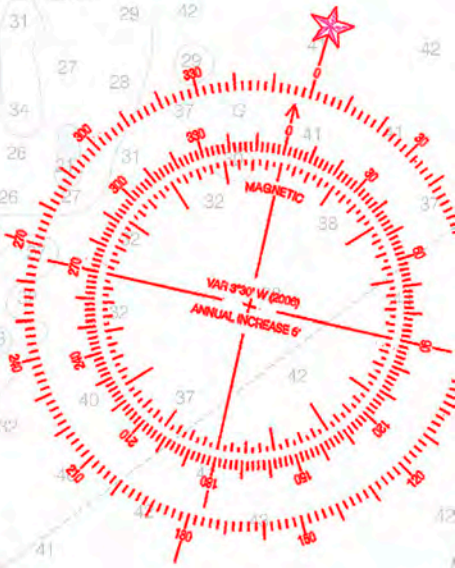
Indiana Clean Marina Guidebook

Environmentally-Friendly Practices to Control Nonpoint Source Pollution & Protect our Lakes and Rivers



NOAA
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

IDEM
Indiana Department of Environmental Management

DNR
Indiana Department of Natural Resources

Indiana Lake Michigan Coastal Program

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The Indiana Clean Marina Program was developed in an effort to provide marinas, boat yards, yacht clubs, and recreational boaters with environ-mentally-friendly practices to control nonpoint source pollution within Indiana's Lake Michigan coastal area while meeting the requirements
of Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990. This guidebook provides the framework on which the Indiana Clean Marina Program is based. It does not constitute a complete refer-ence to state, federal, or local laws.

The Lake Michigan Coastal Program and its partners do not promote or endorse any of the companies or products identified in this guidebook.

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Table of Contents

Introduction

What is Nonpoint Source Pollution? 13
Marinas, Recreational Boating and Nonpoint Source Pollution 14
What is the Indiana Clean Marina Program? 15
Advantages of Participating in the Indiana Clean Marina Program 15
How to Become a Designated Indiana Clean Marina 16
How to Determine if You Qualify for Clean Marina Status 17
What if You Do Not Meet All the Requirements? 17
How to Maintain Your Indiana Clean Marina Designation 18
Using the Indiana Clean Marina Guidebook 18

Marina Site Location & Design

Marina Flushing

Applicability 19
Background 19
Existing Federal and State Laws 20
Best Management Practices 20

Table of Contents

Water Quality Assessment

Applicability 23
Background 23
Existing Federal and State Laws 24
Best Management Practices 25

Habitat Assessment

Applicability 27
Background 27
Existing Federal and State Laws 27
Best Management Practices 28

Shoreline Stabilization

Applicability 31
Background 31
Existing Federal and State Laws 31
Best Management Practices 32

Storm Water Run-off

Applicability 33
Background 33
Existing Federal and State Laws 33
Best Management Practices 35

Fueling Stations

Applicability 39
Background 39
Existing Federal and State Laws 40
Best Management Practices 41

Sewage Facilities

Applicability 43
Background 43
Existing Federal and State Laws 43
Best Management Practices 45

Table of Contents

Marina & Boat Operation

Solid Waste (Trash & Marine Debris)

Applicability 49
Background 49
Existing Federal and State Laws 49
Best Management Practices 51

Fish Waste

Applicability 53
Background 53
Existing Federal and State Laws 53
Best Management Practices 54

Liquid Materials

Applicability 55
Background 55
Existing Federal and State Laws 55
Best Management Practices 55

Petroleum Control

Applicability 59
Background 59
Existing Federal and State Laws 59
Best Management Practices 59

Boat Cleaning

Applicability 61
Background 61
Existing Federal and State Laws 62
Best Management Practices 62

Table of Contents

Public Education

Applicability 65
Background 65
Best Management Practices 65

Boat Operation

Applicability 69
Background 69
Existing Federal and State Laws 69
Best Management Practices 69

Exotic & Nuisance Aquatic Species

Applicability 71
Background 71
Existing Federal and State Laws 75
Best Management Practices 75

Appendices

Appendix A

Indiana Clean Boater Pledge 79

Appendix B

Indiana Clean Marina Pledge 83

Appendix C

Indiana Clean Marina Program Designation Checklist 87

Appendix D

Complying with the Hazardous Waste Rules 105

Appendix E

Spill Prevention, Control & Countermeasure Plans 111

Table of Contents

Appendix F

Emergency Preparedness & Spill Response 115

Appendix G

Hazardous Waste Streams 125
- Classification of Potential Hazardous Wastes Generated & Preferred Disposal Options for Potential Waste Streams 125
- Used Oil Management 129
- Oil Filters (Used) 133
- Antifreeze 135
- Batteries (Lead Acid) 139
- Fluorescent Light Tubes & High Intensity Discharge Lamps 141
- Mercury Switches 143
- Fuel & Fuel Filters 145
- Scraping & Sanding 147
- Antifouling Paints 149
- Solvents 151
- Sorbents 157

Appendix H

Hazardous Waste Generator Status & How the Rules Apply to You 159

Appendix I

Selecting a Waste Transporter & Recycling/Waste Management Company 163

Appendix J

Sample Contract Language 171

Appendix K

Clean Boater Tip Sheets 175
- Fuel and Oil 177
- Sewage 179
- Boat Cleaning 181
- Bilges 183
- Solid Waste 185
- Boat Maintenance and Operation 187
- Aquatic Invasive Species 189

Table of Contents

Appendix L

Additional Contact Information 193

Appendix M

Emergency Planning and Community Right to Know Act of 1986 197

Appendix N

References 203

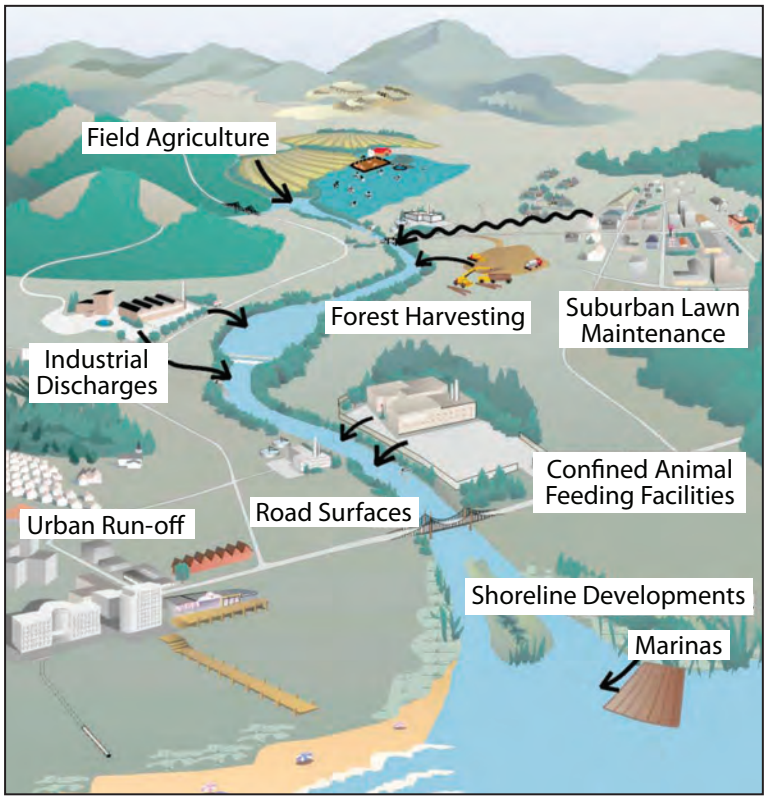
Introduction

The Indiana Clean Marina Program guidebook was developed in an effort to provide marinas, boat yards, yacht clubs, and recreational boaters with environmentally-friendly practices to control nonpoint source pollution and protect our lakes and rivers.

