping industry have expressed a preference for a consistent federal approach instead of individual states regulating vessels with potentially differing requirements.

The “no action” alternative would not impose a new program on the state. The federal vessel GP does not require any treatment or discharge standard and only requires ships to flush ballast water tanks in the open ocean. This has been the method used by ocean-going vessels pursuant to Coast Guard regulation. As stated in the EIS of the U.S. Coast Guard proposed ballast water discharge rule for freshwater ecosystems, requiring “No Additional Action”, would provide “current impacts would continue—erosion, trophic interactions, changing community structures, effects on ecosystem services”. *See* 74 FR ES-4. On page 3-14 of the USCG EIS it states “The Great lakes system’s overall condition is fair to poor based on a variety of ecosystem indicators (EPA 2005).” It has not worked well in the past as new species have continued to be introduced into the Great Lakes. The current ballast water management regulations enforced by Transport Canada and the Saint Lawrence Seaway have required flushing of tanks that contain residuals, all water in ballast tanks has been managed to reduce the potential for introduction of species. Ballast water exchange is not 100% effective so new aquatic invasive species could be introduced. While the larger organisms have been reduced from ballast water exchange, there are still the bacteria and virus’ that may continue to be a major risk. The magnitude of risk reduction remains poorly resolved.

The National Wildlife Federation and the Wisconsin Wildlife Federation have written comments stating that the Great Lakes will not be protected from invasive species by an EPA permit or by requiring IMO standards to all vessels. They believe that unregulated ballast water discharge has had a devastating impact on the Great Lakes and has caused major financial losses to lake shore owners, and Wisconsin municipalities and industries. They believe the EPA’s VGP technology-based effluent limitations—ballast water exchange and saltwater flushing –have been ineffective, and will not be effective in preventing further discharges of non-indigenous aquatic species in vessel ballast water. They also believe that requiring IMO standards to vessel ballast water discharges provides no basis that achieving those performance standards will

reduce the risk of future introduction of non-indigenous aquatic species to a level that will reasonable assure compliance with water quality standards.

### **State General Permit Regulating Discharge of Ballast Water**

States, including Wisconsin, have been told by EPA they lack the legal authority to issue a NPDES permit to regulate a ballast water discharges. The proposed state general permit is being issued under the independent state authority to regulate discharges of pollutants of the waters of the state pursuant to Wis. Stat. §§283.31 and 283.35 (1m). EPA has stated verbally that they will not object to a state permit issued under state authority. Both Michigan and Minnesota have issued state permits regulating ballast water discharges under independent state authority.

Pending federal legislation could also supersede regulation under the Clean Water Act's NPDES permit program, making any work done by the state to regulate ballast water moot. Congressional legislation could shift the legal burden of regulating ballast water from the EPA to the U.S. Coast Guard. If this happened, the permitting functions would lie with the U.S. Coast Guard. Depending on how the legislation is drafted, the state permit options may no longer be a viable option because of federal preemption issues.

In the current regulation of the discharge of ballast water, there are three different discharge standards and one technology based standard. These options are discussed below. Given the extended compliance dates in the discharge standards, immediate environmental benefit would be minimal. The extended compliance schedules are necessary because the current treatment technology is developing.

#### **1. IMO Standards**

The International Maritime Organization (IMO) standards, regulation D-2 for the discharge of ballast water, are a proposed set of discharge standards that consists of a set of indicator parameters with limits for how many viable organisms may remain alive or present after treatment. IMO Regulation D-2 also includes a proposed implementation schedule for the larger commercial vessels (>5000 metric tons) which provides that the IMO standards apply to new vessels constructed after January 1, 2012 and to all vessels beginning January 1, 2016. The IMO represents the most widely accepted and tested standards in the world. These standards are proposed standards which require ratification by 30 countries before it has the force of international law. As of September 30, 2008, only 16 countries have signed the IMO convention. The United States has not signed it.

The ocean going vessels owners have indicated that the IMO standards would be acceptable, if adopted by states prior to being ratified and becoming law. Ballast water treatment technology is evolving and the IMO is part of the research effort, including an evaluation and approval process for treatment technologies that would comply with the standard. Several companies from around the world are currently making significant progress in developing treatment systems that would comply with the IMO standards. However, methods to monitor treatment systems to assess the concentration of viable organisms, is often lacking, making performance evaluations difficult.

The availability of technology for on-board treatment to achieve the desired effluent quality, especially for standards more restrictive than the IMO, and the reasonability of the timeline for

installation, is a concern of shipping industry. Several treatment methods are being tested now but have not been approved. Several Great Lake states (Illinois, Indiana, Minnesota, Ohio, and Pennsylvania) have included in their Section 401 water quality certification requirements for ballast water treatment to the level of the proposed IMO standards.

The EPA VGP does not include discharge standards for ballast water, because it is EPA's intention to rely on technology based standards of ballast water exchange and flushing for the initial permit issuance. Discharge standards could be added later based on the outcome of the onboard treatment technology and the development of effluent limit guidelines.

The EIS for the USCG rule states that IMO provides minor to moderate reduction of AIS introductions in freshwater ecosystems.

## **2. Enhanced IMO Standard - 100 times (New York)**

In New York's water quality certification for the VGP, they adopted numeric discharge limits 100 times more restrictive than the proposed IMO standards. Compliance is required for existing vessels by 2012. California requires compliance with more stringent (1000 times IMO) numeric limits for existing vessels by 2014 or 2016, depending on vessel size. There are several exceptions to New York's certification requirements, including Great Lakes vessels operating exclusively in either Lake Ontario or Lake Erie. Additionally, a time extension beyond 2012 is allowable if technology is not available to comply. For new vessels constructed after January 1, 2013, the numeric discharge limits become more stringent, up to 1000 times IMO standards (similar to California), plus the addition of standards for bacteria and viruses.

New York Department of Environmental Conservation determined in their best professional judgment, the existing best management practices for ballast water exchange and flushing do not ensure compliance with the Clean Water Act, may not be effective, and have highly variable results in preventing the release of viable aquatic invasive species. New York concluded that the proposed IMO standards would only provide a marginal improvement, and are not restrictive enough to protect the water quality according to New York state statutes. The New York staff believes technologies exist that are being developed commercially to comply with concentration based discharge standards 100 to 1000 times more restrictive than the proposed IMO standards. Currently, treatment technologies are being tested, but it is not clear whether there are treatment technologies that meet these limits. The recommendation for standards more restrictive than the proposed IMO standards were also made by U.S. government representatives participating at the IMO Convention, and in proposed legislation in House of Representative Bill 2830 (Coast Guard Authorization Act of 2008).

The USCG—EIS for their proposed rule states that this standard (or their alternative 3) would have a moderate reduction of AIS introductions into freshwater ecosystems. There would be fewer negative changes to natural community structure and lessen negative impacts on the ecosystem services.

## **3. Enhanced IMO Standard - 1000 Times (California)**

The California Marine Invasive Species Act of 2003 directed the California State Lands Commission to move expeditiously toward elimination of the discharge of non-indigenous species into the waters of the state based on the best available technology economically

achievable that should protect the beneficial uses of the waters. California approved regulations in 2005 that became effective in 2006, which required ballast water management practices, such as ballast water exchange, no discharge, or discharge to a reception facility. The Coastal Ecosystems Protection Act of 2006 directed the Commission to complete rule making on recommended standards and an implementation schedule.

The California Coastal Ecosystem Protection Act also directed the Commission to conduct an assessment of the efficacy, availability and environmental impacts of ballast water treatment systems. In the latest information from the Commission (final report dated January 2009 [http://www.slc.ca.gov/Spec\\_Pub/MFD/Ballast\\_Water/Documents/2009BiennialRpt\\_MISP\\_Final.pdf](http://www.slc.ca.gov/Spec_Pub/MFD/Ballast_Water/Documents/2009BiennialRpt_MISP_Final.pdf)) a total of 30 treatment systems were under evaluation. California will not be approving ballast water treatment systems, but will focus on developing procedures for dockside inspection of vessels for verifying compliance with the discharge standards. California has provided to technology vendors ballast water treatment technology testing guidelines to standardize the evaluation of treatment systems as they become available commercially.

California's interim discharge standards set a limit 1000 times more restrictive than the proposed IMO standard for organisms 10 to 50  $\mu\text{m}$  in size. For organisms  $>50 \mu\text{m}$  the limit is no detection, and for organisms  $<10 \mu\text{m}$  the limits are the same or only slightly more restrictive than IMO by 2 or 3 times. California and New York have standards for bacteria and viruses, that neither the IMO nor any other state has adopted. The standards described above apply to large commercial vessels ( $>5000$  metric tons) constructed after January 1, 2012; and to existing vessels beginning January 1, 2016. California's final discharge standard of zero detectable viable organisms goes into effect in 2020.

The USCG—EIS for this standard (or their alternative 4) states that AIS introductions into freshwater ecosystems would be reduced moderate to major, resulting in fewer negative changes to the natural community structure and lessened negative impacts on ecosystem services.

#### **4. Treatment Technology Based (Michigan)**

The Michigan Department of Environmental Quality has adopted a list of treatment methods they believe are environmentally sound and effective in preventing aquatic invasive species, and have include them in their ballast water general permit. This was done in response to state legislation in 2005 that required a state permit for discharges into Michigan waters from oceangoing vessels. To date, Michigan has permitted 607 vessels, for which none have discharged ballast water in the waters of the state. The general permit for regulating ballast water that was issued in 2007, included the following four acceptable treatment methods: hypochlorite treatment, chlorine dioxide treatment, ultra violet light radiation treatment preceded by suspended solids removal, and deoxygenation treatment. If a vessel wanted to use a different technology, an individual permit could be issued, if the treatment performance was equal to or better than the four treatment technologies Michigan approved as acceptable.

If a vessel implements one or more of the treatment practices, and complies with any applicable effluent limit associated with the technology, they would be found in compliance with the ballast water permit. The treatment method Michigan has accepted are based on their review of available information on what technologies could be implemented and be effective. These treatment methods do not reflect the IMO standards. Because of the characteristics of the ship traffic at ports in Michigan, vessels operating in Michigan waters do not discharge ballast water.

This is because the ships unload cargo in Michigan and take on water for ballast. Because no vessels in Michigan waters have needed to discharge ballast, none of the vessels have installed or used any of the acceptable treatment methods. The practicality of these treatment methods remains untested.

Several governmental efforts continue to develop, evaluate and approve ballast water treatment technologies. Two federal programs that support the development of treatment technologies are the U.S. Coast Guard Shipboard Technology Evaluation Program, and the EPA Environmental Technology Verification Program. A significant question for the Great Lakes States is whether the treatment systems, especially those proposed for IMO standards or more stringent, is how will they function in a freshwater environment. Currently, the ones under IMO evaluation are only evaluating the proposed standards for two levels of salinity. The Great Ship Initiative project, located at the Port of Superior, has worked to receive validation as a ballast water testing facility, and will be evaluating whether treatment technologies are effective for the Great Lakes and freshwater ballast.

### **Proposed prohibition of seawater discharge**

The Department has looked at the Michigan's method of regulating saltwater discharge and they essentially have prohibited the discharge of all seawater at Michigan Ports. This has worked for Michigan as they have essentially forced the seawater ballasted vessels to discharge at another port in another state, including Wisconsin. Since the Port of Superior is the busiest port in the Great Lakes for ballast water discharges, this is not an effective option for us to consider.

### **State Individual Permit regulating Discharge of Ballast Water**

Instead of the issuing a general permit for the entire category of vessels to regulate the discharge of ballast water, as is allowed under § 283.35 (1m), Wis. Stats., an individual permit could be issued to each vessel. There could potentially be 300 or more vessels that require permit coverage. The standards requirement contained in an individual permit would most likely be identical to those found in the proposed general permit. However, with the individual permit the Department has the ability to customize the permit to address specific areas for regulation that may be unique to a vessel. Regulation to that level of detail would be extremely resource intensive and time consuming. And there could be little or nothing to be gained environmentally by issuing individual permits. Environmental impacts would be essentially the same whether a vessel was regulated under a general permit or an individual permit. The additional amount of level of effort and resources needed to issue individual permits would be substantial.

Even if a vessel qualifies for coverage under a general permit, the owner or operator of the vessel may request coverage under an individual permit, and the Department must issue an individual permit in accordance with § 283.35 (2), Wis. Stats.

