September 26, 2008

TO: INTERESTED PARTIES

RE: Discharge of Ballast Water to Minnesota State Waters of Lake Superior –
State Disposal System General Permit No. MNG300000

On September 23, 2008, the Minnesota Pollution Control Agency (MPCA) Citizens’ Board voted to approve the Findings of Fact, Conclusions of Law, and Order approving the issuance of the Ballast Water Discharge State Disposal System General Permit No. MNG300000 for vessels that transit through, or discharge ballast water to, the Minnesota State waters of Lake Superior. The Findings of Fact, Conclusions of Law, and Order document concludes that the decision to issue the Ballast Water Discharge General Permit satisfied the requirements of Minn. Stat. chs. 115 and 116 and Minn. R. chs. 7000, 7001, 7050, and 7053.

We appreciate the time and effort of those who submitted comments on the Ballast Water Discharge General Permit.

Sincerely,

Brad Moore
Commissioner

BM/MJF:gs
IN THE MATTER OF A REQUEST FOR ISSUANCE OF THE SDS GENERAL PERMIT MNG300000 FOR BALLAST WATER DISCHARGES FROM VESSELS TRANSITING MINNESOTA STATE WATERS OF LAKE SUPERIOR

FINDINGS OF FACT

The above-entitled matter came before the Minnesota Pollution Control Agency (MPCA) Citizens’ Board (Board) at a regular meeting held in St. Paul, Minnesota, on September 23, 2008. Based on the record before it, the MPCA hereby makes the following Findings of Fact, Conclusions of Law, and Order.

FINDINGS OF FACT

This matter involves the proposed State Disposal System (SDS) General Permit MNG300000 (Permit or SDS Permit) for discharges of ballast water to Minnesota State waters of Lake Superior. The MPCA must decide under applicable statutes and rules whether to issue the Permit.

1. The MPCA is authorized and required to administer and enforce all laws relating to the pollution of any waters of the State. Minn. Stat. § 115.03, subd. 1(a).

2. The MPCA is authorized to require and issue a State Disposal System Permit for ballast water discharges pursuant to Minn. Stat. § 115.03, subd. 1(e), Minn. Stat. § 115.07, and Minn. R. 7001.0030.

3. The MPCA has the authority to issue a single permit to a category of permittees whose activities are the same or substantially similar, referred to as a general permit, under Minn. R. 7001.0210.

4. The MPCA has authority to issue this Permit. Minn. Stat. chs. 115 and 116, and Minn. R. chs. 7000 and 7001.

BACKGROUND

5. Ballast water discharges to Lake Superior from oceangoing (“Salties”) and Great Lakes-only (“Lakers”) vessels may contain aquatic invasive species (AIS) that could survive in their new location, upsetting the local aquatic ecosystem.

6. Aquatic invasive species compete with native species for food and habitat, alter aquatic ecosystems, and cause significant economic impact.

7. Aquatic invasive species are not found uniformly in the Great Lakes. Of the more than 125 non-native aquatic species established in the Great Lakes, only about 1/3 are found in Lake Superior.
8. Discharges of ballast water from commercial vessels have been identified as the primary source of recorded introductions of aquatic invasive organisms into the Great Lakes since the St. Lawrence Seaway was opened in 1959.

9. More ballast water is discharged into the Port of Duluth/Superior than any other Great Lakes port. On average, ships discharge in excess of 18 million gallons of ballast water a day to the St. Louis River Harbor during the shipping season.

10. The Duluth Seaway Port Authority estimates that approximately 5 percent of the ballast water discharged to Lake Superior is from oceangoing vessels and approximately 95 percent comes from Lakers.

11. It is well established that ballast water from oceangoing vessels can carry within their tanks, and potentially introduce, aquatic invasive species from foreign ports.

12. The MPCA recognizes that ballast water management techniques, such as ballast water exchange and salt water flushing, are appropriate interim steps for preventing the introduction of AIS from oceangoing vessels. Most ballast experts believe that ballast water (treatment) technology will ultimately provide the best protection for the Great Lakes and all of the nation’s waters.

13. Due to the large volume of ballast water that Laker vessels transport around the Great Lakes annually, the U.S. and Canadian Laker fleets also play a role in spreading and dispersing species already introduced and established in the Great Lakes. Lakers can take on ballast water with AIS in one of the Great Lakes and discharge those AIS into Lake Superior via ballast water.

