Certified Mail

DRAFT COPY
SUBJECT TO REVISION
OHIO EPA

Re: Statewide
Grant of Section 401 Water Quality Certification (U.S. EPA Vessel General Permit for Discharges Incidental to the Normal Operation of Commercial Vessels and Large Recreational Vessels)

Issue Date:
Effective Date:

Ladies and Gentlemen:

The Director of Ohio Environmental Protection Agency hereby authorizes discharges under the above referenced NPDES permit under Section 401 of the Federal Water Pollution Control Act and is subject to the following modifications and/or conditions:

Section 401 Water Quality Certification
Pursuant to Section 401 of the Federal Water Pollution Control Act, Public Law 95-217, the Director of Ohio Environmental Protection Agency hereby certifies that the above-referenced project will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act.

Antidegradation Statement
I have determined that a lowering of water quality in waters where ocean-going ships' travel is necessary. In accordance with OAC 3745-1-05, this decision was reached only after examining a series of technical alternatives, reviewing social and economic issues related to the degradation, and considering all public and appropriate intergovernmental comments. The lowering of water quality is necessary to accommodate important social or economic development in the area in which the water body is located.

I. WATER QUALITY STANDARDS AND IMPACTS

a. Ohio Narrative Water Quality Standards and Nuisance Species
Ohio Water Quality Standards (WQS) contain narrative conditions to prohibit nuisance conditions in waters of the state. The specific standard states that "To every extent practical and possible as determined by the director, these waters shall be …. Free from materials entering the waters as a result of human activity producing color, odor or other conditions in such a degree as to create a nuisance;" [Ohio Administrative Code 3745-1-04(C)].

In this rule, the term materials is not defined or limited; Ohio considers that this condition applies to non-indigenous nuisance species. The federal NPDES permit may not adequately prevent the introduction of new non-indigenous species, depending on the conditions issued in the final NPDES permit.

b. Ohio Narrative Water Quality Standards for Toxicity

The narrative WQS also contain a provision prohibiting toxicity: "To every extent practical and possible as defined by the director, these waters shall be….Free from substances entering the waters as a result of human activity in concentrations that are toxic or harmful to human, animal or aquatic life and/or are rapidly lethal in the mixing zone;" [Ohio Administrative Code 3745-1-04(D)].

The federal NPDES permit requirement for salt water ballast exchange means that ballast water discharges to fresh water will contain large concentrations of dissolved solids; these solids have the potential to be toxic to fresh water aquatic life, and discharges must meet the narrative toxicity standard.

c. Biocide Limits and Experimental Ballast Water Treatment

The discharge limits for residual chlorine, peroxyacetic acid and hydrogen peroxide do not meet Ohio WQS for continuous discharges. The federal NPDES permit's total residual chlorine discharge standard is 100 ug/l for discharges from ballast water treatment systems. This limit meets Ohio WQS for short-term intermittent discharges, but does not meet WQS for continuous discharges.

Ohio has used its authority to establish site-specific WQS to establish a separate inside-mixing-zone maximum criterion for short-term exposures to chlorine. This criterion for is 200 ug/l; the otherwise applicable criterion is 38 ug/l. [OAC 3745-1-35 and -36]

Ohio EPA has developed water quality criteria applicable to bromine and combinations of bromine and chlorine. These criteria are based on data submitted by the Chemical Manufacturers Association to U.S. EPA Region V that shows bromine being approximately four times as toxic as chlorine. The water quality criteria for bromine are therefore set at ¼ of the chlorine standard.

Ohio EPA has also developed water quality criteria for peracetic acid using the criteria calculation rule OAC 3745-1-36. Similar procedures have been used by Michigan to develop water quality criteria for hydrogen peroxide and ozone (Michigan DEQ Rule 57).

Discharges of other biocides must meet the narrative water quality standard for toxicity noted above. [OAC 3745-1-04(D)].

II. SPECIFIC CONDITIONS

a. Ballast Water Controls

Given the number of invasive species already in the Great Lakes, the number of recent introductions, and the likelihood of increased ship traffic, the existing program of ballast water control is not effective in preventing the introduction of invasive non-native organisms, and therefore does not meet Ohio's narrative WQS. An integrated system of ballast water treatment and management controls would reduce the number of live organisms in ballast water, and is the most effective approach to meeting the nuisance WQS. [OAC 3745-1-04(C)]

The draft VGP proposes treatment limits and practices to reduce the number of organisms discharged into U.S. waters. Ohio EPA believes that these controls are "practical and possible" means of controlling potentially invasive species, and is incorporating those requirements into this certification. These controls include the International Maritime Organization (IMO) treatment standards and ballast water management techniques in the draft permit.

Discharges must meet the IMO treatment standards in the VGP or 33 CFR 151.1511, whichever is more restrictive, according to the schedule in the VGP or 33 CFR 151.1512, whichever compliance date comes first.

Treatment systems to reduce the number of live organisms discharged in ballast water exist and are continuing to be developed. These treatment systems are intended to kill and/or filter all organisms from ballast water so that they are not discharged. Several of the treatment systems being designed to meet the discharge standards of the International Maritime Organization (IMO) can remove a large percentage, if not all, organisms. Ohio EPA is certifying IMO standards because they are the most widely accepted and tested standards in the world. These treatment systems shall be operated to maximize the destruction and/or removal of organisms in the ballast water, with the object of discharging no viable organisms**.**

The VGP contains additional management controls on ballast water discharges that can reduce the risk of organisms discharged in ballast water. These controls are currently in-use by many ships, and are therefore reasonable conditions. As they are capable of reducing the risk of nuisance organisms discharged, these conditions are required to meet OAC 3745-1-04(C):

> Vessels that operate outside the U.S. Exclusive Economic Zone (EEZ) and more than 200 nautical miles from shore, and then enter the Great Lakes via the St. Lawrence Seaway System must conduct salt water flushing of ballast tanks. This

condition applies both before and after treatment system deadlines in the VGP; Vessels are prohibited from discharging ballast water sediment in Ohio waters.