### **Alternatives to Seaway**

The 2008 Great Lakes Shipping, Trade, and Aquatic Invasive Species report prepared by the National Research Council of the National Academies states on p. 19 that *"The seaway has played, and continues to play, a key role in certain markets—notably the shipment of grain, iron ore, coal, and steel—where the constraints imposed by the seasonality of the navigation season*

*and the relatively long transit times can be accommodated. Nonetheless, the seaway is only one component of the Great Lakes region's complex multimodal freight transportation system. Within this system, alternative routes and modes compete for the various commodities moving within or through the region between supply and demand centers in North American and overseas. Consideration of modal competitive dynamics suggests that, in general, rail rather than truck is the most viable alternative to waterborne transportations for many of the relatively low-value bulk commodities moving on the seaway.....while there are alternatives to the seaway for moving goods, the future competitive position of the seaway versus the various alternatives is difficult to assess with any degree of certainty...Changes in global climate and in world maritime trade could affect both the numbers and the types of vessels using the seaway in the future and could, therefore, affect efforts to enhance the Great Lakes region's potential for global trade and Closing the seaway to all vessel traffic—is not a realistic solution... Such closure would not eliminate further ship-vectored AIS introductions by vessels transiting the seaway but would reduce substantially the risk of such introductions....to eliminate further AIS introductions by vessels transiting the seaway.....Attempts to solve the AIS problem in the Great Lakes by shifting marine cargoes to alternative modes of transportation would need to take account not only of introductions of invasive species but also of other environmental impacts of transportation, including greenhouse gas emissions, criteria air contaminant emissions, accidents, and noise...questions about capacity and logistical constraints and the effects of trying to move even more freight on an already overburdened system...the cessation of transoceanic shipping on the Great lakes would result in a transportation cost penalty of approximately \$55 million annually....A more recent study estimated the transportation cost saving for all Great Lakes St. Lawrence Seaway shipping, rather than merely the transoceanic shipping through the seaway considered by Taylor and Roach (Transport Canada et al. 2007). The estimated savings of \$2.7 billion per year were calculated in terms of the transportation and handling costs that these shippers have incurred than they used other modes of transportation.”*

## **SIGNIFICANCE OF CONTROVERSY OVER ENVIRONMENTAL EFFECTS**

FedNav, the largest operator of 70 oceangoing vessels in the St. Lawrence Seaway and Great Lakes system had supported the Department's previous proposed requirement of the IMO standards for all vessels. CanforNav, a significant Canadian company, operating ocean going vessels joins FedNav in that support of IMO treatment standards for all vessels.

The Lake Carriers Association in a November 17, 2008 letter, stated their Great Lakes shipping industry in 2007, loaded over 20 million tons of coal and 8.7 million tons of iron ore in Superior Harbor, alone. They represent 63 vessels and stated that requiring IMO standards for these vessels by 2016 would end domestic Great Lakes shipping in Wisconsin's ports. They believe the treatment technologies have been developed for ocean going vessels and salt water treatment, not fresh water treatment, nor for large 16 million gallon ballast tanks. They have requested that Lakers be exempt from the requirement to install ballast water treatment systems. They state that it will bring an end to US-Flag Great Lakes shipping throughout the State's Great Lake Ports and bring economic ruin on the State. They believe the ocean going vessels will have to treat to IMO standards to be able to continue to operate worldwide, while Lakers are not competing on a global market. The Canadian Lakers represent 68 vessels and stated similar concerns and requested that they be exempt from any treatment standards to their vessels.

## SUMMARY OF ISSUE COMMUNICATION ACTIVITIES

List agencies, citizen groups and individuals contacted regarding the project (include DNR personnel and title) and summarize public contacts, completed or proposed.

Date	Contact	Comment Summary
2/10/2009	Noel Bassett, VP Operations American Steamship Co	MPCA & WDNR staff toured three vessels and their ballast tanks in Duluth: Indiana Harbor, American Spirit, and American Victory
1/14/2009	Independent maritime consultant - telephone call from John Stewart (954-565-4044)	Representative for U.S. delegation at IMO convention. Inquired about Wisconsin's intentions for regulating ballast water. The Great Ships Initiative is being validated as a facility to test ballast water treatment systems. Off-ship treatment system could work for some vessels, but presents insurmountable problems for others.
1/8/2009	FedNav - telephone call from Marc Gagnon (514-878-6470).	Represents 70 oceangoing vessels. Opposed to 100 times IMO standards due to lack of technology to comply. IMO acceptable.
11/24/2008 and 11/17/ 2008	Lake Carriers Association - letter and contested case hearing request from James H. I. Weakley.	Represents 63 laker vessels. Great lakes only vessels should be exempt from ballast water treatment because it's not feasible, and they aren't the problem. State authority is questioned. Contested 401 certification.
11/24/2008	Canadian Shipowners Association - letter from Don Morrison.	Canadian laker fleet is not a risk for introducing aquatic invasive species and should be exempt. Ballast water treatment not feasible, and it won't increase protection. If water transportation is shut down and shifts to land transportation modes that's bad for the environment. Contested 401 certification.
11/21/2008	The Development Association - letter from Andrew Lisak.	Represents City of Superior, Douglas County, and over 140 businesses. Supports federal regulation and H.R. 2830. Absent federal regulation supports uniform Great Lake state approach with IMO standards. Economic consequences if shipping industry is reduced or ceases.
11/20/2008	American Great Lakes Ports Association - letter from Steven A. Fisher.	Represents public port authorities on the U.S. side of the Great Lakes. Supports federal regulation and H.R. 2830. Opposed to state regulation of interstate and international maritime commerce. Potential for unworkable conflicting regulations. Appreciates consistency with other Great Lakes states.
11/20/2008	National Wildlife Federation and Wisconsin Wildlife Federation - Contested case hearing request from Andy Buchsbaum and George Meyer.	Represents wildlife interests of more than one million members nationwide. Need to include ballast water effluent limits and monitoring to protect water quality. IMO standards will not reduce the risk of aquatic invasive species. Contested 401 certification.
11/19/2008	Wisconsin Commercial Ports Association - letter Dean R. Haen.	Represents 14 commercial ports in Wisconsin. Supports federal regulation and H.R. 2830. Opposed to state regulation of interstate and international maritime commerce. Potential for unworkable conflicting regulations. Appreciates consistency with other Great Lakes states.

11/17/2008	Polish Steamship Company - letter from Christine A. Fazio	Represents a major oceangoing shipping company. Preference for one consistent federal permit without state conditions. Supports IMO and U.S. Coast Guard requirements, and would comply with treatment standards. Appreciates consistency with other Great Lakes states.
11/17/2008	FedNav - letter from George H. Robichon.	Represents the largest owner of oceangoing vessels in the Great Lakes. Supports IMO standards. Implement at the federal level, not state or provincial level, but understands the state frustration with lack of federal action.
10/9/2008	National Wildlife Federation and Wisconsin Wildlife Federation - meeting with Marc Smith, Nick Schroeck, and George Meyer.	Discussed 401 certification with DNR (Susan Sylvester - Permits Section Chief, Roger Larson - Deputy Bureau Director, Paul Luebke - Permit Drafter, and Marney Hoefler - Legal Services Attorney). State should not certify the EPA vessel general permit because it's inadequate. They provide their recommendation on what the state should do, and supports state issued permits in the absence of adequate federal regulation. Supports 100 time IMO standard
On going.	Minnesota Pollution Control Agency - Mary Jean Fenske, ballast water coordinator.	Wisconsin has frequent discussions with counterparts in Minnesota on their ballast water activities in order to maintain a level of consistency and to share information.
On going.	Other Great Lake States and Organization.	Conference call discussions on ballast water regulation.
On going	U.S. EPA Region 5 and Headquarters.	Conference call discussions and web cast on ballast water regulation.
March 2009	374 comments received on Proposed General Permit	Separated comments in 26 categories and responded in the Ballast Water General Permit Notice of Final Determination dated November 9, 2009.
8/28/09	US CG propose rule in federal register	Reviewed rule and EIS, prepared comments for public meeting and formal agency comments.
9/24/09	Meeting with USCG, EPA, St. Lawrence Seaway Dev. Corp; IJC, States, Research Scientists	Detroit meeting to discuss status of science, what ships could do, what states are doing, status of USCG and EPA regulations
10/02/09	USCG public meeting	Chicago, public comments on proposed rule

**DOCUMENTS, PLANS, STUDIES OR MEMOS ON WHICH THIS DNR DRAFT GENERAL PERMIT IS BASED:**

- Great Lakes Shipping, Trade, and Aquatic Invasive Species 2008 Report by the National Research Council of the National Academies.
- Port of Milwaukee Off-Ship Ballast Water Treatment Feasibility Study Phase I and II Reports.
- U.S. Coast Guard Environmental Standards Update, Ballast Water Activities by the International Maritime Organization (IMO) (Winter 2008).
- EPA Vessel General Permit and Fact Sheet.
- Minnesota Pollution Control Agency State Disposal System Ballast Water Discharge General Permit.
- Michigan Department of Environmental Quality Ballast Water Control General Permit.

- State § 401 Water Quality Certifications to EPA's Vessel General Permit from the following states: Connecticut, Indiana, Michigan, Minnesota, New York, Ohio, and Pennsylvania.
- Shipping Industry Ballast Water Coalition 10/20/2008 response letter to New York § 401 Water Quality Certification.
- 2009 Assessment of the Efficacy, Availability and Environmental Impacts of Ballast Water Treatment Systems for Use in California Waters (Final January 2009).
- New York State Department of Environmental Conservation, Division of Environmental Permits December 17, 2008 letter to USEPA on 401 Water Quality Certification to EPA's VGP.
- January 2006 California State Lands Commission Report on Performance Standards for ballast water discharges in California waters.
- January 5, 2004 International Conference on Ballast Water Management of Ships, Consideration of the draft International Convention for the Control and Management of Ship's Ballast Water & Sediment. Ballast Water Discharge Standards—Regulation D-2
- October 3, 2005 Ballast Water Discharge Standards Report and Recommendation of the the California Advisory Panel on Ballast Water Performance Standards
- May 23, 2003 IMO Marine Environmental Protection Committee, Harmful Aquatic Organisms in Ballast Water
- November 2008 USEPA report: Predicting Future Introductions of Nonindigenous Species to the Great Lakes, Milwaukee and Superior are both named as Great Lakes ports at greatest risk for invasion by the 14 modeled species from ballast water discharges
- USCG August 28, 2009, proposed federal register Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters; Draft Programmatic Environmental Impact Statement (221 pages); Proposed Rule and Notice p.44632-44670.

The Draft Programmatic Environmental Impact Statement that was published on August 28, 2009, with the proposed U.S. Coast Guard ballast water discharge standard rule (*See* 74 FR 44632), details many of the Department's assertions in addition to more analysis of social and economic effects and costs. The Department references this EIS in whole for the EA.

This Environmental Assessment and the General Permit will be on our website at

<http://www.dnr.state.wi.us/org/water/wm/ww/gpindex/gpinfo.htm>

DECISION (This decision is not final until certified by the appropriate authority)

In accordance with s. 1.11, Stats., and Ch. NR 150, Adm. Code, the Department is authorized and required to determine whether it has complied with s.1.11, Stats., and Ch. NR 150, Wis. Adm. Code.

Complete either A or B below:

A. EIS Process Not Required



The attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action which would significantly affect the quality of the human environment. In my opinion, therefore, an environmental impact statement is not required prior to final action by the Department.

B. Major Action Requiring the Full EIS Process



The proposal is of such magnitude and complexity with such considerable and important impacts on the quality of the human environment that it constitutes a major action significantly affecting the quality of the human environment.

Signature of Evaluator <i>Susan Sylvester</i>	Date Signed 11-11-2009
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Number of responses to news release or other notice: 374

Certified to be in compliance with WEPA Environmental Analysis and Liaison Program Staff <i>Joe Paul</i>	Date Signed 11/11/2009
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NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the Department, you should know that Wisconsin statutes, administrative codes and case law establish time periods and requirements for reviewing Department decisions.

To seek judicial review of the Department's decision, ss. 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. Such a petition shall be filed with the appropriate circuit court and shall be served on the Department. The petition shall name the Department of Natural Resources as the respondent.

# WDNR General Permit for Ballast Water Discharges Response to Public Comments on Environmental Assessment

November 2009

Of the 374 comments received on the WDNR General Permit for Ballast Water Discharges (GP) during the public notice period, only six commented specifically on the Environmental Assessment (EA). This document presents a summary of those comments and the Department's response. Other public comments were directed at the proposed general permit, and are presented with responses in the Notice of Final Determination for Ballast Water General Permit, Permit No. WI-0063835-01-0 available at source of document. By means of this comment response document the Department revises this EA based on the comments received.

**Comments on EA Adequacy:** A number of comments described inadequacies in the EA, including:

No discussion of sediment control plans, and the importance of sediment control to preventing the spread of aquatic invasive species (AIS).