This guidebook provides the framework on which the Indiana Clean Marina Program is based. Within this guidebook, you will find a variety of best management practices that can be utilized by marinas during their day-to-day operations. You will also find clean boater tip sheets that you can print and hand out to recreational boaters to educate them on how they can do their part in protecting our aquatic resources.

What is Nonpoint Source Pollution?

Nonpoint source pollution results from rainwater or snowmelt flowing across the landscape (also known as run-off), picking up pollutants and delivering them to our surface waters and ground water (U.S. Environmental Protection Agency, 2001). The potential pollutants carried in run-off are largely determined by land use practices. For example, nutrients from fertilizers, detergents from car washing, and animal waste from pets are often associated with urbanized areas. The nonpoint source pollutants that have the greatest potential of harm to our waterways are sediment, nutrients, organic matter, pathogens, and toxic compounds (U.S. EPA, 2001). These are considered pollutants because they can harm the biological and physical integrity of our waterways.



Schematic of a Watershed (Source: U.S. EPA, 2001)

Introduction

Marinas, Recreational Boating & Nonpoint Source Pollution

Every boater—no matter what size or type of watercraft he or she operates—and every marina owner/operator can protect our waterways by implementing the best management practices in this guidebook.

All human land-use practices have the potential of generating some form of nonpoint source pollution. As we disturb the native landscape we create a higher risk of delivering pollutants via run-off to our waterways. When we remove natural vegetation and harden the landscape with pavement and buildings, we reduce the natural process of water permeation and filtration. As a result, a greater volume of rain or snowmelt runs off, picking up contaminants generated during our day-to-day activities.

The concentration of boats, marina operations, and the physical location and design of marinas can be a significant contributor of nonpoint source pollutants in the watershed. Because pollutants generated upstream in the watershed are often delivered via surface run-off to the waterway in which the marina is located, the water quality within a marina is a reflection of the marina itself and the watershed as a whole.

These pollutants are often generated at marinas and through recreational boating:

- **Petroleum hydrocarbons** from fuel, oil, and solvents.
- **Nutrients** and **pathogens** from overboard sewage discharge and pet waste.
- **Toxic metals** and **compounds** from hull antifoulants and boat maintenance.
- **Liquid** and **solid wastes** generated from engine and hull maintenance and general marina activities.
- **Sediments** from parking lot and construction site run-off and shoreline erosion.
- **Fish waste** from dockside fish cleaning.

Pollutants often concentrate in marinas since the marinas are often sited in areas that are protected from the wind, waves, and current. Marina basins are often poorly flushed and therefore more susceptible to damage by pollutants.

Introduction

What is the Indiana Clean Marina Program?

The goal of the Indiana Clean Marina Program is to protect and improve the water quality of Indiana's waterways by reducing the potential amount of pollutants generated in our marinas. The Indiana Clean Marina Program provides marinas, boatyards, and yacht clubs the opportunity to receive recognition for being stewards of the environment by participating in the program.

If a marina is in compliance with state and federal regulations and also incorporates a high percentage of the best management practices recommended in this guidebook, it can be designated as an Indiana Clean Marina. Marinas that have been designated as an Indiana Clean Marina are authorized to fly the Indiana Clean Marina flag and use the Indiana Clean Marina logo in their advertising. The flag and logo are signals to boaters that a marina is a steward of Indiana's aquatic resources. Marinas participating in the program will also be included on the Indiana Clean Marina Program website and be introduced as an Indiana Clean Marina in a news release upon their inauguration.

The Indiana Clean Marina Program is part of a nationwide effort known as the Clean Marina Initiative. The Clean Marina Initiative is a voluntary, incentive-based program promoted by the National Oceanic and Atmospheric Administration and others that encourages marina operators and recreational boaters to protect coastal water quality by engaging in environmentally-sound operating and maintenance procedures. Marina operators and recreational boaters can find out more about this nationwide effort on the Web at http://cleanmarinas.noaa.gov.

Advantages of Participating in the Indiana Clean Marina Program

The Indiana Clean Marina Program provides marina operators the opportunity to be stewards of the environment while being recognized for their achievements.

The National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management listed the following benefits a clean marina program can offer to you, the marina owner/operator, by participating in the program.

- **Reduce waste disposal costs**—The best management practices will reduce the amount of wastes you produce so your disposal costs will be less.
- **Generate new sources of revenue**—Studies have shown that owners of Clean Marinas can charge slightly higher slip fees and have fewer vacancies.

- **Receive free technical assistance**—You will have access to best management practices guidebooks, training workshops and on-site visits. Often, states will even offer on-site assistance for meeting legal requirements.
- **Reduce legal liabilities**—You can feel more confident that you are meeting all legal requirements.
- **Enjoy free publicity**—Your marina will be recognized as a Clean Marina through press releases, newsletters, and boating guides, etc.
- **Attract knowledgeable customers**—Clean Marinas are aesthetically pleasing facilities and you can attract responsible clientele that will follow good boating practices.
- **Improve water quality and habitat for living resources**—Your marina and the boating industry depend on clean waters and a healthy coastal environment for their continued success.
- **Demonstrate marina is a good steward of the environment**—Many states distribute special burgees and signs for Clean Marinas to display. Your Clean Marina will be allowed to use the state's Clean Marina logo on all letterhead.

How to Become a Designated Indiana Clean Marina

Any marina wishing to become a designated Indiana Clean Marina must:

- Meet all federal and state laws that pertain to their facility. Please refer to Appendix C, "Indiana Clean Marina Program Designation Checklist," on pages 87-101. It identifies best management practices required by regulation or law with a numeric value of "0." If you have any questions about legal requirements, please contact the agencies which administer the regulations that apply to your facility.
- Achieve a cumulative score of at least 80 percent for all remaining best management practices listed in Appendix C that apply to your facility.

Introduction

How to Determine if You Qualify For Clean Marina Status

STEP 1:
Complete the "Indiana Clean Marina Program Designation Checklist" (see pages 87-101) according to the instructions provided. There are 63 questions to answer. Double check whether you meet all the required practices identified with the numeric value of "0" that apply to your facility. If you don't currently or you're just not sure, contact the Indiana Department of Environmental Management's Clean Marinas Program Coordinator at (219) 464-0419 for assistance. Use the "Comments" section on pages 12-13 of the checklist to explain any answers or request clarification for any particular best management practice. Be sure to reference the question number.

STEP 2:
Complete the "Point Summary" and calculate your total using the "Equation for Calculating your Cumulative Score" on the last page of the checklist—you need 80 percent to qualify. If you meet all the required practices identified with the numeric value of "0" and your cumulative score is 80 percent or higher, your marina qualifies for Clean Marina status. Congratulations!

STEP 3:
Contact the Indiana Department of Environmental Management's Clean Marinas Program Coordinator at (219) 464-0419 to schedule a confirmation site visit that will enable staff to meet with you and verify your qualifications.