Ohio EPA believes that the IMO certification combined with ballast water flushing and exchange is sufficient demonstration that these treatment standards are "practical and possible" methods for meeting ballast water treatment standards for ocean-going ships. U.S. EPA's fact sheet demonstrates that more restrictive treatment standards cannot be reliably attained or measured at this time.

Ohio EPA also believes that there are reasons to treat existing vessels that operate exclusively within the Great Lakes differently than those that operate outside the Lakes. The effluent flows of ballast water are larger than ocean-going vessels, are discharged more rapidly that the ballast water of ocean-going vessels, and space for treatment equipment is limited on existing lake vessels. These factors affect the practicability of treatment. Ohio EPA believes that IMO treatment standards are not "practical and possible" at this time for existing vessels operating exclusively within the Great Lakes, as defined in the VGP.

If the federal government adopts treatment standards more stringent than IMO, then those standards shall replace the above treatment standards for new treatment systems installed after the date those federal standards go into effect.

The Director will evaluate treatment standards equivalent to IMO or more restrictive standards for all vessel classes covered by the federal general permit (including both ocean-going vessels and vessels that operate only in the Great Lakes) when he issues the next certification on this permit. The decision to require IMO or more restrictive treatment standards will be based on treatment system availability and costs, and other considerations required by law.

b Salt Water Discharges

It is likely that discharges of ballasted sea water will not meet the toxicity narrative water quality standard if discharged in the relatively shallow water of Ohio's Lake Erie ports, due to the dissolved solids levels in sea water. Discharges in the open waters of the Lake minimize the risk of toxicity, and will allow the standard to be met. In order to prevent toxicity to ambient organisms or rapidly lethal conditions, discharges of ballasted sea water within the breakwalls of Ohio's Lake Erie Ports is prohibited.

c. Ballast Treatment Chemical-Specific Discharge Limits

For ballast water treatment systems using chlorine, discharges must meet a maximum chlorine limit of 38 micrograms per liter (ug/l) if the discharge lasts for more than 160 minutes/day; the limit is 200 ug/l if the discharge is 160 minutes/day or less. [OAC 3745-1-07 (inside-mixing-zone maximum water quality standards, definition and applicability),

OAC 3745-1-35, (site-specific WQS, exposure time-based criteria), OAC 3745-1-36 (aquatic life criteria calculation procedures, equivalency of IMZM with FAV criteria), OAC 3745-2-05(B)(3) (maximum limits for discharges to lakes)] These standards apply to all ballast water treatments – both experimental and those treatments installed to meet IMO standards.

For ballast water treatment systems using bromine, or combinations of bromine and chlorine, discharges must meet a maximum residual oxidants limit of 10 ug/l if the discharge lasts for more than 160 minutes/day; the limit is 50 ug/l if the discharge is 160 minutes/day or less. The limit for residual oxidants is based on data submitted by the Chemical Manufacturers Association to U.S. EPA Region V that shows bromine being approximately four times as toxic as chlorine. The discharge limit for residual oxidants is therefore set at ¼ of the chlorine limit.

Ohio EPA acknowledges that the discharge limits for periods greater than 160 minutes/day are less than the Ohio EPA practical quantification level for residual oxidant analysis (50 ug/l). Analyses less than or equal to 50 ug/l are judged to be in compliance with this certification.

Other oxidizing biocides used in ballast treatment also have FAV criteria less than the limits established in the draft permit: peroxyacetic acid, hydrogen peroxide and ozone. The discharge limits for these chemicals are set at 140 ug/l, 180 ug/l and 1.2 ug/l, respectively. The FAV criterion for peroxyacetic acid is set using OAC 3745-1-36 and OAC 3745-2-05(B)(3). The FAV criteria for hydrogen peroxide and ozone were obtained by the Michigan Department of Environmental Quality using Michigan's Rule 57 criteria procedures. These procedures are equivalent to OAC 3745-1-36. Ohio EPA used OAC 3745-2-05(B)(3) to apply this criterion to lake discharges.

d. Ballast Treatment – Other Biocides

Biocides other than the biocides listed in c. above used in ballast water treatment must meet Ohio's narrative toxicity water quality standard. To meet the 'no rapidly lethal conditions' narrative, discharges of all biocides must meet inside-mixing-zone water quality standards (Final Acute Values) as determined by the OAC Rule 3745-1-36 [Great Lakes Initiative rule procedures]. The discharge of organic quaternary ammonium compounds is prohibited.

Certification conditions may be revised in order to meet water quality standards after a change in water quality standards or criteria has been completed and approved. This certification may be modified, or alternatively, revoked and reissued, to comply with any applicable water quality effluent limitations.

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You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00 which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

Sincerely,

Scott J. Nally
Director

cc: Sean Ramach, U.S. EPA, Region 5
Mary Knapp, U.S. Fish & Wildlife Service
James Zehringer, Director, ODNR
Steve Holland, ODNR/Sandusky
Dave Snyder, Ohio Historical Preservation Office, 1982 Velma Avenue, Columbus, Ohio 43211
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