No analysis of potential environmental effects from the proposed GP, including: 1) the socio-economic effects to the Ports of Superior, Milwaukee or Green Bay; 2) the reduction of agricultural and other Wisconsin exports; 3) the impacts from storage of biocides or chemicals necessary for on-shore treatment of ballast water tanks; 4) the hazardous impacts to vessels and seafarers in having to store chemicals and biocides on board vessels, particularly if stronger chemicals/biocides are needed to destroy organisms from ships that in-take fresh water when unloading cargo at a Great Lake port just prior to arriving to Wisconsin to pick up new cargo; 5) the impacts to Great Lakes waters due to the potential discharge of chemicals or biocides (e.g., if chlorine were used with a treatment system); and 6) traffic, air quality, climate change and noise impacts due to the potential shift to shipment of cargo in and out of Wisconsin by truck or rail to neighboring Great Lakes states that have adopted the IMO Convention program. The EA only addresses the effects of invasive species on the environment, not of the proposed agency action.

The EA does not evaluate the impacts of the proposed GP with respect to both the resultant increase of fossil fuel consumption and greenhouse gas emissions.

The EA does not include details of the beneficial aspects of the proposed project, both short-term and long-term, and the economic advantages and disadvantages of the proposal.

**Response:** We acknowledge that additional information could have been included in the EA. We are therefore revising the EA to include by reference the U.S. Coast Guard's Ballast Water Discharge Standards Draft Programmatic Environmental Impact Statement (USCG dpEIS) for Standards for Living Organisms in Ship's Ballast Water Discharged in U.S. Waters Document Number (DOT USCG-2001-10486), published on August 28, 2009. Other information is also added as described below.

On August 28, 2009 the USCG also published in the federal register a new proposed ballast water discharge standard rule which requires a phased approach to ballast water discharge standards, with IMO being required in phase-one, and up to 1000 times IMO standards in phase-two. The Department's general permit has numeric treatment standards because the federal VGP is not protective of the state water quality standards. The USCG's proposed rule also recognizes the need for more restrictive standards.

The 2010-11 biennial budget bill signed by Governor Doyle in July 2009 provides for statutory authority to establish a discharge performance standard for ballast water. (2009 Wis. Act 2, creating Wis. Stat. s. 283.35(1m)(2009).)

The USCG dpEIS evaluates a number of regulatory alternatives in Chapter 2. The USCG concludes that IMO provides minor to moderate reduction of AIS introductions in freshwater ecosystems. The USCG dpEIS also states that the Enhanced IMO Standard - 100 Times (or their alternative 3), which is equivalent to the Department's proposed standard, would have a moderate reduction of AIS introductions into freshwater ecosystems. There would be fewer negative changes to natural community structure and lessen negative impacts on the ecosystem services. Alternative 4 (Enhanced IMO Standard - 1000 Times) in the USCG dpEIS states that AIS introductions into freshwater ecosystems would be reduced a moderate to major amount, resulting in fewer negative changes to the natural community structure and lessened negative impacts on ecosystem services.

Chapter 3 in the USCG dpEIS details natural and socioeconomic resources, including the economics of aquatic resources, tourism and recreation, commercial and recreational fishing, environmental justice, public health and shipping safety, and the costs of ballast water management. In Chapter 4 of the USCG dpEIS, effects on natural socioeconomic resources are discussed, as are irreversible and irretrievable commitments of resources, unavoidable adverse effects, and cumulative effects. During their public meeting on October 2, 2009, in Chicago, the US Coast Guard also presented economic impacts, and costs of ballast water treatment systems. Their assessment is referenced in whole as part of our EA as well.

A recent example of the continued AIS threat is the Department's discovery of viral hemorrhagic septicemia (VHS) in 2007. The Department responded immediately to try to understand how this virus was transferred between water bodies and between fish species. The response included testing, monitoring, outreach and education, reassigning fish production and quarantining of fish hatcheries. Additionally, fish used for stocking were lost. The Department tracked the costs to our fish health staff as well as our intensive VHS outreach effort including testing and monitoring. For FY'2008, the Department quantified over \$1.3 million of costs relating to the VHS response including installation at the Wild Rose Hatchery of egg disinfection rooms at both the coldwater and coolwater buildings and UV disinfection for the coldwater reuse and a Biosecurity template for hatchery operations.

The Department is continued to analyze the VHS outbreak and anticipates the next steps will include integrating the AIS hazard analysis and critical control point plan that have been developed for each hatchery into the biosecurity template. The Department estimates that this will take approximately 60 hours per small and medium sized hatchery for a total of up to 480 hours; and 80 hours for each large hatchery for a total number of hours up to 320 hours. These are actual costs the department has incurred trying to respond to just one new invasive species. There are also avoided costs that we cannot quantify such as fisherman not fishing because of VHS being present. The EA is revised to include this information.

The EA is revised to include the following information from the 2008 Great Lakes Shipping, Trade, and Aquatic Invasive Species report prepared by the National Research Council of the National Academies.

*“The seaway has played, and continues to play, a key role in certain markets— notably the shipment of grain, iron ore, coal, and steel—where the constraints imposed by the seasonality of the navigation season and the relatively long transit times can be accommodated. Nonetheless, the seaway is only one component of the Great Lakes region’s complex multimodal freight transportation system. Within this system, alternative routes and modes compete for the various commodities moving within or through the region between supply and demand centers in North American and overseas. Consideration of modal competitive dynamics suggests that, in general, rail rather than truck is the most viable alternative to waterborne transportations for many of the relatively low-value bulk commodities moving on the seaway... ..while there are alternatives to the seaway for moving goods, the future competitive position of the seaway versus the various alternatives is difficult to assess with any degree of certainty...Changes in global climate and in world maritime trade could affect both the numbers and the types of vessels using the seaway in the future and could, therefore, affect efforts to enhance the Great Lakes region’s potential for global trade and Closing the seaway to all vessel traffic—is not a realistic solution... Such closure would not eliminate further ship-vectored AIS introductions by vessels transiting the seaway but would reduce substantially the risk of such introductions....to eliminate further AIS introductions by vessels transiting the seaway.....Attempts to solve the AIS problem in the Great Lakes by shifting marine cargoes to alternative modes of transportation would need to take account not only of introductions of invasive species but also of other environmental impacts of transportation, including greenhouse gas emissions, criteria air contaminant emissions, accidents, and noise...questions about capacity and logistical constraints and the effects of trying to move even more freight on an already overburdened system...the cessation of transoceanic shipping on the Great lakes would result in a transportation cost penalty of approximately \$55 million annually....A more recent study estimated the transportation cost saving for all Great Lakes St. Lawrence Seaway shipping, rather than merely the transoceanic shipping through the seaway considered by Taylor and Roach (Transport Canada et al. 2007). The estimated savings of \$2.7 billion per year were calculated in terms of the transportation and handling costs that these shippers have incurred than they used other modes of transportation.”*

The Department has also considered the State of Michigan’s method of regulating saltwater discharge. Michigan has essentially prohibited the discharge of all seawater at Michigan Ports. This has worked for Michigan as seawater ballasted vessels are essentially forced to discharge at another port in another state, including Wisconsin. Since the Port of Superior is the busiest port in the Great Lakes for ballast water discharges, this is not an effective option for the Department to consider. The EA is revised to include this information.

The EA "Summary of Issue Communication Activities" section is revised to include to include the following information:

Date	Contact	Comment Summary
March	374 comments received on	Separated comments in 26 categories and responded

2009	Proposed General Permit	in the Ballast Water General Permit Notice of Final Determination, dated November 9, 2009.
8/28/09	US CG propose rule in federal register	Reviewed rule and EIS, prepared comments for public meeting and formal agency comments.
9/24/09	Meeting with USCG, EPA, St. Lawrence Seaway Dev. Corp; IJC, States, Research Scientists	Detroit meeting to discuss status of science, what ships could do, what states are doing, status of USCG and EPA regulations
10/02/09	USCG public meeting	Chicago, public comments on proposed rule

The EA "Documents, Plans, Studies or Memos" section of the EA is revised to include the USCG's proposed Standards for Living Organisms in Ship's Ballast Water Discharged in U.S. Waters and the Draft Programmatic Environmental Impact Statement. (74 FR 44632 (Aug. 28, 2009).) The USCG dpEIS that was published on August 28, 2009 details many of the Department's assertions in addition to additional analysis of social and economic effects and costs. The Department references this EIS in whole for the EA.

**Comments requesting an EIS:** Some commenters stated that the Department must prepare an Environmental Impact Statement (EIS) for the proposed GP because the EA did not include sufficient information, and because the waters affected by the proposed GP serve as drinking water for millions of Wisconsin residents.

**Response:** Under NR 150.03(8)(i)2.b, Wis. Adm. Code, issuance of a WPDES GP is a Type II Action requiring issuance of an EA. The EA is revised as referenced above in order to address deficits in the analysis, as provided for in NR 150.21(2), Wis. Adm. Code.

**Revisions to the EA:**

Some revisions have been made to the EA to make it consistent with changes made to the final general permit and to update it to include information such as the USCG's dpEIS. These changes are highlighted in yellow in the EA.



# WPDES PERMIT

*STATE OF WISCONSIN*  
*DEPARTMENT OF NATURAL RESOURCES*  
**GENERAL PERMIT TO DISCHARGE UNDER THE  
WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of Chapter 283, Wisconsin Statutes, any vessel discharging

**Ballast Water**

into Lake Michigan, Lake Superior or other waters where a vessel may transit located within the boundaries of Wisconsin and meeting the applicability criteria listed in this general permit, is permitted to discharge ballast water in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit.

State of Wisconsin Department of Natural Resources  
For the Secretary

By

A handwritten signature in black ink, appearing to read 'Russell Rasinussen', is written over a horizontal line.

Russell Rasinussen  
Director, Bureau of Watershed Management

November 18, 2009  
Date Permit Signed/Issued

PERMIT TERM: EFFECTIVE DATE - February 01, 2010

EXPIRATION DATE - January 31, 2015

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# 1 Applicability

## 1.1 Vessels Covered

Oceangoing vessels and Great Lakes vessels required to obtain the EPA Vessel General Permit (VGP) that operate within waters of the State of Wisconsin, and which have a ballast tank capacity of at least 2114 gallons (8 cubic meters) and are 164 feet (50 meters) in length or more, shall obtain coverage under WPDES general permit WI-0063835-01. Vessels that qualify for an exclusion under Subsection 1.3 are not required to obtain this permit.

## 1.2 Authorized Discharges

Ballast water discharges are authorized by this permit provided the discharges are in compliance with the ballast water treatment monitoring requirements and limitations specified in Section 4, and all other requirements contained in this permit. The discharge may not contain aquatic invasive species (AIS) or diseases (such as Viral Hemorrhagic Septicemia or VHS) at a level that would violate the designated use of the water body, constitute a threat to public health, safety, or welfare, or contribute to a violation of water quality standards.

*Note: The Wisconsin Ballast Water Discharge General Permit is in addition to the requirements of the EPA Vessel General Permit applicable to commercial vessels greater than 79 feet in length. If federal ballast water treatment discharge standards are promulgated, the Department will review the new standards and determine whether the state permit is still necessary.*

## 1.3 Exclusions

This general permit is not required for vessels that enter Wisconsin waters if any of the criteria in Subsections 1.3.1 through 1.3.5 are met.

### 1.3.1 Sealed Ballast Tanks

Vessels that carry ballast water in permanently sealed ballast water tanks that are not subject to discharge.

### 1.3.2 Captain of the Port Zone

Vessels that only operate within a Captain of the Port (COTP) Zone established by the U.S. Coast Guard. The COTP is defined as the U.S. Coast Guard officer designated as the COTP, or a person designated by that officer, for the COTP zone covering the U.S. port of destination. These COTP zones are listed in 33 CFR Part 3.

### 1.3.3 Off-Ship Treatment

Vessels that only discharge their ballast water to an on-shore ballast water treatment facility or to another vessel that either provides treatment or conveys the ballast water to the on-shore treatment facility.

### 1.3.4 Flow-Through Ballast

Vessels that implement flow-through or flush ballast water management techniques approved by the Department.

### 1.3.5 Military Vessels

Military vessels of the U.S. Armed Forces, as defined in section 312 of the Clean Water Act, are exempt in accordance with the Uniform National Discharge Standards program that applies to discharges incidental to the normal operation of vessels of the Armed Forces.

## **2 Permit Coverage**

### **2.1 Automatic Coverage**

Prior to the submittal of a Notice of Intent (NOI) to request coverage under this WPDES general permit, the owner or operator of a vessel that meets the applicability criteria in Subsection 1.1, is automatically authorized to discharge under this permit. This automatic authorization extends until the owner/operator of the vessel submits a NOI in accordance with Subsection 2.2.