What if You do Not Meet All the Requirements?

If you do not currently meet all the requirements of the program you can still become involved by signing an "Indiana Clean Marina Pledge" (see Appendix B). This pledge shows that you are committed to becoming a designated Indiana Clean Marina within a one-year time period. Boaters using your marina can help you reach your goal of becoming a Clean Marina by doing their part and signing an "Indiana Clean Boater Pledge" (see

For More Information

Appendix A – (page 79)
Indiana Clean Boater Pledge

Appendix B – (page 83)
Indiana Clean Marina Pledge

Appendix C – (page 87)
Indiana Clean Marina Program Designation Checklist

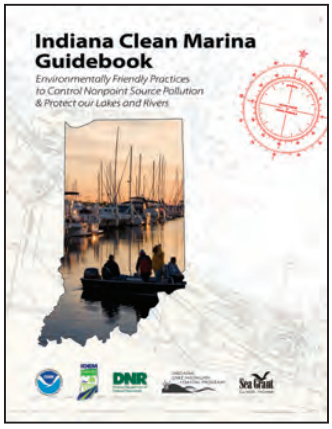
Appendix A). The Indiana Department of Environmental Management Clean Marinas Program staff will be happy to answer any questions you may have and help you reach Clean Marina status! The telephone number is (219) 464-0419. In addition, the Indiana Department of Environmental Management's Office of Pollution Prevention and Technical Assistance offers confidential environmental assistance through its Compliance and Technical Assistance Program. For information, call CTAP at (800) 988-7901 (toll free in Indiana) or (317) 232-8172.

How to Maintain your Indiana Clean Marina Designation

Once your marina has become designated as an Indiana Clean Marina, you must maintain your designation by submitting a letter annually to the Indiana Department of Environmental Management Clean Marinas Coordinator that states you still meet the requirements included on the checklist. If you have added new best management practices since your designation, please inform the coordina-tor. On the "Indiana Clean Marina Program Designation Checklist" is a "New Best Management Practice?" column. Simply place a check in this column for the appropriate best management practices. Then mail a copy of the updated checklist with your annual letter. The Indiana Department of Environmental Management Clean Marinas Program staff wants to recognize any extra effort your marina takes as a participant in the program. Additionally, every three years you will be required to schedule a re-designation site visit.

A marina operator which believes itself aggrieved by the denial of its designation or the denial of the renewal of a designation as an Indiana Clean Marina may seek administrative review to the Natural Resources Commission under Title 4, Article 21.5 of the Indiana Code (IC 4-21.5) and Title 312, Article 3, Chapter 1 of the Indiana Administrative Code (312 IAC 3-1).

Using the Indiana Clean Marina Guidebook



This guidebook serves as a reference manual for marinas striving to become Clean Marinas or to maintain their designation. It's divided into sections based upon guidance provided by the U.S. Environmental Protection Agency and the National Oceanic and Atmospheric Administration in conformance with Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990. Additionally, a section on exotic or nuisance species has been included in this guidebook. Refer to these sections as needed for recommended best management practices and some of the basic federal and state legal requirements as they pertain to marinas. (Participation in the Indiana Clean Marina Program does not exempt marinas from meeting any applicable legal requirements. The legal requirements described in this guidebook are only to help outline some of the major environmental laws that pertain to marinas and are not compre-hensive.) Marinas are also encouraged to review other sources of information that are readily available for controlling nonpoint source pollution in their marina.

Marina Flushing

Applicability

The Marina Flushing section primarily applies to new or expanding marinas. Marina flushing is typically addressed through the permitting process in Indiana.

Background

The water quality and biological health of marinas partially depend on how well water circulates and is flushed within the marina. Marina siting and design affect water circulation and flushing characteristics within its basin. In tidal waters, marina flushing is primarily driven by rising and falling tides. In non-tidal waters, such as the Great Lakes, wind drives water circulation. Circulation and flushing can be influenced by the basin's configuration and orientation to prevailing winds. Flushing may also be impacted by the water level of the lake. In rivers, water moves through the marina continuously if sited and designed properly. A marina located on a lake with many basins or a marina situated inland on a river can lead to decreased water circulation and flushing. This decrease in water circulation can lead to pollutants and debris concentrating in poorly flushed corners or in secluded areas protected from wind. The water may become stagnant with offensive odors. Biological activity may decrease and the area may become devoid of aquatic life. Inadequate flushing may also lead to the buildup of sediment within the marina, leading to increased cost for dredging.

The final design of a marina should represent a compromise of marina capacity, services, and access, while minimizing environmental impacts, dredging requirements, protective structures, and other site development costs. Marina siting and design should be done to ensure that marinas and their associated structures do not cause direct or indirect adverse water quality impacts or endanger wildlife and habitat both during and following marina construction.

Many factors influence the long-term impact a marina will have on water quality within the immediate vicinity of the marina and the adjacent waterway. Initial marina site selection is the most important factor. Selection of a site that has favorable hydro-geographic characteristics and requires the least amount of modification can reduce potential impacts.

Marina Flushing

Existing Federal and State Laws

As part of the permitting process, the Indiana Department of Environmental Management reviews potential water quality impacts for newly proposed or expanding marinas through the 401 Water Quality Certification Program. The Indiana Department of Natural Resources also reviews the potential impacts of newly proposed or expanding marinas through the Navigable Waterways Act (IC 14-29-1), the Sand and Gravel Permits Act (IC 14-29-3), and the Construction of Channels Act (IC 14-29-4). The U.S. Army Corps of Engineers utilize Section 10 of the River and Harbor Act of 1899 and Section 404 (permit application process) of the Clean Water Act to determine the impacts of proposed marinas.

Best Management Practices

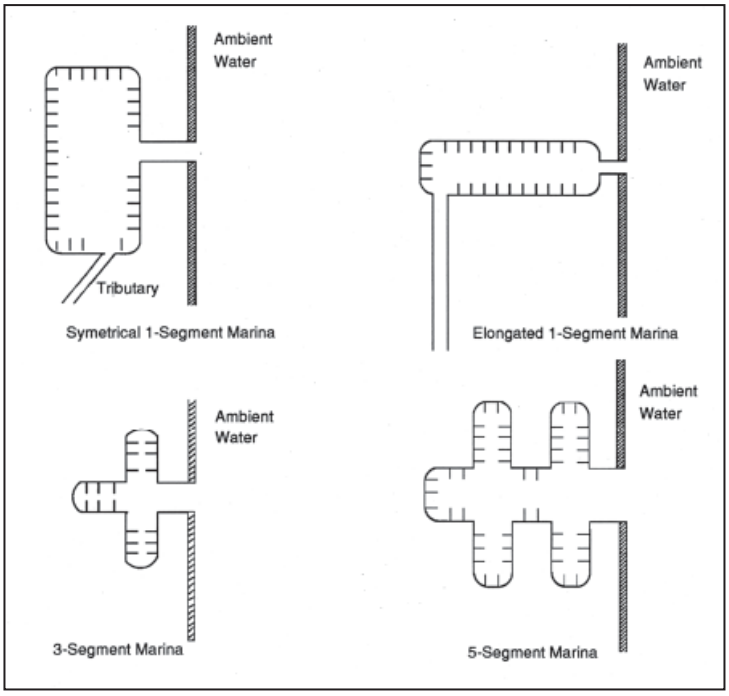
The U.S. Environmental Protection Agency has provided several best management practices that can be applied successfully to promote marina flushing. The following best management practices are described for illustrative purposes and to provide guidance for marinas that are in the planning stage or for those marinas that will be expanding.