14. Therefore, the untreated discharge of ballast water from both Saltyes and Laker vessels represents a risk to the Lake Superior ecosystem and Minnesota’s inland waters.

15. To address the threat of the introduction of AIS into Minnesota State waters of Lake Superior and Minnesota’s inland waters through ballast water discharges, MPCA is issuing SDS General Permit No. MNG300000.

**PERMIT APPLICABILITY**

16. The Permit applies to all vessels 50 meters in length or more and having a ballast water capacity of 8 cubic meters or more that transit through or discharge ballast water to Minnesota State waters of Lake Superior.


18. This Permit is applicable to both oceangoing and Great Lakes-only vessels.
19. The Permit potentially covers approximately 55 to 60 U.S. Flagged Lakers, 60-65 Canadian Flagged Lakers, and 100-200 foreign flagged vessels. The number of vessels meeting the applicability criteria entering Minnesota State waters of Lake Superior varies from year to year.

20. The following vessels are not required to obtain coverage under this Permit: 1) Vessels that carry ballast in permanently sealed ballast water tanks that are not able to discharge; 2) Vessels that only operate within the Duluth Captain of the Port Zone established by the U.S. Coast Guard; 3) Vessels that only discharge ballast water directly to, or a transport vessel which discharges directly to, an on-shore treatment facility; 4) Vessels implementing flow-through or “flush” ballast water management techniques approved by the MPCA; and 5) Vessels of the Armed Forces as defined in Part 312(a)(14) of the federal Clean Water Act.

BEST MANAGEMENT PRACTICES

21. The Permit requires vessel owners or operators to implement Best Management Practices (BMPs) for the management of ballast water as required by the vessel’s approved Ballast Water and Sediment Management Plan. BMPs include operating procedures and practices to control the discharge of AIS and shall be implemented immediately upon issuance of the Notice of Coverage to the vessel owner or operator.

22. The Permit prohibits new discharges to specific areas of Lake Superior as found in Minn. R. 7050.0180, subp. 3 and identified in the Permit.

23. The Permit prohibits discharges of non-suspended sediment to Minnesota State waters of Lake Superior due to concerns about AIS in ballast water sediment. “Non-suspended sediment” means those solids that remain in the ballast tank after normal vessel operations. Sediment that is re-suspended during ballast tank cleaning operations is considered “non-suspended sediment.” Common practice is to re-suspend these solids during routine cleaning operations and discharge the wash water during transit in open water. The MPCA is concerned this practice has the potential to result in the introduction and spread of AIS in Minnesota waters of Lake Superior.

24. The Permit prohibits discharges of ballast water to Minnesota harbors of Lake Superior from vessels fully ballasted with sea water unless the vessel can demonstrate to the satisfaction of the MPCA that the discharge will comply with Minn. R. 7050.0211 and Minn. R. 7052.0210. Since sea water has the potential to be toxic to freshwater organisms, this provision ensures that a discharge of ballast water to Minnesota harbors of Lake Superior will not jeopardize the continued existence of the harbor aquatic ecosystem.

BIOLOGICAL PERFORMANCE STANDARDS

25. In addition to the BMPs discussed above, the Permit requires vessels that discharge ballast water to Minnesota State waters of Lake Superior to install ballast water treatment capable of meeting the biological performance standards based on the Performance Standards contained in Section D-2 of the IMO Convention, with the exception of the standard for vibrio cholerae. Vibrio cholera was not included because analytical methods to enumerate that organism in ballast water have not been validated.

26. MPCA staff conducted an evaluation of the available information on numerous treatment technologies currently being developed for the treatment of ballast water.
27. This evaluation was not completed to “pre-approve” treatment technologies or specific treatment systems. The evaluation was done to: 1) gather and assess the information available on ballast water treatment technologies; 2) make a determination on whether technologies will be available for implementation to meet the performance standards included in the general permit; and 3) estimate potential costs per vessel for implementing and operating treatment technology.

28. Based on the evaluation, MPCA staff determined that ballast water treatment technologies capable of achieving compliance with the IMO D-2 standards will be available for use onboard ships within the timeframe of the proposed implementation schedule under the Permit.

