FINAL DETERMINATION AND NOTICE
REGARDING
BALLAST WATER TREATMENT FOR OCEANGOING VESSELS
ON THE GREAT LAKES

In accordance with the authority vested in me pursuant to Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, I determine the following:

1. Protection of the Great Lakes from new introductions of aquatic invasive species (AIS) is an economic and ecological imperative. Ballast water and sediment releases from ships coming into the Great Lakes will result in new introductions of AIS unless and until appropriate regulatory responses are implemented. Previous introductions of invasive species, such as zebra mussels via vessels' untreated ballast water, have cost the state of Michigan millions of dollars in damage to municipal, industrial and recreational infrastructure, loss of fisheries, and loss of recreational water uses. These costs are continuing to incur, because once invasive species are introduced to an ecosystem, their negative effects are permanent. In addition to the economic damages, the damage to Michigan's aquatic ecosystems by invasive species is profound and permanent. All across Michigan and the Great Lakes there are examples of aquatic ecosystems undergoing dramatic and deleterious changes, including changes to the critical lower food web as a result of invasive species. Currently required ballast water management practices, such as ballast water exchange, are an important component of effective actions, but are too variable to be fully protective of the Great Lakes by themselves. Alternatives to management practices such as ballast water treatment must be used as soon as possible to protect the Great Lakes from the likelihood of introducing new invasive species.

2. Michigan passed legislation in 2001 (PA 114) requiring ships on the Great Lakes to report on whether they are using ballast water management practices to reduce aquatic invasive species. The legislation also requires the Michigan Department of Environmental Quality (MDEQ) to make a determination whether there is ballast water treatment that could be used by oceangoing ships on the Great Lakes. Michigan's legislation addresses safety (for the vessel, crew and passengers) and effectiveness (prevention of introductions). There are, however, a number of other considerations, including the ability of the treatment to meet eventual national or international discharge standards, the importance of national applicability of treatment methods for both environmental and economic reasons, the practicality of shipboard installation and operation, and ease of regulatory enforcement. The best way to concurrently address all considerations is to aggressively pilot treatment methods on board oceangoing vessels and to work to improve such systems.

3. Ballast water treatment is a complex issue. Not all treatments are appropriate for all types, sizes, and ages of vessels or in all ballast conditions. National discharge standards are under development in the United States by the U.S. Coast Guard and in the ratification stage by member states of the International Maritime Organization through its

Convention for the Control and Management of Ships' Ballast Water and Sediments. The next step is for shipping companies to choose and install treatment methods that could be used on board oceangoing ships and rigorously test them in the interest of protecting the Great Lakes from future introductions of aquatic invasive species.

4. Based upon extensive survey work conducted by the MDEQ, it is apparent that a wide variety of treatments are undergoing testing worldwide, including physical and chemical technologies. A few, such as ultraviolet light and filtration, have undergone evaluation on board operating ships. Other treatments have been tested on ship platforms, in laboratories, or in ship-side or shore-side facilities and are ready for evaluation on operating ships. Some technologies such as de-oxygenation have the potential for lowering ship operating costs as a result of reduced corrosion in ballast tanks, once fully tested. Other systems use technologies well-proven in non-ship applications and are undergoing research on adaptation to ship use, such as biocides. An ultra violet light with filtration system has been approved for treatment on board a cruise ship under the state of Washington's ballast water regulation legislation. Much of the work on ballast water treatment has been accomplished with public funding in partnership with industry. The next steps are for industry to install treatments that could be used on board oceangoing ships and to rigorously test the systems under operating conditions.

5. The timing of this determination is based on results of a ballast water treatment study on sodium hypochlorite by the MDEQ in 2001-2004, the adoption (and early ratification by two countries) of a Convention for the Control and Management of Ships' Ballast Water and Sediments by the International Maritime Organization in 2004, implementation in 2004 of the state of Washington's ballast water treatment regulations, inception of the U.S. Coast Guard's Shipboard Technology Evaluation Program (S.T.E.P) in 2004, and results of a survey of principal investigators conducted by the Office of the Great Lakes on treatment technology progress worldwide in 2003. This determination is an opportunity to use the momentum from these events to push ahead with treatment installation and refinement. The MDEQ looks forward to working with the oceangoing shipping industry to take advantage of this momentum and put in place ballast water treatment to prevent new introductions of aquatic invasive species to the Great Lakes.

Determination

The determination under Public Act 451 of 1994; Sec. 3103a; 324.3103a (2)(d)(i) is that one or more ballast water treatment methods which protect the safety of the vessel, its crew, and its passengers could be used by oceangoing vessels to prevent introductions of aquatic invasive species into the Great Lakes. "Oceangoing vessel" means a vessel that operates on the Great Lakes or the St. Lawrence waterway after operating in waters outside of the Great Lakes or the St. Lawrence waterway. This determination does not approve a particular treatment. The decision on which treatment to install will have to be made by shipping companies for individual ships and based on the considerations in Section 2, above.

Under Sec. 3103a; 324.3103a (2)(d)(ii) of the same act, the MDEQ must also determine a date after which ballast water treatment could be used by all oceangoing vessels operating on the

Great Lakes. The date is determined to be January 1, 2007. In addition, under Public Act 451 of 1994; Section 324.3103a (3)(a), the MDEQ must compile and maintain a list of all oceangoing vessels that, after the date specified in Subsection (2)(d)(*ii*), have been using one of these ballast water treatment methods during the previous 12 months. Therefore, as of the opening of the St. Lawrence Seaway navigation season in 2008, all oceangoing vessels must report to the MDEQ on whether ballast water treatment is being used. The MDEQ will make available the necessary forms and will post the list of ships reporting on the MDEQ ballast water reporting Web site.

Issued this 13th day of April, 2005

By: _____
Steven E. Chester, Director
Michigan Department of Environmental Quality