- Site and design new marinas so that the bottom of the marina and the entrance channel are not deeper than adjacent navigable water, unless it can be demonstrated that the bottom will support a natural population of benthic organisms, those organisms that live in, on, or near the bottom of aquatic environments. Flushing rates in marinas can be maximized by proper design of the entrance channel and basins. For example, marina basin and channel depths should be designed to increase gradually toward open water to promote flushing. Otherwise, isolated deep holes may be created where water can stagnate and sediment can build up.

- Design new marinas with as few segments as possible to promote circulation within the basin. Flushing efficiency for a marina is inversely proportional to the number of segments. For example, a one-segment marina will not flush as well as a marina in open

water; a two-segment marina will not flush as well as a one-segment marina, and so forth (see figure below). Curved corners instead of a boxed design can lessen the risk of stagnant corner water or excess sediment buildup. Marina configurations that promote flushing exhibit, in general, higher levels of dissolved oxygen than those with restrictions, improper entrance channel design, bends, and square corners.

- Consider other design alternatives in poorly flushed water bodies (e.g., open marina basin over semi-enclosed design; wave attenuators over a fixed structure) to enhance flushing.
- Design and locate entrance channels to promote flushing. Entrance channel alignment should follow the natural channel alignment as closely as possible to increase flushing. Marina flushing rates are enhanced by wind action when entrance channels are aligned parallel to the direction of prevailing winds because wind-generated currents can mix basin water and facilitate circulation between the basin and the adjacent waterway.
- Establish two openings, where appropriate, at opposite ends of the marina to promote flow-through currents.
- Utilize mechanical aerators to improve water circulation and water quality where the marina basin and entrance channel cannot be configured in a manner to promote adequate flushing. Designate areas that are and are not suitable for marina development (i.e., provide advance identification of water bodies that do and do not experience flushing adequate for marina development).



Example marina designs (Source: U.S. EPA, 2001)

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Water Quality Assessment

Applicability

The Water Quality Assessment section primarily applies to new or expanding marinas and coincides with the Marina Flushing section. Water quality assessment is typically addressed through the permitting process in Indiana. However, this section does provide marina designers and developers some guidance on marina siting and design impacts on water quality.

Background

As stated in the Marina Flushing section, water circulation and marina flushing play important roles in the distribution and concentration of potential pollutants in a marina basin. Improperly designed marinas and day-to-day marina operations can potentially lead to poor water quality. Poor water quality in turn can have a negative impact on fish and wildlife within the marina basin or channel. However, remember that poor water quality in a marina may not solely be a result of operations in the marina itself. Marinas can be impacted by other land use activities within the watershed. The watershed is the area of land where all of the water that is under it or drains off of it goes into the same place. Impacts such as storm water run-off from other areas, fertilizer use upstream or pollutants brought from marina flushing activities may all lead to decreased water quality.

A marina employee uses a Secchi disk to measure how deep she can see into the water.

Water quality monitoring and assessment can be used to determine ambient water quality, the extent and causes of a water quality problem, or to measure the effectiveness of best management practices being implemented in a marina. The concentration of dissolved oxygen in water is a good indicator of the health of the marina. This number indicates whether there is enough oxygen for fish and other aquatic life. A low dissolved oxygen concentration number may suggest that there is too much decaying matter, or possibly that oil or other substances on the water's surface is preventing an exchange of gases. The transparency of the water can also be a good indicator of water quality in the marina. Erosion, run-off, algal blooms, and resuspended bottom sediment can reduce transparency. Transparency can be measured with simple, inexpensive equipment such as a transparency tube (see photo on the next page) or Secchi disk.

Water Quality Assessment

Pathogenic organisms can present a public health concern. Pathogens such as E. coli and enterococci are contained in human and animal fecal waste. Testing should be done to see if the water is safe to be used recreationally for swimming or skiing and to determine the condition of a proposed marina development site.

A transparency tube is used to assess water quality.

Existing Federal and State Laws

As part of the permitting process, the Indiana Department of Environmental Management reviews potential water quality impacts for newly proposed or expanding marinas through the 401 Water Quality Certification Program. The Indiana Department of Natural Resources (IDNR) also reviews the potential impacts of newly proposed or expanding marinas through the Navigable Waterways Act (IC 14-29-1), the Lake Preservation Act (IC 14-26-2), the Sand and Gravel Permits Act (IC 14-29-3), and the Construction of Channels Act (IC 14-29-4). The U.S. Army Corps of Engineers (USACE) utilizes Section 10 of the River and Harbor Act of 1899 and Section 404 (permit application process) of the Clean Water Act to make a water quality assessment. However, existing marinas may also wish to participate in some form of volunteer water quality monitoring.

Visual inspections are an easy way for marina operators to perform water quality monitoring. The clarity of the water, volume of aquatic plants, abundance of aquatic wildlife and fish, presence of sheens on the water or debris accumulation can be used to judge the health of the water. These types of inspections can be easily done by educating marina staff on what to look for. Staff can do visual inspections during the course of their daily activities at little or no cost to the marina.

Hoosier Riverwatch

Marinas can utilize their clients and local community groups or universities to assist in water quality assessment. College students may be interested in participating in projects involving marinas. The data they gather can be shared. Volunteers may help gather and analyze water samples, record ecosystem activities, catalog and collect beach debris and restore degraded habitat.

Hoosier Riverwatch is a state-sponsored water quality monitoring initiative. The purpose is to increase public awareness of

water quality issues and concerns by training volunteers to monitor stream water quality. More information can be found on the Web at www.IN.gov/dnr/nrec/3046.htm.

The U.S. Environmental Protection Agency's Office of Wetlands, Oceans, and Watersheds offers training and assistance in starting up monitoring programs. A volunteer program description can be found on the Web at www.epa.gov/owow/monitoring/volunteer.

Best Management Practices

U.S. EPA has provided several best management practices that can be applied successfully to monitor water quality. The following best management practices are described for illustrative purposes and to provide guidance for marinas that are in the planning stage or for those marinas that are looking to expand.

- Use a water quality monitoring methodology to measure water quality conditions. The first step in a marina water quality assessment should be the evaluation and the characterization of existing water quality conditions. Baseline data for the water body on which the marina is proposed might be available from IDNR, IDEM, or a federal agency such as the U.S. Geological Survey, U.S. EPA or USACE. The second step is to set design standards in terms of water quality. In most states, the water quality is graded based on dissolved oxygen content, and a standard exists for the 24-hour average concentration and an instantaneous minimum concentration. A state's water quality standard for dissolved oxygen during the critical season may be used to set limits of acceptability for good water quality.

- Use a water quality modeling methodology to predict post-construction water quality conditions. Numerical models can be a more economical alternative to collecting water quality data in the field. However, all models require some field data for proper calibration. (Check to see if baseline data already exists.) Numerical models can also be used to evaluate different alternative designs to maximize flushing of pollutants.