IMPLEMENTATION SCHEDULE FOR BALLAST WATER TREATMENT

29. For existing vessels meeting the applicability criteria, compliance with the biological performance standards shall occur not later than January 1, 2016.

30. For new vessels constructed after January 1, 2012, and meeting the applicability criteria, compliance with the biological performance standards shall occur prior to commencement of vessel operation in Minnesota State waters of Lake Superior.

31. The MPCA considered several factors in the development of the implementation schedule included in the Permit. The most influential considerations include treatment technology development, dry dock schedule, and maintenance system development.

32. While numerous treatment technologies are in various stages of development and some may be considered commercially available, the technology development for ballast water is an emerging field and changing rapidly. Consideration must be given to the lack of “proven” treatment technologies currently available, especially in freshwater applications. It will take some time to complete the land-based freshwater validation studies prior to any onboard implementation.

33. The availability of dry docking slips in the Great Lakes for the Laker vessels was considered. Laker vessels are usually sent to dry dock on a schedule of every five to six years so that engines can be overhauled and the other necessary maintenance performed. Most dry docking is done in the off-season period of January through March, when the Great Lakes are at least partially frozen. There are currently thirteen 1,000-foot vessels in the U.S. Great Lakes Fleet. According to the Duluth Seaway Port Authority, there are only two dry dock slips in the Great Lakes which can accommodate the 1,000-foot Laker vessels. This leads to virtually no availability of dry dock facilities on a more accelerated schedule. For Salties, the usual dry dock schedule is every three years. The vessels are in constant use except when in a dry dock situation, so any significant modifications to the piping systems would have to be done only during that time.

34. New treatment technologies installed on vessels will need system support from the system suppliers or companies formed to be on demand to troubleshoot and fix problems that arise in system operations, as the vessel’s crew probably would not have the expertise to do such work. Such support systems are being considered by some suppliers, but are not currently available in the numbers which would be needed for the hundreds of vessels that would be impacted.

NONDEGRADATION
35. The MPCA completed the nondegradation review consistent with all applicable Minnesota Rules including Minn. R. 7050.0180 Nondegradation for Outstanding Resource Value Waters and Minn. R. 7052.0300 Lake Superior Basin Water Standards-Nondegradation. The purpose of the Permit is to prevent the introduction and spread of AIS in Minnesota waters of Lake Superior. Nondegradation review is required for new and expanding discharges as defined in Minn. R. 7050.0180. New discharges to Lake Superior are those that were not in existence on November 5, 1984, the date on which Lake Superior was designated as an outstanding resource value water. Although MPCA staff determined that most discharges are not new or expanded, MPCA nevertheless would conclude there are no prudent and feasible alternatives to ballast water discharge.

36. The Permit, which requires ballast water treatment and other BMPs, such as alternatives to the discharge of non-suspended ballast tank residual sediments to Minnesota waters to prevent the spread of AIS, is much more protective than the former practice of allowing untreated ballast water discharges to Lake Superior. The Permit requires treatment of ballast water discharged from all vessels meeting the size criteria, regardless of their in service date. The Permit will result in a decrease in the potential for discharge of AIS, will prohibit expanded discharges of untreated ballast water, and will impose controls on previously unregulated existing discharges.

STAKEHOLDER INPUT

37. The MPCA provided for stakeholder involvement in this Permit process. Input on Permit content was sought beginning in March 2008. Four large group external stakeholder meetings were held in St. Paul and Duluth; the first two on March 3 and 4, 2008, to solicit input on issues to be addressed in this Permit process, and the second two meetings on April 15 and 16, 2008, to review working draft Permit language. Stakeholders attending these meetings included representatives of shipping companies, trade associations, conservation organizations, Canadian government representatives, environmental groups, citizens, natural resource experts, State and local units of government, Tribes (Grand Portage Band of Lake Superior Chippewa), State agencies (Minnesota Department of Natural Resources), federal agencies (National Park Service, U.S. Coast Guard, U.S. Fish and Wildlife Service), and consultants.

PUBLIC NOTICE/PUBLIC COMMENT

38. In accordance with the requirements of Minn. R. 7001.0100 and Minn. R. 7001.0210, subp. 4, the MPCA prepared a draft SDS Permit and gave the public an opportunity to comment on the draft SDS Permit. The draft SDS Permit was on public notice June 30 to July 30, 2008.