### **2.2 Submittal of Notice of Intent (NOI)**

To obtain authorization under this WPDES general permit submit a copy of your EPA Vessel General Permit NOI to the Department. The EPA NOI will also serve to request coverage under WPDES permit WI-0063835-01. Refer to the compliance schedule in Section 6 for NOI submission deadlines. Existing vessels have up to 6 months from the effective date of the permit to submit their NOI (July 31, 2010). The NOI form is available at the following web site as a PDF document that allows data to be entered and saved on the form.

[http://www.epa.gov/npdes/pubs/vessel\\_vgp\\_noi.pdf](http://www.epa.gov/npdes/pubs/vessel_vgp_noi.pdf)

### **2.3 Notice of Coverage**

All vessels with discharges meeting the applicability criteria in Subsection 1.1 must receive a letter from the Department granting coverage under this permit. The Department may not grant permit coverage until the applicant has submitted the EPA NOI form under Subsection 2.2.

### **2.4 Notice of Termination**

The permittee shall inform the Department in writing if a Notice of Termination is filed with EPA requesting discontinuing coverage under the VGP. Coverage under WPDES permit WI-0063835-01 will automatically be terminated upon notice to the Department of the termination under the EPA permit.

## **3 Prohibited Discharges**

### **3.1 Intake Filtration Residuals and Separated Solids**

Separated solids from the sea chest intake that may accumulate on ballast water intake filters, screens or other devices that remove debris and aquatic life, shall be removed and disposed of in a manner to prevent any pollutant from the material from entering the waters of the State in accordance with s. NR 205.07(3)(a), Wis. Adm. Code. The permittee may discharge the intake backwash for cleaning the filters or screen provided the backwash only contains fine filtration residuals that originated from the lake water intake (sand, silt, small vegetation or aquatic life). This prohibition is applicable to both oceangoing vessels and Great Lakes vessels.

### **3.2 Disposal of Solids Removed from Ballast Tanks or by Treatment System**

Any accumulated solids, sediment, or biological material removed from the ballast tanks or generated by the treatment system may not be discharged into surface water. If sediment is removed by re-suspension with water during cleaning, the sediment laden water may not discharge from the ballast tank to surface water. Any existing sediment management practices that consist of a discharge to surface water shall be discontinued immediately. This prohibition is applicable to both oceangoing vessels and Great Lakes vessels.

*Note: If the disposal of solids occurs in Wisconsin, solids shall be disposed of according to any applicable Solid and Hazardous Waste Regulation at a site or operation licensed by the Department under chs. NR 500 to 590, Wis. Adm. Code (solid waste regulations), or chs. NR 600 to 690, Wis. Adm. Code (hazardous waste regulations).*

The permittee shall maintain documentation on the removal and disposal of these solid wastes that occur within the jurisdiction of the Wisconsin, and shall provide the following information each year with the annual discharge monitoring report form required in Subsection 4.7.2:

- (a) Date when ballast tanks are cleaned.
- (b) The amount solid wastes removed.
- (c) Person or company who hauled the solid waste for disposal.
- (d) Disposal site for the solid waste.

*Note: The prohibition on the discharge of solids from ballast tanks does not mean the ballast tanks may not be cleaned. Ballast tanks should continue to be cleaned as needed to minimize the accumulation of sediment. Vessels should make every effort to prevent the accumulation of sediment in ballast tanks by minimizing the intake of sediment with ballast water. This could be accomplished by taking on ballast water in locations that are very low in suspended solids, and by relocating the intake sea chest from the bottom of the hull to the side to prevent the disturbance of sediment in shallow waters.*

### **3.3 Seawater**

Discharge of ballast water from vessels containing seawater in other than insignificant residual amounts that remain in the ballast tanks that can not be pumped or drained out (no ballast on board or NOBOB) is prohibited, unless the vessel can demonstrate the discharge will comply with Wisconsin chloride limits (Subchapter VII of ch. NR 106, Wis. Adm. Code). The daily maximum discharge limit for chloride is 1514 mg/L (1.5 parts per thousand or ppt). The equivalent limit expressed as salinity is 2.7 ppt.

*Note: To express the chloride concentration in terms of salinity the chloride concentration is multiplied by 1.8. This is based on an average seawater salinity concentration of 35 ppt, of which chloride is 55% of the dissolved constituents or 19.2 ppt. The ratio of salinity to chloride is 1.8:1 (35 ÷ 19.2). The ballast tank water may not be discharged if the salinity exceeds 2.7 ppt (1.5 ppt chloride limit × 1.8 salinity conversion factor).*

*The limitation on seawater does not mean that oceangoing vessels may not discharge in Wisconsin waters, if they exchange or flush their ballast tanks in the ocean to comply with the U.S. Coast Guard and Transport Canada requirements for a salinity of at least 30 ppt. Before a vessel partially ballasted with seawater may discharge it would need to take on freshwater ballast to dilute the seawater, at a ratio of at least 11:1 (30 ppt ÷ 2.7 ppt). For example, if a ballast tank contains 10,000 gallons of 30 ppt seawater, the addition of 111,000 of freshwater would be needed for dilution. The ballast water would then comply with the chloride limit to prevent acute aquatic toxicity at the point of discharge. A discharge of only sea water is not permitted.*

## 4 Ballast Water Requirements

### 4.1 Ballast Water Treatment Requirements

The discharge of ballast water shall comply with the following requirements applicable to the vessel covered under this permit.

*Note the following definitions for terms in the permit:*

*"IMO" means the International Maritime Organization's proposed Regulation D-2 performance standards for the discharge of ballast water.*

*"Viable Organism" means organisms that are living and able to reproduce.*

*"Composite Sample" means a combination of individual samples of equal volume taken at approximately equal intervals not to exceed one hour over a specified period of time.*

*"cfu" means colony forming unit.*

*"Oceangoing Vessel" means a vessel which has taken on ballast water in areas less than 200 nautical miles from any shore after operating beyond the U.S. and Canadian Exclusive Economic Zones (EEZ) as defined in 33 CFR 151.2025.*

*"Great Lakes Vessel" means a vessel that operates exclusively within the Great Lakes - St. Lawrence Seaway System.*

*"Constructed" means the same as the definition in Appendix A of the EPA VGP when defining a new vessel.*

Reference	Application	Discharge Standard	Effective Date
Table A 4.2.1	New Oceangoing Vessels	Wisconsin Standard	Vessels constructed on or after January 1, 2012.
Table A 4.2.1	Existing Oceangoing Vessels	Wisconsin Standard	No later than January 1, 2014.
Table B 4.2.1	Existing Oceangoing Vessels New Oceangoing Vessels	IMO Standard (Subject to Subsection 4.1.1)	Same as Table A, unless modified according to 4.1.1.
4.1.2	Great Lakes Vessels	Best Management Practices	Immediately.
Table C 4.2.2	All Oceangoing and Great Lakes Vessels	Biocide limits according to ch. NR 106, Wis. Adm. Code	Immediately.

#### 4.1.1 Treatment Feasibility Determination

If the Department makes a finding that technology is not commercially available to comply with the Wisconsin Standards in Table A, the IMO standard in Table B shall apply.

*Note: By no later than December 31, 2010, the Department intends to review documentation and expert opinions on ballast water treatment technologies to determine the commercial availability of treatment technologies. The review will consist of a determination on whether the best practicable control technology is available to meet the Wisconsin Standards in Table A. At a minimum, the Department will review whether the following criteria are met:*

- (a) *Treatment technologies are able to meet the Wisconsin standards in Table A.*
- (b) *The technologies are commercially available.*
- (c) *It is feasible to install the technologies onboard both new and existing vessels.*
- (d) *That sufficient time exists to comply with the discharge standard's effective dates.*

*Treatment system manufacturers, researchers, and vessels covered under the permit are encouraged to submit information to the Department to assist in this treatment feasibility determination for complying with Wisconsin's proposed discharge standard in Table A (for organisms greater than 10 µm the Wisconsin Standard is 100 times more restrictive than the IMO standard).*

#### 4.1.2 Oceangoing Vessel Requirements

Oceangoing vessels are subject to the applicable ballast water discharge standards in Tables A or B, and shall also follow their Ballast Water and Sediment Management Plan (refer to Subsection 4.3) to prevent the introduction or spread of any aquatic invasive species (AIS) or diseases (such as Viral Hemorrhagic Septicemia or VHS) in the Great Lakes.

#### 4.1.3 Great Lakes Vessel Requirements

Vessels that operate exclusively within the Great Lakes and St. Lawrence Seaway System are not subject to the ballast water treatment requirements in Tables A or B. Great Lakes vessels shall implement best management practices for ballast water uptake and discharge in accordance with Subsection 2.2.3 of the EPA Vessel General Permit. Great Lakes vessels shall also follow their Ballast Water and Sediment Management Plan (refer to Subsection 4.3) to prevent the spread of any aquatic invasive species (AIS) or diseases (such as Viral Hemorrhagic Septicemia or VHS) in the Great Lakes.

### 4.2 Monitoring Requirements and Effluent Limitations

Permitted vessels shall comply with the ballast water discharge requirements in Subsections 4.2.1 and 4.2.2 to comply with technology based effluent limits and state water quality standards.

#### 4.2.1 Ballast Water Discharge Standards

Table A  
Wisconsin Standard

Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type
Organisms > 50 µm in minimum dimension	Daily Average	< 1 Viable organism per 10 m <sup>3</sup>	To be determined	Composite
Organisms 10 - 50 µm in minimum dimension	Daily Average	< 1 Viable organism per 10 ml	To be determined	Composite
Escherichia coli	Daily Average	< 126 cfu per 100 ml	To be determined	Composite
Intestinal enterococci	Daily Average	< 33 cfu per 100 ml	To be determined	Composite

Table B  
IMO Standard

Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type
Organisms > 50 µm in minimum dimension	Daily Average	< 10 Viable organism per m <sup>3</sup>	To be determined	Composite
Organisms 10 - 50 µm in minimum dimension	Daily Average	< 10 Viable organisms per ml	To be determined	Composite
Escherichia coli	Daily Average	< 250 cfu per 100 ml	To be determined	Composite
Intestinal enterococci	Daily Average	< 100 cfu per 100 ml	To be determined	Composite

## 4.2.2 Biocides

### 4.2.2.1 Effluent Limits for Biocide Treatment

Discharges of ballast water from vessels employing ballast water treatment systems using chlorine or other biocides, shall monitor the discharge and comply with the effluent limits in Table C or in the Department's approval of a biocide. The use of biocides is also subject to the requirements in Subsection 5.8 of the EPA Vessel General Permit.

Table C  
Biocide Effluent Limits

Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type
Halogen Oxidants, Total Residual	Daily Maximum	38 µg/L, as total residual chlorine	Quarterly	Grab
Biocide - Specify	Daily Maximum	To be determined	To be determined	Grab

### 4.2.2.2 Effluent Limits for Other Biocide Treatments

Discharges containing biocides or other water treatment additives that may be added to the ballast water are prohibited under this general permit unless its use is approved in writing by the Department. Any subsequent changes in biocide or water treatment additive usage must also be approved prior to use. The permittee shall maintain records of the monthly biocide and other water treatment additive used, including the name, manufacturer, and daily maximum dosage. The use of chlorine or other halogen biocides must comply immediately upon issuance of this permit with the effluent limit for total residual chlorine in Table C, or the use restriction the Department calculates in the approval of other biocides or other water treatment additives.

The permittee shall provide the following information to receive Department approval:

- Commercial name of the additive, function, and the Material Safety Data Sheet (MSDS).
- Additive dosage concentration.
- Anticipated additive discharge concentration.
- Discharge frequency reported as hours per day and days per year.
- Removal treatment to deactivate the biocide prior to discharge if necessary to comply with the use restriction.
- Aquatic toxicity information consisting of at least one 48-hour LC<sub>50</sub> or EC<sub>50</sub> value for daphnia magna or ceriodaphnia dubia, and at least one 96-hour LC<sub>50</sub> or EC<sub>50</sub> value for either fathead minnow, rainbow trout, or bluegill (this information is usually included in the MSDS). The Department will only consider toxicity information on the whole product, not just the active ingredient or component of a product.

*Note: Biocides used to treat ballast water may need to be registered with the U.S. EPA as a new use under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Obtain any necessary approval from FIFRA.*

## 4.3 Ballast Water and Sediment Management Plan

The permittee shall maintain a Ballast Water and Sediment Management Plan. A copy of the plan (in English) shall be made available to the Department upon request. The plan must be updated to reflect the vessel's current ballast water management practices that are designed to minimize the discharge of aquatic invasive species. The following elements must be included in the plan:

- Operation and maintenance procedures for the vessel and crew associated with ballast water management.
- Ballast tank cleaning and sediment removal practices.

- (c) Actions taken to implement ballast water treatment requirements to comply with the discharge standards in this permit.
- (d) The designated position or officer on board the vessel in charge of ensuring the plan is properly implemented.