- Perform preconstruction inspection and assessment. A preconstruction inspection and assessment may be affordable in place of detailed water quality monitoring or modeling for marinas with 10 to 49 slips. An expert knowledgeable in water quality and hydrodynamics may assess potential impacts using available information and site inspection.

- Water quality sampling, monitoring, and modeling are not necessary in many cases to gather information about the health of a marina's waters. Visual inspections of aquatic plant abundance and appearance in and around the marina, use of the marina and surroundings by ducks and geese, the appearance of bottom sediments, the general clarity of the water near docks, and the abundance of fish can provide the information necessary to judge the health of the water. These types of inspections can be done during the course of daily operations by any member of the marina staff at minimal cost to the marina (see

Water Quality Assessment

volunteer monitoring best management practice below). Done every year, these visual inspections can show what the "normal" conditions are within and adjacent to the marina. When changes are noted, limited water quality sampling can be done to determine what might account for them if a local or state environmental management authority hasn't already done this.

- Establish a volunteer monitoring program at the marina. Marinas can help involve their clientele and local community in water quality issues and environmental protection by beginning a volunteer monitoring program. Volunteer monitors build awareness of pollution problems, become trained in pollution prevention, help clean up problem sites, and increase the amount of water quality information available.

Habitat Assessment

Applicability

This section primarily applies to new or expanding marinas where site changes may affect important near-shore or riverine habitats. Habitat assessment is typically addressed through the permitting process in Indiana. However, this section does provide marina designers and developers some guidance on marina siting and design impacts on aquatic habitats.

Background

The Blanding's turtle is an endangered species in Indiana (Source: IDNR).

Construction of new marinas or expanding marinas can have an adverse impact on aquatic habitats. For example, Lake Michigan and its tributaries support a wide variety of fish and wildlife that depend on near-shore or riverine habitats to successfully maintain their populations. Many of the sportfish that are so dearly prized on Lake Michigan (yellow perch, smallmouth bass, trout and salmon to name a few) use shoreline habitat for spawning, nurseries, feeding and cover throughout the year. Endangered species such as the Blanding's turtle, swamp rabbit, trumpeter swan, piping plover, hellbender and mudpuppy have historically been known to inhabit Lake Michigan and the nearby waterways.

When marinas are designed with consideration of habitat in mind, they can be an asset instead of a detriment to the ecosystem. They can allow for quiet, sheltered waters. A marina can assist in replacing natural habitat that allows for feeding and spawning. Pollution prevention measures taken by the marina will help maintain or even improve water and habitat quality leading to a more aesthetically pleasing marina.

Existing Federal and State Laws

As part of the permitting process, the Indiana Department of Environmental Management reviews potential water quality impacts for newly proposed or expanding marinas through the 401 Water Quality Certification Program. The Indiana Department of Natural Resources also reviews the potential impacts of newly proposed or expanding marinas through the Navigable Waterways Act (IC 14-29-1), the Lake Preservation Act (IC 14-26-2), the Sand and Gravel Permits

Habitat Assessment

Act (IC 14-29-3), and the Construction of Channels Act (IC 14-29-4). The U.S. Army Corps of Engineers utilize Section 10 of the River and Harbor Act of 1899 and Section 404 (permit application process) of the Clean Water Act to determine the impacts of proposed marinas. The U.S. Fish and Wildlife Service reviews proposed marinas for potential impacts to fish and wildlife habitat and endangered species present at or near the proposed project site under the Endangered Species Act and the Fish and Wildlife Conservation Act.

Best Management Practices

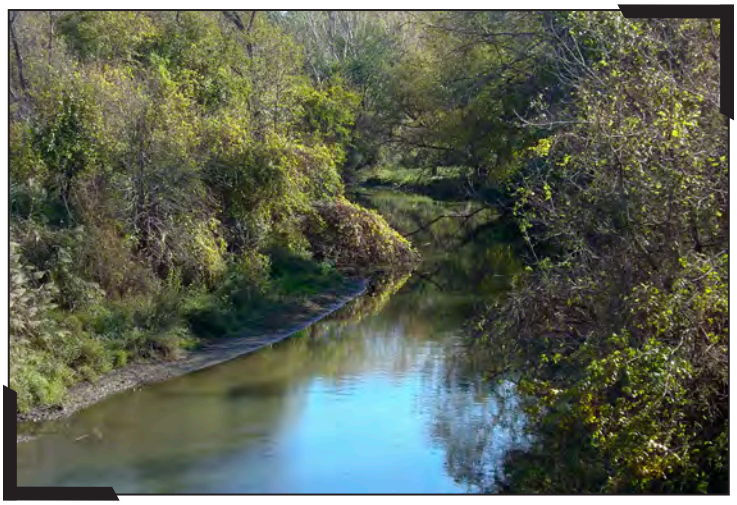
U.S. EPA has provided several best management practices that can be applied successfully to protect valuable near-shore and riverine habitats during marina siting and design. The following best management practices are described for illustrative purposes and to provide guidance to developers that are in the planning stage or for those marinas that will be expanding.

The Hammond Marina located on Indiana's Lake Michigan shoreline was built in 1991 on a former Brownfield site. The shoreline consisted of steel slag. The 54-acre complex was carved out of the steel mill slag and the shoreline was created from dredged sand, which created a mile-long sandy beach (Source: Hammond Marina).

- Conduct habitat surveys to characterize the potential marina project site. Critical or unique habitats need to be identified. Disruption of behavior such as spawning and feeding need to be considered. The risk of infiltration of exotic species from boating activities or removal of vegetation is important to consider. Once the data is assembled, it becomes possible to identify environmental risks associated with development of the site. Through site-design modifications, preservation of critical or unique habitat, and biological/chemical/physical monitoring, it is possible to minimize the direct and indirect impacts associated with a specific waterfront development.
- Redevelop coastal waterfront sites that have been previously disturbed, such as brownfields (sites that have been used by industry), expand existing marinas, or consider alternative sites to minimize potential environmental impacts.

Habitat Assessment

- Assess historic habitat function (e.g., spawning area, nursery area, migration pathway) considering seasonal use by fish or other animals and use this information when designing the marina to minimize indirect impacts.



This riparian corridor is along Trail Creek in LaPorte County (Photo by Alan Walus, Sanitary District of Michigan City).

- Minimize disturbance to indigenous vegetation in riparian areas. Riparian areas are narrow areas along the banks of rivers, streams, lakes, ponds, reservoirs, and wetlands. They may have vegetation, or may just be sandy or rocky. These riparian areas help filter pollutants from the water and offer a high biodiversity and biomass due to the nutrients that absorb from the run-off water that passes through them.
- Create new habitats or expand habitats in the marina basin. The addition of rock or the planting of native plant species on the shoreline can create new areas for feeding and spawning.

Dry stack storage promotes pollution prevention.

- Consider building in dry stack storage that enables boaters to store their boats on land. This practice promotes pollution prevention by decreasing the possibility of anti-fouling paint flaking or leaching into the water and the chance of oil/gasoline leaking into the water. Dry stack storage also allows for more public access to waterways, increases rental units and results in less weathering and maintenance for boats.

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Shoreline Stabilization

Applicability

This section primarily applies to new or expanding marinas where site changes may result in shoreline erosion. However, this section may also apply to existing marinas where shoreline erosion may be occurring.

Background

Vegetation, beaches, and preservation of natural shorelines, where feasible, can be the most effective means of shoreline stabilization.