39. The MPCA received 19 written comment correspondence during the comment period. Copies of the comments were provided in Attachment 2.

40. Several comments were received in the following areas: 1) concerns that State regulation will be inconsistent throughout the Great Lakes region and that federal regulation is the preferred approach; 2) whether Laker vessels should be excluded from the ballast water treatment requirements included in the Permit; 3) concerns that the cost to comply with the Permit is not
affordable by the shipping industry; 4) concerns that the implementation schedule to install ballast water treatment is either too long or too short or inappropriate at this time; and 5) whether the biological performance standards in the Permit are stringent enough to protect Lake Superior.

MPCA CONSIDERATION OF PUBLIC COMMENTS

41. The MPCA reviewed each of the comments and provided a detailed response to each. The responses of the MPCA staff are set out in the Responses to Comments document (Attachment 3).

42. All comments are identified and responses are provided in Attachment 3 to these findings. Some specific comments and the MPCA response to those comments are summarized below.

43. The MPCA concurs with the reasoning of MPCA staff in its Responses to Comments document (Attachment 3) and adopts that reasoning by reference in these findings.

SELECTED PUBLIC COMMENTS AND MPCA RESPONSES

44. Several commenters expressed concern that the Permit will contribute to a fragmented regulatory environment for ballast water discharges into the Great Lakes. The commenters prefer a federal solution for ballast water issues rather than regulation by individual states.

45. The MPCA has long stated its preference for a federal solution that is adequately protective of Minnesota waters to address AIS in ballast water. Efforts by Congress to pass more stringent ballast water laws have been ongoing over the past few years, yet no such law is in effect to date. The MPCA believes the National Pollutant Discharge Elimination System (NPDES) vessel discharge general permit proposed by U.S. Environmental Protection Agency (USEPA) on June 17, 2008, will not result in additional protections from AIS in ballast water for the Great Lakes over required existing practices. The MPCA believes its permit is the appropriate regulatory vehicle to protect the Minnesota State waters of Lake Superior because its permit includes substantive treatment requirements rather than relying solely on best management practices. Finally, State legislation enacted in 2008 makes it clear that legislators demanded a regulatory role for the MPCA on this issue by requiring the MPCA to approve vessels’ Ballast Water Management Plans and the MPCA’s specification of ballast water record requirements (Minn. Stat. §§ 115.0306 and 115.0307). The proposed Permit is the vehicle for MPCA implementation of this legislation.

MPCA continues to work with other Great Lakes states and all authorities that have regulatory jurisdiction over the Great Lakes to promote uniformity with the overriding goal of having sufficiently protective regulatory standards.

46. Several commenters stated that the Laker vessels do not pose a risk of introducing new invasive species to the Great Lakes since they do not leave the Great Lakes and St. Lawrence Seaway ecosystem.

47. The MPCA finds that the greatest concern with Lakes-only vessels is the potential for their ballast water discharges to cause and/or accelerate the redistribution of invasive species between each of the Great Lakes and their associated harbors. Preliminary results from an ongoing study led by Dr. Sara Bailey of Fisheries and Oceans Canada find aquatic nonindigenous species making up 11 percent of the cumulative quantity of zooplankton in the ballast water of the Lakers studied. A slide from a 2008 presentation by Dr. Bailey states that “Lakers are an unlikely source of new aquatic
nonindigenous species (ANS), but they are likely very important for the spread of ANS in the Great Lakes.” Natural barriers, currents, distance, and unique water conditions would otherwise prevent or significantly delay the spread of AIS. Delaying the spread by years or decades can be critical to the protection of Minnesota waters as it allows resource managers additional time for actions to prevent or respond to movement into Minnesota waters of Lake Superior and inland waters. Delaying AIS introduction also delays the incurred ecological and economic costs associated with AIS. Thus, intra-Great Lakes movement of AIS through ballast water discharges is a threat to Minnesota State waters of Lake Superior and Minnesota’s inland lakes.

48. Several commenters stated that the potential costs associated with the installation of ballast water treatment may render the shipping industry uncompetitive in the Great Lakes and the additional administrative costs associated with the Permit may put Minnesota’s ports at a competitive disadvantage.