*Note: The plan may be developed in accordance with Appendix A of the current U.S. Coast Guard Navigation and Vessel Inspection Circular.*

#### **4.4 Monitoring Plan**

Permittees that treat their ballast water to meet the requirements of Tables A or B shall prepare a monitoring plan consistent with the monitoring needs to efficiently operate the treatment system. Great Lakes vessels that do not treat their ballast water are not required to submit a monitoring plan. The monitoring plan shall be completed prior to treating ballast water. A copy of the plan (in English) shall be made available to the Department upon request. The monitoring plan must be revised as necessary to reflect any significant changes that may occur in the future. The plan shall describe the following:

- (a) Information on number of ballast tanks, tank capacities, discharge locations, sampling point locations, the monitoring parameters, and monitoring frequency.
- (b) Ballast water discharge monitoring for determining compliance with the requirements in Subsection 4.2.
- (c) Monitoring necessary for the efficient operation of the onboard ballast water treatment system.

When "to be determined" is shown as the monitoring frequency in Tables A or B, the monitoring frequency shall be consistent with the U.S. Coast Guard protocol for monitoring and treatment system operation or with other protocol approved by the Department in writing.

*Note: The Department reserves the right to conduct a vessel inspection for evaluating the ballast water discharge, and may collect ballast water samples as allowed under s. NR 205.07(1)(d), Wis. Adm. Code.*

#### **4.5 Ballast Water Treatment System Approval**

Onboard ballast water treatment systems for the removal or destruction of aquatic invasive species and disease are subject to the Department's approval. Plans and specifications for permanent wastewater treatment systems must be submitted to the Department for review and approval in accordance with sec. 281.41, Wis. Stats, and ch. NR 108, Wis. Adm. Code.

*Note: The Department intends to use a streamlined review and approval process for ballast water treatment systems. Refer to the fact sheet for details.*

#### **4.6 Safety Exemption**

An exemption to any regularly scheduled ballast water treatment, monitoring, or other activity required by this permit is automatically granted, if at any time conditions exist due to weather, seas, other extenuating circumstances or emergency that would place the vessel, vessel's crew, or anyone else in danger. When a safety exemption is needed, the vessel shall document the circumstances in the ballast log book described in Subsection 4.7.1. The required permit actions shall be resumed when conditions allow for it to be safely conducted.

## 4.7 Record Keeping and Reporting

### 4.7.1 Ballast Log Book

The vessel shall maintain on board a ballast water log book (in English), which shall be made available for examination by the Department upon request. The log book shall include the following documentation:

- (a) Ballast discharge - date of the discharge, estimated volume, location where the discharge occurred with start and stop location if the vessel is in transit, and the ballast uptake it is linked to.
- (b) Ballast uptake - date ballast was taken onboard, the source of the ballast water with the name of the harbor or other defined location in the water body where the ballast water originated.
- (c) Sediment - date ballast tanks are cleaned, estimated volume of sediment removed, and where the sediment was disposed of.
- (d) Treatment - date ballast water treatment occurs, the dosage of any chemicals, reaction or holding time to complete the treatment, and any other related activities conducted to comply with the permits monitoring requirements and effluent limitations.
- (e) Safety exemption - date unsafe conditions occur, circumstances that existed to cause the suspension of a permit required activity, what activities were suspended, when the activity was resumed.

### 4.7.2 Discharge Monitoring Reports

The permittee shall submit a discharge monitoring report (DMR) to the Department on an annual basis no later than February 1<sup>st</sup>. A DMR is not required in years prior to when an onboard ballast water treatment system becomes operational. If the Department does not provide a form with the specified information to report on, the permittee shall prepare a report to summarize the following information:

- (a) Data collected in accordance with the monitoring plan in Subsection 4.4.
- (b) The required monitoring in accordance with the applicable requirements in Subsection 4.2. when a ballast water treatment system becomes operational.
- (c) Documentation on the disposal of solids removed from ballast tanks or treatment system as described in Subsection 3.2.

## 5 Schedules of Compliance

### 5.1 Permit Coverage

To obtain coverage under WPDES general permit WI-0063835-01, the Notice of Intent (NOI) form for the EPA Vessel General Permit shall be submitted to the Wisconsin DNR.

Required Action	Date Due
<b>Vessels in Operation:</b> Vessels in operation on or before February 1, 2010 shall submit a NOI requesting permit coverage no later than 6 months after the effective date of the Wisconsin Ballast Water Discharge General Permit.	07/31/2010
<b>Transfer in Ownership/Operator:</b> For vessels whose discharge was previously authorized under this permit, a NOI shall be submitted by the date of transfer of ownership and/or operation.	Date of transfer
<b>New Vessels:</b> New vessels shall submit a NOI at least 30 days prior to discharging into the waters of the state.	30 days prior to discharge
<b>Vessels Not Previously Permitted:</b> Existing vessels, not previously authorized under the permit, shall submit a NOI at least 30 days prior to discharging into waters of the state.	30 days prior to discharge

### 5.2 Monitoring Requirements and Effluent Limitations

The applicable ballast water discharge standards in Subsection 4.2 shall be met according to the schedule below.

Required Action	Date Due
<b>Discharge Standards - New Vessels:</b> New oceangoing vessels constructed after January 1, 2012, which meet the applicability criteria in Subsection 1.1, shall comply with the Wisconsin Standard in Table A of Subsection 4.2.1.  <i>Note: If the Department's treatment feasibility review concludes treatment is not commercially available to comply with the Wisconsin Standard in Table A, the IMO Standard in Table B shall apply. The permit must be modified for this change to occur.</i>	01/01/2012
<b>Discharge Standards - Existing Vessels:</b> By no later than January 1, 2014, existing oceangoing vessels, which meet the applicability criteria in Subsection 1.1, shall comply with the Wisconsin Standard in Table A of Subsection 4.2.1.  <i>Note: If the Department's treatment feasibility review concludes treatment is not commercially available to comply with the Wisconsin Standard in Table A, the IMO Standard in Table B shall apply. The permit must be modified for this change to occur.</i>	10/01/2014
<b>Biocide Effluent Limits:</b> Oceangoing and Great Lakes vessels meeting the applicability criteria in Subsection 1.1, which choose to utilize a biocide water treatment additive, shall comply with the Table C Biocide Effluent Limits and other applicable requirements in Subsection 4.2.2. The effluent limit for total residual chlorine, or a use restriction determined by the Department for other biocides, is effective immediately and whenever the biocide is used.	Immediately

### 5.3 Treatment System Plan Approval

Approval of plans and specifications for ballast water treatment systems.

Required Action	Date Due
<b>Plans and Specifications:</b> The permittee shall submit plans and specifications for an onboard ballast water treatment system for review and approval in accordance with sec. 281.41, Wis. Stats., and ch. NR 108, Wis. Adm. Code.	Prior to installation

### 5.4 Monitoring Plan

Monitoring to be determined for ballast water treatment systems.

Required Action	Date Due
<b>Prepare Monitoring Plan:</b> The permittee shall prepare a monitoring plan, prior to treating ballast water, in accordance with Subsection 4.4.	Prior to treatment

## 6 Standard Requirements

**NR 205, Wisconsin Administrative Code (Conditions for Industrial Dischargers):** The conditions in ss. NR 205.07(1) and NR 205.07(3), Wis. Adm. Code, are included by reference in this permit. The permittee shall comply with all of these requirements, except for s. NR 205.07(1)(n), which does not apply to facilities covered under general permits. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in ss. NR 205.07(1) and NR 205.07(3).

### 6.1 Reporting and Monitoring Requirements

#### 6.1.1 Monitoring Results

Monitoring results obtained during the calendar year shall be summarized and reported on a Department Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under 'Recording of Results'. This report is to be returned to the Department no later than the date indicated in Subsection 4.7.2. When submitting a paper Discharge Monitoring Report form, the original and one copy of the Wastewater Discharge Monitoring Report Form shall be submitted to the return address printed on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

All Wastewater Discharge Monitoring Reports submitted to the Department should be submitted using the electronic Discharge Monitoring Report system. Permittees who may be unable to submit Wastewater Discharge Monitoring Reports electronically may request approval to submit paper DMRs upon demonstration that electronic reporting is not feasible or practicable.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report.

The permittee shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The permittee may monitor more frequently than required for any parameter.

An Electronic Discharge Monitoring Report Certification sheet shall be signed and submitted with each electronic Discharge Monitoring Report submittal. This certification sheet, which is not part of the electronic report form, shall be signed by a principal executive officer, a ranking elected official or other duly authorized representative and shall be mailed to the Department at the time of submittal of the electronic Discharge Monitoring Report. The certification sheet certifies that the electronic report form is true, accurate and complete. Paper reports shall be signed by a principal executive officer, a ranking elected official, or other duly authorized representative.

#### 6.1.2 Sampling and Testing Procedures

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code and shall be performed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation. If the required level cannot be met by any of the methods available in NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this permit.

#### 6.1.3 Recording of Results

The permittee shall maintain records which provide the following information for each effluent measurement or sample taken:

- the date, exact place, method and time of sampling or measurements;
- the individual who performed the sampling or measurements;

- the date the analysis was performed;
- the individual who performed the analysis;
- the analytical techniques or methods used; and
- the results of the analysis.

#### **6.1.4 Reporting of Monitoring Results**

The permittee shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.
- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.
- For the purposes of reporting a calculated result, average or a mass discharge value, the permittee may substitute a 0 (zero) for any pollutant concentration that is less than the limit of detection. However, if the effluent limitation is less than the limit of detection, the department may substitute a value other than zero for results less than the limit of detection, after considering the number of monitoring results that are greater than the limit of detection and if warranted when applying appropriate statistical techniques.

#### **6.1.5 Records Retention**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application, except for sludge management forms and records, which shall be kept for a period of at least 5 years.

#### **6.1.6 Other Information**

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

### **6.2 System Operating Requirements**

#### **6.2.1 Noncompliance Notification**

- The permittee shall report the following types of noncompliance by a telephone call to one of the Department's regional office within 24 hours after becoming aware of the noncompliance;
  - a. any noncompliance which may endanger health or the environment;
  - b. any violation of an effluent limitation resulting from an unanticipated bypass;
  - c. any violation of an effluent limitation resulting from an upset; and
  - d. any violation of a maximum discharge limitation for any of the pollutants listed by the Department in the permit.
- A written report describing the noncompliance shall also be submitted to one of the Department's regional office within 5 days after the permittee becomes aware of the noncompliance. On a case-by-case basis, the Department may waive the requirement for submittal of a written report within 5 days and instruct the permittee to submit the written report with the next regularly scheduled monitoring report. In either case, the written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of

the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

- The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

*Note: Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources immediately of any discharge not authorized by the permit. The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call DNR's 24-hour HOTLINE at 1-800-943-0003.*

### **6.2.2 Proper Operation and Maintenance**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. If the treatment control system has been approved by the Department, a state certified operator is not necessary for operation of the treatment system.

### **6.2.3 Spill Reporting**

The permittee shall notify the Department in accordance with ch. NR 706 (formerly NR 158), Wis. Adm. Code, in the event that a spill or accidental release of any material or substance results in the discharge of pollutants to the waters of the state at a rate or concentration greater than the effluent limitations established in this permit, or the spill or accidental release of the material is unregulated in this permit, unless the spill or release of pollutants has been reported to the Department in accordance with s. NR 205.07 (1)(s), Wis. Adm. Code.

### **6.2.4 Planned Changes**

In accordance with ss. 283.31(4)(b) and 283.59, Stats., the permittee shall report to the Department any facility expansion, production increase or process modifications which will result in new, different or increased discharges of pollutants. The report shall either be a new permit application, or if the new discharge will not violate the effluent limitations of this permit, a written notice of the new, different or increased discharge. The notice shall contain a description of the new activities, an estimate of the new, different or increased discharge of pollutants and a description of the effect of the new or increased discharge on existing waste treatment facilities. Following receipt of this report, the Department may modify this permit to specify and limit any pollutants not previously regulated in the permit.

### **6.2.5 Duty to Halt or Reduce Activity**

Upon failure or impairment of treatment facility operation, the permittee shall, to the extent necessary to maintain compliance with its permit, curtail production or wastewater discharges or both until the treatment facility operations are restored or an alternative method of treatment is provided.

## **6.3 Continuation of an Expired General Permit**

As provided in s. NR 205.08(9), Wis. Adm. Code, the terms and conditions of this general permit shall continue to apply until this general permit is reissued or revoked or until an individual permit is issued for the discharge to which the general permit applied. The status of expired general permits and forms for requesting continued permit coverage can be accessed at <http://dnr.wi.gov/org/water/wm/ww/gpindex/gpinfo.htm>.