Shoreline and streambank erosion is a natural process. However, erosion can be accelerated by a variety of land use disturbances. Induced erosion often occurs where the shoreline has been disturbed by removing natural vegetation or where the current has been altered. When this happens, erosion can be a major contributor of nonpoint source pollution. Excess sediment delivery to a waterway can result in decreased water clarity, nuisance algal blooms and plant growth, and smothering of fish habitat. Excess sediment loads also can lead to increased maintenance dredging to allow boats enough draught to access the waterway.

By design, marinas are often fairly calm, nonerosive environments. However erosion still may occur due to poorly designed structures or from boat activity (wakes and prop wash) within the marina basin. In severe cases, shoreline erosion can result in sediment deposition within the marina, requiring maintenance dredging. Stabilizing eroding shorelines can protect marina shorelines and reduce the need or frequency of maintenance dredging (U.S. EPA, 2001).

Existing Federal and State Laws

Shoreline stabilization is often addressed in the permitting process for newly proposed or expanding marinas. Permits may also be required by existing marinas that are looking to address erosion occurring within the marina basin. Installation of erosion control measures typically requires a permit from the U.S. Army Corps of Engineers pursuant to the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, a Section 401 Water Quality Certification from the Indiana Department of Environmental Management, and a permit under the Navigable Waterways Act from the Indiana Department of Natural Resources. Additionally, the upland disposal of dredged material requires sampling and analysis to determine whether the sediment is a solid waste requiring off-site disposal in a landfill.

Shoreline Stabilization

Best Management Practices

U.S. EPA has provided several best management practices that can be applied successfully to protect shorelines and streambanks from erosion. The following best management practices are described for illustrative purposes and to provide guidance for marinas that are in the planning stage, for marinas that will be expanding, or for marinas wanting to correct current erosion problems.

A bulkhead holds the shoreline together at Millenium Park, Michigan City.

- Use vegetative plantings, wetlands, beaches, and natural shorelines where space allows. Vegetative planting is a relatively low cost option. It can add a natural look to the marina and may assist in keeping invasive species at bay. The preservation or restoration of natural wetlands can help protect shorelines and dissipate wave energy. Both the planting of vegetation and preservation of wetlands provide habitat and may assist in filtering pollutants to improve water quality.
- Where shorelines need structural stabilization and where space and use allows, a riprap revetment is preferable to a solid vertical bulkhead. Riprap is an economical way to help stabilize embankments. Riprap can help decrease the energy of waves because of its irregular design.
- Vertical bulkheads made from concrete, treated timbers, steel, aluminum, or vinyl can be used to stabilize an embankment. These should only be used in areas where reflected waves will not endanger shorelines or habitats and where space is limited. Vertical bulkheads are more expensive and are not a good option for areas where waves or surges occur in the marina basin.
- At boat ramps, retain natural shoreline features to the extent feasible and protect disturbed areas from erosion. The construction and run-off water from the ramp can cause erosion and can increase maintenance costs. By leaving the natural shoreline, invasive species are less likely to take over and the marina has a more aesthetically pleasing look.

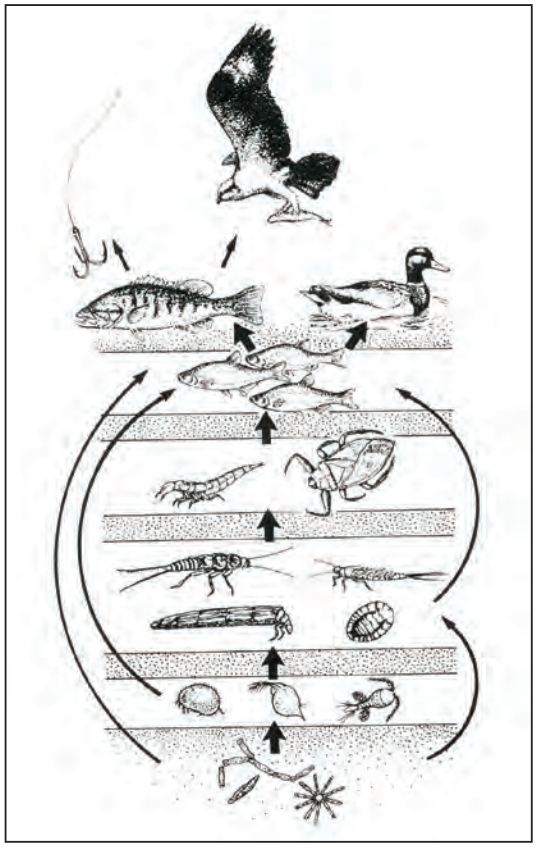
Storm Water Run-off

Applicability

This section applies to new, expanding, or existing marinas.

Background

Storm water run-off from paved parking areas, maintenance buildings, hull maintenance areas, and other impermeable surfaces or structures can be a significant contributor of nonpoint source pollutants. Some of the common pollutants potentially found in marina storm water run-off include oils, grease, fuel, solvents, sandings and paint chips, copper and other heavy metals. If untreated, these pollutants can concentrate in the marina basin, leading to poor water quality. Metals and oils can settle along the bottom where they can be consumed by a number of organisms. Eventually, these contaminants can be passed up the food chain in concentrated levels in a process known as bioaccumulation. Excessive use of fertilizers can cause nutrients to leach into the water. This can result in excessive aquatic plant growth and a decline in water quality. Pet waste leaching into the water can also supply an excess of nutrients and also allow pathogens to get into the water. Additionally, some of these pollutants can create visually unappealing surface films that can adhere to boat hulls or result in noxious smells.



Aquatic food web (Source: Cornell University Cooperative Extension)

Existing Federal and State Laws

Storm water is regulated under a number of programs within Indiana at the federal, state, and local level. The National Pollutant Discharge Elimination System (NPDES) program has been established to control pollutant discharges to the nation's waters. In Indiana, this program is administered by the Indiana Department of Environmental Management. In 2003, IDEM revised its general NPDES rules to bring its programs into compliance with Phase II of the U.S. Environmental Protection Agency's regulations. Phase II of the industrial storm water program requires a general NPDES permit for the point source discharge of storm water exposed to industrial activity (327 IAC 15-6 or Rule 6). Under Rule 6, there are 32 regulated Standard Industrial Classification (SIC) Codes, which include SIC Codes 4493 (marinas) and 3732 (boatyards and boat builders that repair, clean, and/or fuel boats).

Storm Water Run-off

Vegetated areas can function as a buffer, filtering out pollutants between impervious surfaces and the marina basin.

Facilities that are "primarily engaged" in operating marinas are classified as SIC Code 4493 (marinas). These facilities rent boat slips, store boats, and generally perform a range of other marine services including boat cleaning and incidental boat repair. For those facilities that are classified as SIC Code 4493 that are involved in vehicle (boat) maintenance activities (including vehicle rehabilitations, mechanical repairs, painting, fueling, and lubrication) or equipment cleaning operations, those portions of the facility are considered to be associated with industrial activity and are covered under the NPDES storm water regulations. Facilities classified as SIC Code 4493 that are not themselves involved in equipment cleaning or vehicle maintenance activities but allow patrons to work on their boat either in-water or out of the water would also be covered under the storm water permit regulations. Marine facilities that are "primarily engaged" in the retail sale of fuel and lubricating oils are best classified as SIC Code 5541 (marine service stations). These facilities are not covered by the NPDES storm water regulations.