49. The MPCA disagrees that the requirement to install ballast water treatment systems will cause the shipping industry to be uncompetitive in the Great Lakes. In general, shipping currently has a cost advantage over rail and trucking for hauling a ton of cargo a given distance. The MPCA simulation analyses find that the costs of installing and operating treatment systems for Lakes-only vessels as a whole are affordable. It is also important to note that Great Lakes shipping firms will have until 2016 to build treatment systems into their operating and financial plans. The MPCA expects that an extended planning horizon will allow shipping firms to design a least-cost path to meeting the Permit’s requirements.

The MPCA believes that the administrative costs associated with the proposed permit are modest and will not influence the competitiveness of Minnesota’s ports. Administrative costs are associated with completing the application, permitting fees, submittal of ballast water report forms and, eventually, reporting monitoring results for parameters associated with the ballast water treatment technology.

50. Several commenters were concerned that the implementation schedule for installing ballast water treatment is either too long or too short, or inappropriate at this time given the status of ballast water treatment development. Related comments also expressed concern that the Permit does not include requirements for interim ballast water treatment.

51. The MPCA has focused its efforts on a timely and feasible implementation schedule for ballast water treatment to minimize or eliminate the threat of AIS on all vessels which discharge ballast water into Minnesota State waters of Lake Superior. The MPCA has considered several factors in developing the implementation schedule, including treatment technology development, dry dock schedule, and maintenance system development. MPCA staff acknowledges that while numerous treatment technologies are in various stages of development and some may be considered commercially available, the technology development for ballast water is an emerging field and changing rapidly. The MPCA finds the implementation schedule for ballast water treatment in the Permit provides a reasonable time period, based on the progression of technology, for Permittees to comply with the biological performance standards. In addition, the MPCA expects that an extended planning horizon will allow shipping firms to design a least-cost path to meeting the Permit’s requirements.

The Permit requires that each vessel employ BMPs, as detailed in the Ballast Water and Sediment Management Plan, as an interim step until ballast water treatment can be fully implemented. While
the MPCA is aware of several efforts underway to develop effective interim treatment measures, the MPCA is unaware of any established, proven interim treatment measures to address AIS that could be specified within the permit at this time. The MPCA intends to remain engaged in the progress of ballast water treatment research and development, including interim treatment processes, for the control of AIS.

52. Several commenters were concerned that the biological performance standards were not stringent enough to protect Lake Superior from AIS. Some commenters believe that the only adequately protective standard is zero viable organisms.

53. After extensive research, the MPCA determined that the biological performance standards contained in the permit are technically achievable within the implementation schedule and are necessary to better protect the Minnesota State waters of Lake Superior and inland waters. The MPCA was unable to identify any evidence that suggests that there is technology available now, or that technology will be available within the timeframe of the implementation schedule, that would be capable of achieving a standard of zero viable organisms. In the absence of a technology that could achieve a zero viable organisms discharge standard, imposing such a standard in the Permit would not result in meaningful protection for Minnesota’s aquatic environment. As technologies for the treatment of ballast water develop and evolve, the treatment standard in the Permit can and will be reevaluated.

**PERMIT REVISIONS BASED ON PUBLIC COMMENTS**

54. The MPCA reviewed and considered all commenters received and made additional revisions to the SDS Permit to provide clarification of requirements in several Permit terms and conditions. Deleted language is shown in strikethrough and new language is shown in italics. The Permit revisions are shown below:

**A. Permit Condition 11 – Ballast Water and Sediment Management Plan**

The Permittee shall maintain, and revise as necessary, a Ballast Water and Sediment Management Plan. The Plan must be updated to reflect current shipboard ballast water management practices that are designed to minimize the discharge of AIS. The Plan may be developed in accordance with Appendix A of the current U.S. Coast Guard Navigation and Vessel Inspection Circular (NVIC) and must include, at a minimum, the following:

a. Operation and maintenance procedures for the vessel and crew associated with ballast water management;
b. Actions for implementing ballast water management requirements and practices in accordance with this permit;
c. Detailed ballast system fouling maintenance and sediment removal practices;
d. The disposal method for non-suspended sediment and other residual solids associated with ballast tank operation that will not result in unlawful pollution of Minnesota’s air, surface water or ground water, or create nuisance conditions;
e. The designated position or officer on board the vessel in charge of ensuring the plan is properly implemented;
f. Detailed reporting requirements for ports the vessel may visit, specifically ports in Minnesota waters of Lake Superior; and
g. A translation of the Plan into English if the vessel’s working language is another language.