## **6.4 Severability**

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

## 7 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Permit Coverage -Vessels in Operation	July 31, 2010	9
Permit Coverage -Transfer in Ownership/Operator	See Permit	9
Permit Coverage -New Vessels	See Permit	9
Permit Coverage -Vessels Not Previously Permitted	See Permit	9
Monitoring Requirements and Effluent Limitations -Discharge Standards - New Vessels	January 1, 2012	9
Monitoring Requirements and Effluent Limitations -Discharge Standards - Existing Vessels	October 1, 2014	9
Monitoring Requirements and Effluent Limitations -Biocide Effluent Limits	See Permit	9
Treatment System Plan Approval -Plans and Specifications	See Permit	10
Monitoring Plan -Prepare Monitoring Plan	See Permit	10
Discharge Monitoring Report	no later than the date indicated	11

The NOI request for permit coverage, discharge monitoring report forms, the engineering report for plans and specifications for a ballast water treatment system, and any other submittals required by this permit shall be submitted to:

Wisconsin Department of Natural Resources  
Bureau of Watershed Management - Wastewater Section, WT/3  
101 South Webster Street  
P.O. Box 7921  
Madison, WI 53707-7921

Ballast Water Discharge General Permit  
WPDES WI-0063835-01-0  
Summary of Public Comments and Department Responses

**A. Uniform requirements for ballast water discharges at the federal level are necessary.**

Action at the federal level to regulate ballast water was a very common theme and one with which the Department strongly agrees. Issuance of the EPA Vessel General Permit (VGP) was a major step in this direction. But, that permit doesn't contain numeric ballast water treatment performance standards Wisconsin and other Great Lake states believe are necessary.

The U.S. Coast Guard Authorization Bill H.R. 2830 was an attempt at national standards that passed the House of Representatives on April 24, 2008. It contained ballast water treatment requirements 100 times stricter than International Maritime Organization (IMO) with a more aggressive implementation schedule. However, this bill stalled in the U.S. Senate.

On August 28, 2009, proposed ballast water discharge standards were published in the Federal Register that would establish national standards administered by the U.S. Coast Guard. The rule would establish a two phase approach - phase one consists of the International Maritime Organization D-2 performance standard and schedule, and phase two a more stringent standard depending on a practicability review on the availability of treatment technology and testing protocols.

Wisconsin agrees with the need for a national standard that would provide uniform regulation of ballast water. The proposed U.S. Coast Guard rules are promising, but a final date for adoption is unknown and probably several years away. However, in the absence of such a standard and history of delays in establishing one, the Department moved forward to develop its own permit with a ballast water discharge standard more stringent than that of the IMO.

**B. Differing state requirements creates unworkable/ineffective patch work of regulations.**

We agree it's best to avoid different requirements between states. This situation was created because of the absence of a national ballast water discharge standard. In addition, states may have slightly different water quality concerns and regulations based on their site specific conditions. This becomes evident in the state water quality certifications under §401 of the Clean Water Act, where states have the authority to add their state requirements where the EPA VGP was not protective enough.

**C. Consistency with 5 other Great Lake States with the IMO standard and schedule.**

Agreement between all the Great Lake States would provide for consistency at a regional level in the absence of a national standard. But even this is difficult to reach. Of the eight Great Lakes States, 5 have included a requirement in their §401 water quality certification to treat to the IMO standard - Illinois, Indiana, Ohio, Pennsylvania, and Minnesota (also has its own general permit with IMO standards). Michigan has its own general permit that relies on the use of four approved treatment technologies. New York and Wisconsin have standards 100 times IMO (for new vessels New York requires 1000 times IMO). The Great Lakes states have attempted to collaborate for consistency with limited success.

**D. Competitive disadvantage to Wisconsin ports compared to the neighboring Great Lake States.**

Serious concerns about any regulations or permits that would place Wisconsin ports at a competitive disadvantage were heard repeatedly from businesses and labor. Experience has already shown that Department of Transportation regulations on trucking in Wisconsin, which were more stringent than neighboring states, diverted shipping business to other ports. Economic advantages and disadvantages are created whenever a lack of consistency exists in the regulations. And unfortunately, reaching a consensus

between states, or agreement at the federal level, on how to regulate ballast water has proven to be difficult. As we move forward, the need for a competitive level playing field shall be kept in mind.

As individual states and the federal government permit ballast water discharges, differences will occur, in the absence of a national discharge standard. There are some differences between Wisconsin's proposed ballast water general permit and Minnesota's. Great Lakes vessels and oceangoing vessels are subject to the same discharge standards by Minnesota. Wisconsin only has a discharge standard in this permit term for oceangoing vessels. Minnesota selected IMO as their discharge standard and Wisconsin has selected 100 times IMO.

**E. Not technically feasible or economically beneficial to provide treatment 100 or 1000 times IMO.**

A wide range of opinions and varying evidence exists on whether there are ballast water treatment systems available and what level of treatment can reliably be achieved. Ballast water technology and the feasibility of onboard treatment are rapidly evolving. There is evidence that technology exists for compliance with performance standards more stringent than the IMO. For this reason, the Department will examine the commercial availability of treatment systems by December 31, 2010 and will modify the permit to reflect whether implementation by the effective date is reasonable.

The initial treatment standard Wisconsin has chosen as the starting point is 100 times the IMO performance standard, which is also what the U.S. delegation to the 2004 IMO convention supported, is the standard in the U.S. Coast Guard Authorization Bill H.R. 2830, and is option 4 in the August 28, 2009 U.S. Coast Guard proposed rule. Pending the outcome of the Department's feasibility determination, the standard could be reduced from 100 times IMO to IMO with a permit modification.

The EPA VGP relies on ballast water best management practices to minimize pollutant discharges. The VGP fact sheet (December 18, 2009) stated reliable treatment systems approved for use on vessels are not currently available. EPA also would not require treatment unless there are treatment systems approved by the U.S. Coast Guard.

California and New York have ballast water treatment standards of 1000 times IMO. California appears to be leading the way in evaluating ballast water treatment, having assessed 30 treatment systems for efficacy, availability, and environmental impact for use in their state. California technical staff have stated that verification tests performed by an independent laboratory found five treatment systems as of August 6, 2009 that meet California standards, and they expect several additional systems will meet the standard in the future.

While treatment beyond the IMO standards appears promising, some treatment feasibility questions remain because of unknowns about cost effectiveness, commercial availability, practicability, and effectiveness in freshwater ecosystems. Any treatment system would also need to receive approval from the U.S. Coast Guard to be installed on vessels, so standards inconsistent with the U.S. Coast Guard may have problems with the approval process.

The U.S. Coast Guard Draft Programmatic Environmental Impact Statement (April 2008) evaluated the cost-benefit of achieving various ballast water discharge standards. The benefits of treating ballast water, including prevention of economic and environmental problems from new aquatic invasive species (AIS), exceed the costs for treating to the IMO standard. It's unknown what the costs for treatment more stringent than IMO are because these technologies are still evolving.

**F. Verification monitoring methods are not available to evaluate treatment performance.**

Monitoring for compliance with the performance based ballast water discharge standards is difficult due to the lack of standardized methods, but is still evolving along with the treatment technology. Large volumes of water need to be analyzed to measure the number of small organisms and determining whether they are dead or alive. Verification monitoring for approving the approving ballast water

treatment systems is being done for California by independent laboratories. Laboratories using the best techniques available predict a high likelihood of complying with the California standard of 1000 times IMO by following the California's technology testing guidelines. These guidelines follow IMO protocols.

**G. Environmental and economic benefits of shipping in jeopardy.**

The Department recognizes the importance of the environmental and economic benefits of transportation by water, when compared to other modes of transportation. The benefits of shipping are well documented, and the Great Lakes states are in a unique geographic position with access to worldwide shipping. However, the damages from AIS to the environment and economy are also well documented. The U.S. Coast Guard programmatic EIS for the proposed rules as well as other reports have found that the cost from AIS damage exceeds the benefits from opening the Great Lakes and St. Lawrence Seaway System to oceangoing shipping.

**H. Shipping industry in jeopardy with loss jobs and taxes.**

Wisconsin values the shipping industry and economic benefits it provides. But, the damages to the environment and resulting economic consequences caused by AIS must be accounted for by the responsible party, the shipping industry. To prevent further damages from new AIS, as well as the spreading of existing AIS, vessels must improve the management of their ballast water. We believe a permit that includes stringent ballast water discharge standards is an important tool necessary to regulate the shipping industry. The Great Lakes need this protection to retain and restore the economic foundation it provides to the many businesses that have an even greater impact on jobs and taxes than the shipping industry.

**I. Wisconsin's action alone will not drive treatment technology or force federal action.**

Wisconsin is collaborating with the other Great Lake states as noted in the response to comment C above. California and New York may have more market share than Wisconsin to drive technology because of the volume of vessels entering their waters and the geographic location of these states. Wisconsin is in support of these more restrictive ballast water standards. Additionally, Wisconsin has been involved in discussions with the USCG regarding the development of their proposed rules.

**J. 2012 compliance date unrealistic should use the 2016 date in IMO.**

The 2012 compliance date for existing vessels was very aggressive, and based on comments, compliance with this date may not be achievable. It may prevent oceangoing vessels from using Wisconsin Ports, creating a competitive disadvantage. This compliance date was inconsistent with the other Great Lakes states except for New York, which has 2012 as the effective date for existing vessels in their §401 water quality certification.

The Department believes it is important to push the implementation date for the ballast water standards before the 2016 date in the IMO schedule. Wisconsin chose the year 2014 as the implementation date for existing oceangoing vessels. A major oceangoing shipping company indicated the 2014 date could be achievable.

**K. Lakers spread AIS and need ballast water treatment like oceangoing vessels.**

The U.S. and Canadian Laker fleet of vessels that remain in the Great Lakes do have the potential to move large volumes of ballast water between ports within the Great Lakes. It is the Department's understanding that larger volumes of water are found in Great Lakes only vessels. The Great Lakes vessels' ballast tank configurations differ significantly from oceangoing vessels, which makes ballast water treatment different and more difficult. The Department believes an exemption from treatment for

existing Great Lakes vessels, at least for the first permit reissuance, is appropriate (but may reconsider this exemption in future permit). Any new constructed Great Lakes vessels are not exempt, because a treatment system can be installed in a newly constructed vessel during its design, making treatment feasible.

The Department believes it is justifiable to exclude existing lakers from having to treat ballast water, because they are still subject to the additional requirements for implementing ballast water best management practices in the EPA Vessel General Permit, and must follow the requirements for ballast water and sediment management plans in Subsection 4.3 of the permit. In addition, Subsection 3.2 of the permit prohibits the discharge of sediment from cleaning out ballast tanks. Eliminating the sediment discharge from Great Lakes vessels should reduce a potential source of nonindigenous species.

The US fleet of lakers, consisting of about 60 older vessels (several 50 years old or more), could be decommissioned in the near future because of age. The Canadian lakers have already committed to replacing their older vessels.

**L. Permit issues - effluent limits, 401 cert, rules, more stringent than EPA, new vs. existing vessels.**

The Department has the authority to issue a general permit for ballast water discharges. Since the public noticing of the proposed permit, the legislature has expressly authorized the Department to issue a general permit containing effluent limitations for ballast water. See §283.35(1m), Wis. Stat., (2009). In addition, the Department has the authority to implement technology based effluent limits via a permit pursuant to Subch. III of Ch. NR 220, Wis. Adm. Code. This Subchapter allows the Department to “specify effluent limitations applicable in permits for discharges from point sources” that are not included in the class or categories of discharges regulated under chs. NR 221 to 299. Because ballast water discharged from vessels is not regulated under those chapters the Department may use its best professional judgment to impose the technology based limits it determines are achievable.

The Department has adjusted the stringency of the treatment it deems necessary based upon significant developments in the past year, such as the report by California on the treatment systems available and the information contained in the U.S. Coast Guard’s programmatic EIS and preamble to the proposed rule. Before the Department decided to pursue issuance of its own general permit with ballast water discharge standards to protect water quality, it proposed a state water quality certification in accordance with §401 of the Clean Water Act. EPA requested the states to submit a water quality certification and include additional state specific requirements if needed in the EPA VGP to protect the state’s water quality. At that time the Department selected the proposed IMO standard as a water quality based limit. In December 2008, the Department withdrew the §401 water quality certification and started the process of developing a state general permit. In this process the Department concluded that the more stringent standard of 100 times IMO was necessary to prevent future introduction of invasive species. However, if there no commercially available treatment systems to meet the Wisconsin Standard, the permit will be modified to the IMO standard.