If you, as a marina owner/operator, have a question relating to your status under the storm water regulations found in 327 IAC 15-6, you should contact IDEM at (800) 451-6027 or speak with a representative from IDEM's confidential Compliance and Technical Assistance Program at (800) 988-7901.

Under Phase II, storm water discharges associated with construction and/or land-disturbing activities that disturb one acre or more of land will require an NPDES permit (327 IAC 15-5). Additionally, IDEM established rule 327 IAC 15-13, which regulates municipal separate storm sewer systems (MS4s). MS4s are defined as a conveyance or system of conveyances owned by a state, city, town, or other public entity that discharges to waters of the United States and is designed or used for collecting or conveying storm water. A regulated conveyance system includes roads with drains, municipal streets, catch basins, curbs, gutters, storm drains, piping, channels, ditches, tunnels and conduits. Marinas owned by an MS4 community could be subject to both requirements of the industrial storm water permit and MS4 permit. The marina should develop the storm water pollution prevention plan for all of the marina's activities while referencing the presence of such a document under the community's MS4 storm water quality management plan. Questions pertaining to these rules should be addressed to the MS4-Rule 13 coordinator in the Wetlands and Storm Water Section within IDEM's Office of Water Quality at (800) 451-6027, Ext. 4-1601.

Storm Water Run-off

Best Management Practices

Following is a list of recommended best management practices provided by U.S. EPA (2001) that can be used by marinas to reduce pollutants associated with storm water run-off.

- Perform boat repair and maintenance inside work buildings as much as possible. This will protect the work area from wind and rain. It allows for easier cleanup and localized contamination.
- If work buildings cannot be utilized, perform sand blasting and sanding within enclosed spray booths or tarps. This will help eliminate the spread of residue from the sandblasting activities. Work should only be allowed on clear, nonwindy days. The dust and residue should be cleaned away daily.
- Provide clearly designated hull and boat maintenance areas. These areas should be located well away from the water's edge. The area should be well marked and posted with a list of rules. Work should not be allowed outside of the work area. Tarping the area under the boat should be a recommended practice. The work area should be protected from wind and enclosed if possible.
- Design hull maintenance areas to minimize contaminated run-off. Hull maintenance should be done over impervious surfaces such as a concrete pad. If a pad is not feasible, temporary ground cover such as tarps can be effective. The areas should cleaned at least daily and should only be swept or vacuumed. The blowing of dust and debris should be prohibited.

Dustless vacuum sanders are one of the best ways to control paint dust before it can become a pollutant (Source: Jay Tanski, New York Sea Grant).

- Use or provide sanders equipped with vacuums to remove paint from hulls. By vacuuming the paint dust and debris as work is performed, the chance of contamination is lessened. There is less cleanup work and fewer respirable particles for the person performing the work. To insure the vacuum sanders are used, yard rules should be posted and a vacuum sander should be available for rent. Marina staff should be trained in the operation of the sander.

Storm Water Run-off

- Establish a list of "yard rules" which boaters and contractors must follow when performing debris-producing boat maintenance. Allowing do-it-yourself boat repair work could result in an increase in marina liability costs. Marinas are increasingly requiring that only trained technicians with an understanding of state-approved environmental management practices be used.

- Clean hull maintenance areas regularly and dispose of collected material properly. Areas should be cleaned after work is performed or at a minimum of once daily. All trash, visible paint chips and other debris should be collected before they can be washed or blown away. Any collected waste should be stored under cover and in a secure container to reduce the possibility of it coming into contact with storm water. The area should be swept or vacuumed. Dust and debris should never be blown or rinsed off the pad as this could lead to the same contamination that you are trying to prevent.

- Capture and filter pollutants out of run-off waters with permeable tarps, screens or filter cloths. Tarps should be readily available and placed under cradles or stands before the boat is dry docked. If exposure to wind and/or rain is not an issue, regular plastic tarps can be used. These can be easily swept and cleaned off. If the work area could be exposed to adverse weather, fabric tarps are a better option. These tarps will hold onto the debris better. The area should be swept daily. The dust and debris should never be blown off the tarp. When disposing of the sweepings and tarpaulins, you must first determine if your waste is hazardous. Hazardous waste cannot be placed in the marina's regular trash. Information on how to determine if the waste is hazardous is available in Appendix D, Complying With the Hazardous Waste Rules, on pages 105-110.

Perform boat repairs on an impervious surface over reusable permeable tarps, screens or filter cloth (Source: Jay Tanski, New York Sea Grant).

- Sweep or vacuum around hull maintenance areas, roads, and parking lots regularly. This will help prevent pollutants from reaching the basin or other areas of the marina. Personal and commercial vehicles and foot traffic can carry sand and dirt to the parking lots. Debris blowing in from the street or tossed out as litter from careless people can end up on the pavement. Storm water will carry the dirt and debris to the marina basin or to

inlet drains that lead to the body of water. If you employ any sort of filtering devices in your catch basins or inlet drain, regular sweeping or vacuuming of the parking lots will lead to reduced cost by requiring less change outs. A clean parking lot is also more pleasing to look at.

This rain garden installed in Porter County captures and treats run-off from the parking lot (Source: Indiana Lake Michigan Coastal Program).

- Plant or maintain vegetated areas between impervious surfaces (e.g., parking lots, roads, etc.) and the marina basin. Vegetated areas can function as a buffer, filtering out pollutants between impervious surfaces and the marina basin. When possible, use native plants in these vegetated areas.
- Use lawn fertilizers sparingly and follow manufacturers' application instructions to prevent nutrient run-off.
- Construct new or restore wetland areas where feasible and practical. This depends on space and cost. Wetlands are extremely efficient at removing pollutants from water.
- Use porous pavement where feasible. There are two types of porous pavement—porous asphalt and pervious concrete. Porous asphalt is an aggregate that is held together with binding material but with enough void space to allow water to permeate it. Pervious concrete is a mixture of Portland cement, aggregate, admixtures and water. It is mixed in such a way that there are interconnected voids for the passage of water. The pervious concrete should be placed on top of a filter layer, stone reservoir and a filter fabric. Porous pavement helps to recharge ground water and provides excellent pollutant removal (up to 80 percent of sediment, trace metals and organic material).
- Install oil/grit separators and/or vertical media filters to capture pollutants in run-off. These separators or filters are useful where oil or other petroleum products could be spilled. They are also good for areas where there is a large load of sand deposited with the storm water run-off. Oil/grit separators, if maintained properly, should have a life span of 50 years. Vertical media filters are usually used in parking lots and can help remove sediments, nutrients, metals, petroleum products and solid matter such as trash. This type of filter media can be adapted to fit the needs of the user.

Storm Water Run-off

- Use catch basins where storm water enters the marina in large pulses. Catch basins allow the sediment that comes with the storm water to settle to the bottom of the catch basin, which is usually two to four feet below the outfall pipe. These catch basins and traps will require periodic cleaning and proper disposal of the sediment. Catch basins have a life span expectancy of 50 years.
- Add filters to storm drains that are located near designated work areas. Different filters can be installed to remove different materials. These filters are usually designed to be disposable and, while less expensive than an oil/grit separator, will require more maintenance and frequent replacement.
- Place absorbents in drain inlets. These disposable products will help remove any oils or greases from entering the drain pipe. Catch basins are only designed to remove sediment. You should use absorbents around the storm drain inlets if you utilize catch basins. These pads will need to be cleaned or replaced regularly.

