

Permit Fact Sheet

General Information

Permit Number:	WI-0063835-01-0 General Permit
Activity:	Ballast Water Discharge
Permittee:	U.S. and international commercial vessels ≥ 50 meters in length and ≥ 8 m ³ 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

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

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.