The Department initially indicated the permit limitations were water quality based effluent limits (WQBEL). After reconsideration we agree these limits should be characterized as technology based effluent limits instead of WQBEL. The Department has made the appropriate findings using best professional judgment that the limits in the permit represent the best practicable control technology currently available for the treatment of ballast water given the current rate of development of new technology. The Department reviewed a number of sources to reach this conclusion, including: California, Minnesota, Michigan and New York’s analyses on ballast water treatment systems, the recent proposed rule and programmatic EIS prepared by the U.S. Coast Guard and assessments of ballast water treatment systems prepared by the International Maritime Organization. Additionally, the Department has committed to reviewing the technology available prior to December 31, 2010 to determine whether the required standards will be achievable within in the prescribed timeframe.

The Department was challenged for imposing effluent limitations that are more stringent than those adopted by EPA according to §283.11(2), Wis. Stats. But EPA has not adopted any standards through their process for establishing effluent limits and therefore, the Department may establish limits that reflect best professional judgment in the permit pursuant to s. NR 220.21, Wis. Adm. Code. In addition, the legislature recently clarified that the Department has the authority to issue general permits for ballast water discharges which contain “effluent limits.” § 283.35(1m), Wis. Stat., (2009).

In the public noticed permit the ballast water discharge standards were different for new vs. existing, vessels, with existing vessels at 100 times IMO and new at 1000 times IMO. The Department has revised the standard at 100 times IMO for both new and existing vessels. The change was made because a treatment system’s performance would not be designed any differently for new versus existing vessels. The compliance date to install treatment is different between new and existing vessels. New vessels will be subject to the same discharge standard as existing vessels, but with an earlier compliance date because treatment systems can be designed into a new vessel more efficiently. Retrofitting existing vessels is more difficult and the design and installation details may vary from vessel to vessel.

**M. Prohibitions on sediment and seawater discharges cause operational problems and expenses.**

The seawater prohibition is necessary to address potential concerns with chloride toxicity from the discharge of seawater into freshwater environments. High chloride concentrations are present in an oceangoing vessel’s ballast water after a saltwater exchange or flushing. At a salinity of 35 parts per thousand, the chloride concentration is 55% or 19.2 parts per thousand (19,200 mg/L). Wisconsin has restrictions on the discharge of chloride in subchapter VII of ch. NR 106, Wis. Adm. Code. The applicable limit for ballast water discharges is the acute daily maximum of 1514 mg/L (the chloride limit expressed as salinity is 2.7 parts per thousand).

If undiluted seawater above the limit is discharged into the Great Lakes it would create acute toxicity at the point of discharge. Ballast water management systems would be unable to remove salinity, and some may even rely on salinity to operate. Dilution of seawater ballast water with freshwater to below the chloride limit may be performed to prevent acute toxicity. This is an acceptable practice to comply with a water quality based effluent limit for a substance that is not a bioaccumulating chemical of concern.

The Department is unaware of how many oceangoing vessels may enter the Great Lakes ballasted with significant volumes of seawater, so the full implication of imposing a chloride limit is unknown. It is suspected that only a few oceangoing vessels carry seawater in their ballast tanks. Most oceangoing vessels are expected to have only residual amounts, because they arrive filled with cargo instead of ballast. These vessels with “no ballast on board” or NOBOB take on ballast water when they unload cargo, diluting any residual seawater. A dilution ratio of 11:1 of freshwater to seawater would comply with the chloride limit. Alternatively, if permittees are unable to comply with the chloride limit and can justify the granting of a water quality standards variance, the limit could be altered, or other mitigating actions could be developed.

The Department is aware the sediment prohibition may be problematic for some vessels, if their current practice of cleaning the sediment involves washing the tanks to create a slurry that is discharged while underway in open water, or otherwise discharge sediment into the water. Vessels must implement other options when removing sediment, when at port or dry dock, and dispose of the sediment properly. Vessels could also make efforts to minimize the intake of sediment with ballast water to reduce the accumulation of sediment and need for cleaning. The cost from new invasive species that may enter the Great Lakes from ballast tank sediment is far greater than the costs to eliminate the discharge of sediment by using other options.

The release of the sediments violates the water quality standard in s. NR 102.04(1)(a), Wis. Adm. Code, which prohibits deposits on the bed of a water body that interfere with the public rights. Sediments may

be a significant source of nonindigenous species, thereby interfering with the biological health of the water body and public rights.

**N. AIS have caused environmental harm and huge economic damage.**

The damages caused by AIS are well documented, with severe economic and/or ecological influences in the Great Lakes. According to the U.S. Geological Survey, the most problematic AIS include: alewife, common carp, Eurasian ruffe, Eurasian water milfoil, purple loosestrife, zebra mussel, quagga mussel, rainbow smelt, round goby, rusty crayfish, sea lamprey, spiny waterflea, and fishhook waterflea. AIS has caused the extinction of native species and the alteration of the food web. Zebra and quagga mussels have caused large economic problems because they foul water intakes of large industrial facilities and power plants.

Wisconsin is moving forward with a permit with stringent ballast water discharge standards and an accelerated implementation schedule two years ahead of the IMO. New AIS introductions and the spread of existing AIS must be prevented.

**O. Ballast water of oceangoing vessels primary source of AIS needs regulation.**

The point of emphasis in the Wisconsin permit is oceangoing vessels because their ballast water is the primary vector for the introduction of nonindigenous species since the opening of the St. Lawrence Seaway to oceangoing vessels in 1959. According to the National Academy of Sciences 2008 report on "Great Lakes Shipping, Trade, and Aquatic Invasive Species", ships' ballast water may account for as much as 65% or 70% of the documented inventory of AIS in the Great Lakes. Europe is the source of 94% of the nonindigenous species.

The regulation of oceangoing ballast water with stringent discharge standards for the number of surviving viable organisms is expected to have a significant affect on preventing new nonindigenous species. However, it will not prevent all further introductions of all nonindigenous species or diseases because there are other possible vectors.

**P. Lakers vessels not responsible for AIS and should be exempt.**

For the first permit term, Great Lakes vessels are exempt from the ballast water treatment standards that apply to oceangoing vessels. The Department understands that vessels that only transit the Great Lakes are not responsible for the introduction of AIS. However, they do have the potential to spread AIS within the Great Lakes. In the next reissuance of the permit the Department will re-evaluate the need for ballast water treatment standards for Great Lakes vessels. Refer to the response to "K" that contains a related response.

**Q Treatment on lakers is not technically or economically possible.**

The Department understands the issues with retrofitting the large and older Great Lakes vessels with ballast water treatment systems, and they are substantially different from the oceangoing vessels. Many of the Great Lakes vessels have a ballast water capacity three times that of the largest oceangoing vessels (15 million vs. 5 million gallons). In addition, the ballast tanks are in various configurations, often with several tanks that may not be interconnected, which require multiple treatment connections.

Because of these differences, the requirements applicable to Great Lakes vessels in Subsection 4.1.3 of the permit states they are not subject to the treatment discharge standards. The Department is exempting them from ballast water treatment for the first term of this permit; however, the exemption will be reconsidered in the next permit reissuance to take into account any advancement in treatment that could change this decision.

**R. Standards more stringent than IMO necessary for better protection and to drive technology.**

Enacting into law stringent performance standards will drive the development of technology. Many companies around the world are actively working on treatment systems, but the uncertainty of a standard has a negative effect on innovation and investment. It would be beneficial to set a high treatment standard now to allow development of commercially available treatment systems. Wisconsin agrees that treatment performance standards more stringent than the IMO are necessary. A standard 100 times more restrictive than the IMO appears achievable, which has been the standard proposed by the U.S. representatives at the IMO convention in 2004, and was proposed by the House of Representatives in the U.S. Coast Guard Authorization Bill H.R. 2830 in 2008.

The Department recognizes the IMO standard may need to serve as interim minimum level until treatment systems capable of a higher standard are commercially available. To account for this situation, a treatment feasibility determination in Subsection 4.1.1 of the permit allows the less stringent IMO standard to become the required standard if the Department determines the treatment technology is not commercially available.

**S. Close the St. Lawrence Seaway and Great Lakes to oceangoing vessels.**

Closure of the St. Lawrence Seaway to oceangoing vessels was expressed as a remedy in several comments. As discussed in "Z", there are other vectors for the introduction of AIS, so even closing the St. Lawrence Seaway is not a future guarantee that all AIS introductions will be eliminated.

The National Academy of Sciences evaluated closure in the "Great Lakes Shipping, Trade, and Aquatic Invasive Species" 2008 report, and stated that because of economic, environmental, political, and legal unknowns closure is a high risk strategy and impractical. Closure would require legislation by both the U.S. and Canada, and legal and political issues could take many years to resolve, if at all. The seaway provides important access to transoceanic shipping and global trade. Shifting seaway cargo to other modes of transportation could have other adverse environmental impacts, and increase costs to move cargo into the region.

**T. Cost of damage caused by AIS from oceangoing vessels exceeds their financial benefits.**

Documentation on this the economic impact of AIS is substantial. The National Academy of Sciences 2008 report on "Great Lakes Shipping, Trade, and Aquatic Invasive Species", and the April 2008 U.S. Coast Guard EIS prepared for their proposed ballast water discharge standard, contain detailed economic information. The financial benefits from oceangoing shipping, while significant, are small compared to the great cost to the Great Lakes environment and the economy it supports, including the fishing industry, recreation, water supplies, and property value.

**U. Environmental Assessment inadequate, EIS necessary.**

Refer to the Environmental Assessment (EA) documents that contain a response to comments on the EA.

**V. Existing ballast water management practices and inspections have had success.**

The ballast water exchange and saltwater flushing management practices were implemented with some success, but always with the understanding this was an only an interim measure. The range of these ballast water management practices in their effectiveness in preventing the introduction on nonindigenous varies. One study suggests that it is 80% to 99% effective, while other studies indicate an effectiveness rate as low as 50%. Saltwater tolerant species may survive ballast water exchange or saltwater flushing. Treatment of ballast water is necessary to better assure that viable nonindigenous species are not discharged.

**W. Oceangoing vessels are taking responsibility for AIS and are testing treatment systems.**

The Department recognizes that the oceangoing shipping companies acknowledge their ballast tanks are the primary source responsible for introducing nonindigenous species. The Department is also aware that some oceangoing vessels have installed prototype ballast water treatment systems that treat some of their ballast water, in order to evaluate the system. An area of concern for the Great Lakes is the ability of treatment systems to function properly in freshwater, as some treatment technologies rely on salinity to function.

**X. Issue with “off ramp” for applicable ballast water treatment standards.**

Subsections 4.1.1 and 4.1.2 of the permit related to changing the ballast water treatment standard and time extension for the effective date were removed. These were referred to the “off ramp” provision because they allowed for a reduction in the standard and effective date, if the permittee could justify the change by providing documentation on the lack of available treatment technology. This incorrectly placed the burden on the permittee for determining what the standard should be. This provision was replaced with a new Subsection 4.1.1 that allows for a less stringent treatment standard if the Department makes a determination that treatment technology is not commercially available. The Department has committed to making this treatment feasibility determination by December 31, 2010. Any changes in the treatment standards or effective dates will be made with a formal permit modification.

**Y. DNR doesn’t have authority, unconstitutional restraint of trade, and federal preemption.**

A comment stated the proposed general permit will likely be subject to challenge based on unconstitutional restraint of interstate commerce. The Sixth Circuit Court of Appeal recently found that Michigan’s permit program for discharges of ballast water did not result in an unconstitutional restraint of interstate commerce. *See Fednav, Ltd, et al. v. Chester, et al., 547 F.3d 607 (6<sup>th</sup> Cir., 2008).*

A lack of a water quality standard for nonindigenous and aquatic invasive species does not prevent the Department from issuing a permit with a discharge standard that is technology based. The water quality standard implemented in the ballast water general permit is found in s. NR 102.01(2) which states “Water quality standards shall protect the public interest, which includes the protection of public health and welfare and the present and prospective uses of all waters of the state for public and private water supplies, propagation of fish and other aquatic life and wild and domestic animals, domestic and recreational purposes, and agricultural, commercial, industrial, and other legitimate uses. In all cases where the potential uses are in conflict, water quality standards shall protect the general public interest.” Although this standard does not expressly apply to AIS, the Department reads it broadly as the regulation of ballast water is necessary to protect the present and prospective uses of the Great Lakes for the propagation of fish and other aquatic life, wild and domestic animals, and recreational purposes.

As the Clean Water Act is currently drafted, there is no preemption issue with respect to Wisconsin regulating ballast water under its independent state authority. There is the potential that federal legislation will be passed that will cover the discharges of ballast water and would preempt the state from regulating. Wisconsin prefers a federal approach but can no longer wait for a federal solution to this issue.