The Permittee shall maintain the current copy of the Ballast Water and Sediment
Management Plan on board the vessel when transiting Minnesota State waters of Lake Superior and shall make the Plan available to the MPCA upon request.

B. Permit Condition 18(b) – Ballast Water Log Book
The ballast water log book shall include, at a minimum:

a. each entry in the ballast water log book shall be signed and dated by the officer in charge of the ballast water operation recorded; and
b. each completed page in the ballast water log book shall be signed and dated by the owner or operator Master of the vessel.

C. Permit Condition 19 – Ballast Water Log Book
For U.S.-flagged vessels, the ballast water log book, or a duplicate, shall be retained on board the vessel for three years after the date on which the last entry in the book is made and shall be retained under the control of the vessel's owner for an additional three years.

For foreign-flagged vessels, the ballast water log book, or a duplicate, shall be retained on board the vessel for two years after the date on which the last entry in the book is made and shall be retained under the control of the vessel’s owner for an additional two years.

D. Permit Condition 21 - Reporting
The Permittee shall submit to the MPCA by January 21 of each calendar year the Discharge Monitoring Reports for the previous calendar year. Submittals shall be made either electronically (e-mail address), by fax (fax #), or by postal service. The submittal of Discharge Monitoring Reports is required by January 21 of the calendar year following the installation and operation of a ballast water treatment system, and all subsequent years.

FINAL DETERMINATION ON WHETHER TO ISSUE PERMIT

55. The MPCA's decision to issue the Permit is governed by its permit rule, Minn. R. 7001.0140, which provides:

Subpart 1. Agency action. Except as provided in subpart 2, the agency shall issue, reissue, revoke and reissue, or modify a permit if the agency determines that the proposed permittee or permittees will, with respect to the facility or activity to be permitted, comply or will undertake a schedule of compliance to achieve compliance with all applicable state and federal pollution control statutes and rules administered by the agency, and conditions of the Permit and that all applicable requirements of chapter 116D and the rules adopted under chapter 116D have been fulfilled.
56. The MPCA finds that the Permit meets the requirements of Minn. R. 7001.0140. Compliance with the requirements of the Permit, and implementation of BMPs and State Performance Standards contained therein, will achieve greater environmental protection from regulated entities than currently exists. The Permit is in compliance with all applicable pollution control statues and rules. The conditions of the Permit will not pose a danger to human health or the environment. There are no environmental review requirements pursuant to Minn. Stat. ch. 116D that are required prior to issuance of the general Permit.

57. These Findings, Conclusions of Law and Order, the MPCA Board Item and its various attachments constitute the report required by Minn. R. 7001.0125 and adequately fulfill the requirements of that rule.

CONCLUSIONS OF LAW

58. The MPCA has jurisdiction to issue this Permit.

59. Adequate and timely public notice of the proposed SDS Permit issuance was given in accordance with Minn. R. 7001.0100, subps. 4 and 5 and public comments on the draft permit were addressed in accordance with MPCA rule requirements.

60. The requirements of Minn. R. 7001.0140 for reissuance of this SDS Permit have been met and for the reasons stated in these Findings and Conclusions, the SDS General Permit No. MNG300000 should be issued.

61. Proper implementation of the pollution control measures in this SDS Permit will achieve compliance with all applicable pollution control statutes and rules and the conditions of the Permit.

62. Implementation of the requirements of this Permit will achieve greater environmental protection from regulated entities.

63. Any finding more properly considered a conclusion shall be considered a conclusion. Any conclusion more properly considered a finding shall be considered a finding.
ORDER

Based on the foregoing Findings of Fact and Conclusions of Law, it is ordered:

The Minnesota Pollution Control Agency authorizes issuance of the State Disposal System General Permit No. MNG300000 for Ballast Water Discharges from Vessels Transiting Minnesota State waters of Lake Superior.

IT IS SO ORDERED

[Signature]
Commissioner Brad Moore
Chair, Citizens’ Board
Minnesota Pollution Control Agency

Date 9/24/08