**Z. Other vectors for introducing and spreading AIS.**

As discussed in “O” above, we recognize there are other possible vectors for the introduction and spreading of AIS. According to the National Academy of Sciences 2008 report on “Great Lakes Shipping, Trade, and Aquatic Invasive Species”, other vectors include deliberate releases, unauthorized introductions, natural extension of the species range, hull fouling, and recreational boating. Because ballast water is the primary source that is responsible for up to 70% of all AIS introductions and spreading, the Department believes it is important to concentrate on regulating ballast water discharges.

**Ballast Water Discharge General Permit**  
**WPDES WI-0063835-01**  
Changes to Permit since the Public Notice

PERMIT CHANGES

Permit Cover Page Revised the effective date to February 1, 2010 to reflect a delay in the permit issuance. February was chosen instead of the beginning of January to avoid the possibility that some ships may still be operating in January before the close of the shipping season for the winter. The permit expiration was also extended so that the permit is good for 5 years.

1.2 Authorized Discharges Clarified that diseases includes VHS.

1.3 EPA Vessel General Permit Since the discussion on the EPA VGP is a permit requirement it was made into an explanatory note under Subsection 1.2, and is part of the discussion in the fact sheet general description. A new sentence states that if there is federal legislation establishing ballast water discharge standards, we would review those standards and decide if a Wisconsin permit would no longer be necessary. Subsection 1.3 is now Exclusions.

1.3.1 Sealed Ballast Tanks The "...vessels that do not discharge any ballast water" was removed from the exemption. Only vessels with permanently sealed ballast tanks are exempt. Previously the permit exclusion applied to any vessel that would not discharge. If a vessel has ballast tanks (other than sealed tanks), it has the potential to carry ballast water and discharge so a permit is required. The Subsection was re-named "Sealed Ballast Tanks" instead of "No Discharge", and was 1.4.1.

1.3.2 Captain of the Port Zone A definition was added. This subsection was 1.4.2.

3.1 Intake Filtration Residuals and Separated Solids Clarified that the prohibition is applicable to both oceangoing and Great Lakes vessels.

3.2 Disposal of Solids Removed from Ballast Tanks or by Treatment Systems The compliance date of January 1, 2012 was removed and replaced with immediately. The EPA VGP prohibits the discharge of sediment in the Great Lakes in Subsection 2.2.3.3 under bullets 3 and 4.

A new note explains the prohibition of the discharge in the permit doesn't imply that the ballast tanks shouldn't be cleaned. Vessels should still clean their ballast tanks as needed, but they may not discharge sediment back into the water.

EPA explains the sediment prohibition in the VGP fact sheet on page 57, "... sediments suspended as a result of ballast tank cleaning, are not eligible for coverage under this permit and must be disposed of in accordance with applicable local, State, and Federal regulations." In Wisconsin, s. NR 102.04(1)(a), Wis. Adm. Code, contains the water quality standard that prohibits objectionable deposits on the bed of a water body. The legal reference in the proposed permit was s. 30.12, Wis. Stats., which contains language prohibiting the deposition of any material upon the bed of any navigable water. Because this citation is applicable to the Department's water regulation program, it was an incorrect to reference this authority for the WPDES permit, so it was deleted. The correct authority to cite is s. NR 102.04(1)(a), Wis. Adm. Code, and this is discussed in the fact sheet under Subsection 3.2.

Clarified in a note that the report of solids disposal under this permit is only applies when it occurs within the jurisdiction of Wisconsin, and is applicable to both oceangoing and Great Lakes vessels.

3.3 Seawater Permit language was clarified with an explanatory note to explain the prohibition on the discharge of seawater. To protect Wisconsin waters from the potential of acute chloride toxicity at the point of ballast water discharge, a chloride limit is necessary. Oceangoing vessels still must comply with any applicable ballast tank exchange or flushing requirement, but if they plan on discharging ballast water in Wisconsin it must comply with the chloride limit. Dilution with freshwater as necessary to meet the limit is allowable. The chloride limit is now also expressed in an equivalent salinity concentration so that vessels measuring the salinity with a refractometer can determine compliance.

4.1 Ballast Water Treatment Requirements Revised the compliance date for new vessels from 2013 to 2012, which is consistent with the IMO schedule and Minnesota's SDS permit for ballast water. The date for existing vessels was extended from January 1, 2012 to January 1, 2014. The 2013 and 2012 dates were initially chosen for Wisconsin's permit because New York has these dates in their 401 state water quality certification. However, we believe 2012 for existing vessels is too aggressive and likely not feasible, especially prior to the date for new vessels. This will advance compliance by two years before the IMO schedule and is believed reasonable.

Revisions to Table 4.1 summarizing the treatment requirements were made to reflect changes to the permit. The use of "Enhanced IMO Standard" was replaced with "Wisconsin Standard" to avoid potential confusion with the IMO. The Extra Enhanced IMO Standards in Table C for new vessels was eliminated (Table C is now for the biocide limits), because we don't believe a treatment system's performance would be designed any differently for new versus existing. The difference between new and existing vessels is the time it may take to install a treatment system. New vessels will be subject to the same discharge standard as existing vessels, but with a faster time frame because it can be designed into a new vessel efficiently. Retrofitting existing vessels may be difficult and the design and installation details could vary from vessel to vessel.

4.1.1 Treatment Feasibility Determination This contains a description of the Department's "Treatment Feasibility Determination", in place of the previous two Subsections 4.1.1 and 4.1.2 that described how the permittee was to request a change in the applicable discharge standard for existing vessels, or request a time extension for new vessels.

4.1.2 Oceangoing Vessel Requirement Requirements for oceangoing vessels was clarified by adding a new subsection.

4.1.3 Great Lakes Vessel Requirements Requirements for Great Lakes vessels was clarified by adding a new subsection. Great Lakes vessels are not subject to the ballast water treatment discharge standards that oceangoing vessels are because they aren't the source of non-indigenous species. However, Great Lakes vessels have the potential to spread aquatic invasive species within the Great Lakes, so they must take preventative measures through the implement of ballast water best management practices, such as avoiding taking on ballast water in areas know to have AIS, and the prohibition from discharging sediment.

4.2 Monitoring Requirements The second sentence regarding operating treatment systems to maximize the destruction or removal of organisms was removed as not enforceable. The inclusion of numerical discharge standards is sufficient. We also don't want to encourage the use of excessive amounts of chemicals to maximize treatment that could result in the discharge of remaining excess chemicals.

4.2.2.1 Effluent Limits for Biocide Treatment Added at the end of the first sentence that biocidic usage must also comply with the Department's approval of biocides. A new sentence notes the use of a biocide is subject to the requirements in Subsection 5.8 of the EPA Vessel General Permit.

4.2.2.2 Effluent Limits for Other Biocides Added a new note regarding the need for FIFRA approval from EPA that may be necessary for the new use of a biocide for ballast water treatment.

4.4 Monitoring Plan Clarified that the monitoring plan only applies to vessels that treat their ballast water, so it doesn't apply to Great Lakes Vessels. The time for preparing the monitoring plan was changed from 12 months after permit issue to prior to treating ballast water. The change was necessary because most vessel owners won't know what treatment system they may be installing 12 months after permit issuance. The U.S Coast Guard protocol was singled out because they are expected to set the monitoring standard since they approve the treatment systems. Department review of the plan isn't required and the plan doesn't need to be submitted unless it's requested.

4.5 Ballast Water Treatment System Approval This condition now simply states that Department approval of ballast water treatment systems is necessary. A note explains the Department intends to use a streamlined process and the details are contained in the fact sheet.

4.6 Safety Exemption Language was revised to include documentation of when a safety exemption occurs, which is consistent with the requirements in the EPA Vessel General Permit.

4.7.1 Ballast Log Book A new (e) was added to the log book for the reporting on safety exemptions.

4.7.2 Discharge Monitoring Reports Clarified that a DMR is not required in years prior to when an onboard ballast water treatment system becomes operational. There would be nothing to report on the DMR before treatment is installed.

5 Schedules of Compliance Revised the permit coverage required action in Subsection 5.1 by removing references to the effective date of the EPA Vessel General Permit as unnecessary. A six month time period is allowed for existing vessels to submit a NOI.

Revised Subsection 5.2 to be consistent with the changes made to the discharge standards and effective dates in Section 4.

Replaced the "Engineering Report" and "Plan Approval" actions with one action for "Plans and Specifications" to be consistent with the revised permit language in Subsection 4.5.

Removed compliance schedule 5.6 that allowed for a compliance schedule for discontinuing the surface water discharge of solids removed from ballast tanks, because this isn't consistent with the EPA Vessel General Permit that prohibits this discharge immediately.

6 Standard Requirements Clarified in the first paragraph that the Standard Requirements apply. The permit Standard Requirements are intended for industrial facility permit holders, and some may not make sense or apply to the ballast water permit. Revisions were made that either removed or revised the Standard Requirement as appropriate. Removed the following from the Standard Requirements: 6.2.2 "Unscheduled Bypassing" and 6.2.3 "Scheduled Bypassing" because they relate to sewage collection systems; and the part of 6.2.4 "Proper Operation and Maintenance" that relates to a certified operator.

Two additional standard requirements were included that are applicable to general permit, 6.3 "Continuation of an Expired Permit", and 6.4 "Severability".

## FACT SHEET CHANGES

General Description of Activities Covered Under This GP In the second paragraph a better link to EPA's web site is provided that links to the NPDES page instead of the aquatic invasive species page. Two new paragraphs were added to describe the state's permitting authority. In the third paragraph, the last two sentences were revised to clarify the reason for the permit. The statement that existing practices haven't stopped the introduction of AIS was clarified, because there are other vectors for the introduction of AIS, and even with treatment, AIS could still be introduced into the Great Lakes.

1 Applicability Added the list of what vessels qualify for an exemption with clarifying statements on why or what still needs to be permitted. Added a statement under what circumstances the Wisconsin permit would become unnecessary, and that Wisconsin supports uniform Federal regulations for ballast water.

2 Permit Coverage Permit coverage was revised to reflect the delay in issuance of the permit. A link to EPA's web site for a PDF of the NOI form was provided.

3 Prohibited Discharges Explained in more detail the three prohibited discharges. Subsection 3.2 reference to a compliance schedule with an effective date of no later than 2012 was removed. Inclusion of a compliance schedule wasn't consist with the EPA VGP or the Minnesota ballast water permit that prohibit the discharge of sediment immediately effective with the issuance of the permit. The legal reference for s. 30.12, Wis. Stats., was replaced with s. NR 102.04(1)(a), Wis. Adm. Code (refer to the changes made to Subsection 3.2 of the permit on page 1 for explanation).

4.1 Ballast Water Treatment Requirements Former Subsection 4.1.1 and 4.1.2 language was revised to reflect elimination of the "off ramp" concept for changing the discharge standards and time extension that placed that responsibility on the permittee. The Department's treatment feasibility review is now described that allows for a change in the treatment standard or change in the effective date.

4.1.2 Oceangoing Vessel Requirement New language clarifies the requirements for oceangoing vessels.

4.1.3 Great Lakes Vessel Requirement New language clarifies that Great Lakes vessels are not subject to ballast water treatment requirements for this permit, but may in the next reissuance. Great Lakes vessels must implement best management practices for ballast water and sediment to reduce the potential threat of spreading AIS and diseases.

4.2.2 Biocides A paragraph was added in the discussion on biocides that the Department isn't endorsing the use of chlorine or other biocides because the limit contains a permit for them. Hazards exist when using biocides.

4.4 Monitoring Plan The language was revised to reflect the change in the permit for when the plan is submitted.

4.5 Ballast Water Treatment System Approval The details of the Department's intended streamlined plan and specification approval process are now contained in the fact sheet instead of the permit. Clarification was provided on the following approval criteria:

- (a) Replaced the word "approved" with "verified" to avoid any misunderstanding that the referenced organizations must approve of the treatment system. The intent is that these organizations with the expertise to review ballast water treatment systems have verified that they work.
- (b) A new criteria to highlight the existing oversight by the U.S. Coast guard that their approval is required for all ballast water management treatment methods.

4.6 Safety Exemption A statement was added that requires documentation of the circumstances of when a safety exemption occurred to be consistent with the EPA VGP.

Section 5 Compliance Schedules Deleted Compliance Schedule 5.6 that allowed time until 2012 to discontinue the surface water discharge of solids removed from ballast tanks. This wasn't consistent with the EPA VGP that prohibits this discharge immediately.

Compliance Schedules 5.1, 5.2, and 5.3 were revised to reflect the permit changes in the date due.

Compliance Schedule 5.3 was revised to simply state that plans and specifications must be approved by the Department. The details on this process are in Subsection 4.5 of the fact sheet.

Attachments The Environment Assessment was removed as an attachment to the fact sheet so that it is a stand alone document. A new attachment for the "Treatment Feasibility Determination Scope of Work" was added, which is referenced in Subsection 4.1.1.

Prepared by:

Wisconsin Department of Natural Resources  
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