Fueling Stations

Applicability

This section applies to new, expanding, or existing marinas that provide fueling services.

Background

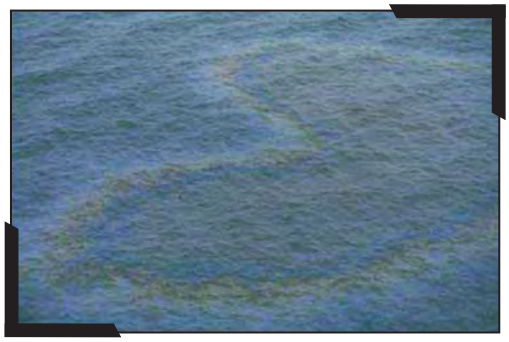
This fueling station is at the Hammond Marina.

Fuel spills, even small ones, can have an impact on marina operations. Under federal law, it is illegal to discharge oil or fuel into the water in any amount, even if it only creates a sheen. It only takes one pint of fuel to pollute up to one acre of water with a sheen. It is also illegal to add any dispersal agents, emulsifiers or coagulants to spills.

Beside potential violations, oil/fuel spills can cost you money in marina repairs. Petroleum will deteriorate the white polystyrene used in floats and docks. Fuel and oil can discolor boat hulls, woodwork and paint. There is also an issue of the potential fire risk due to the flammability of gasoline.

Fuel and oil spills also are detrimental to the environment. The components of gasoline contain carcinogens. These carcinogens are toxic to aquatic life and can upset fish and aquatic wildlife reproduction. While these compounds exist as a sheen on top of the water, some of the toxic chemicals may evaporate and pollute the air. Over time, heavier toxins sink to the bottom. Bottom dwellers may ingest the toxins. The toxins that have been ingested by these bottom dwellers will be passed up the food chain, ultimately ending up in game fish.

According to the U.S. Environmental Protection Agency (2001), most fuel dock spills result from overfilling boat fuel tanks or while transferring the fuel nozzle from the boat back to the fuel dock. These spills are usually small and can be minimized by taking some precautionary steps. Another potential source of fuel leaks comes from damaged pipes and hoses leading from the fuel storage tank(s). These leaks can result from boat collisions with the fueling dock or during severe storms. Petroleum-based fuels are lighter than water and float on the water's surface. This property allows for their capture if petroleum containment equipment is used in a timely manner.



Fueling Stations

Existing Federal and State Laws

Any marina that has the capacity to store greater than an aggregate of 1,320 gallons of petroleum above ground, including any container of 55 gallons or more; or more than 42,000 gallons underground that is not subject to the underground storage tank rules found in Title 40, Parts 280 and 281, of the Code of Federal Regulations (40 CFR Parts 280 and 281), and has a reasonable expectation of an oil discharge into or upon navigable waters of the U.S. or adjoining shorelines is required to have a spill prevention, control, and countermeasure (SPCC) plan. This federal regulation (40 CFR Part 112) requires that a facility that meets the criteria described above comply with the SPCC rule by preventing oil spills and developing and implementing an SPCC plan. Though not all marinas are required to have such a plan in place, having some form of response plan in place is a good idea.

Underground storage tanks must be constructed and installed according to U.S. EPA-inspired standards detailed in 329 IAC 9 by the authority of IC 13-23. Corrective action plans for cleanup of spills must be submitted to the Indiana Department of Environmental Management. Also, both 329 IAC 9 and 327 IAC 2-6.1 require reporting, containment of, and response to fueling station spills.

The Division of Fire and Building Safety within the Indiana Department of Homeland Security regulates marine fueling facilities under Chapter 22 of the 2008 Indiana Fire Code and more specifically Section 2210 (675 IAC-22-2.4), the Indiana Building Code (675 IAC 13) and the Indiana Mechanical Code (675 IAC 18). Such operations shall include both public accessible and private operations. They address construction of the facilities; storage and handling of associated liquids; dispensing of fuels; fire prevention and protection methods; and, venting of tanks.

IDEM's Office of Air Quality permits and regulates gasoline dispensing facilities under 326 IAC 8-4-4. Facilities must comply with the Stage I vapor recovery system requirements as detailed in section (b) of that rule. Section (c) details special requirements for facilities in Lake, Porter, Clark and Floyd Counties that dispense an average monthly volume of more than ten thousand (10,000) gallons of gasoline per month or that are not an independent small business marketer of gasoline or that are an independent small business marketer which dispenses an average monthly volume of more than fifty thousand (50,000) gallons of gasoline per month.

Gasoline dispensing facilities may be subject to IDEM's air permitting requirements due to potential emissions from the storage and pumping of fuel. Subject facilities may elect to obtain a permit or to comply with IDEM's Permit by Rule for gasoline dispensing operations found in 326 IAC 2-11.

Facilities with a storage tank capacity equal to or less than ten thousand five hundred (10,500) gallons and dispensing less than or equal to one thousand three hundred (1,300) gallons per day of either gasoline or diesel are exempt from the permitting requirements pursuant to 326 IAC 2-1.1-3(e).

Fueling Stations

Best Management Practices

U.S. EPA recommends these best management practices for marina fueling stations.

A boater and marina staff person practice spill prevention by using an absorbent cloth to prevent fuel from dripping.

- Use automatic shutoffs on fuel lines and at hose nozzles to reduce fuel loss.
- Remove older fuel nozzle triggers that hold the nozzle open without being held.
- Install personal watercraft floats at fuel docks to help drivers refuel without spilling.
- Require boaters to fuel all vessels at a designated fueling station or upland location away from water.

Source: BoatU.S. Foundation

- Regularly inspect, maintain, and replace fuel hoses, pipes, and storage tanks.
- Train fuel dock staff in spill prevention, containment, and cleanup procedures.
- Install signs on the fuel dock that explain proper fueling, spill prevention, and spill reporting procedures and contact numbers. The BoatU.S. Foundation has developed a number of materials designed specifically for marinas and fuel docks to educate dock staff and customers about clean fueling. The information is free and available at www.boatus.com/foundation.
- Locate and design fueling stations so spills can be easily contained and cleaned up.

Fueling Stations

Have a fire extinguisher readily available near fuel docks along with spill containment equipment.

- Write and implement a fuel spill recovery plan.
- Have spill containment equipment readily available and clearly marked. The locker or cabinet should contain:
  - ☐ Absorbent pads;
  - ☐ Absorbent booms (for small and large releases);
  - ☐ Empty sandbags;
  - ☐ Sewer pipe plugs;
  - ☐ Dry absorbent;
  - ☐ Spark-resistant square end shovels;
  - ☐ Spark-resistant pry bar;
  - ☐ Curtain boom;
  - ☐ Drain covers;
  - ☐ Fire extinguishers; and
  - ☐ A copy of the spill contingency plan.

If there is a spill, call IDEM's 24-hour emergency response hotline at (888) 233-7745 and the National Response Center at (800) 424-8802.

For More Information

Appendix E – (pages 111-114) Spill Prevention, Control and Countermeasure Plans

Appendix F – (pages 115-123) Emergency Preparedness and Spill Response (includes Emergency Response Phone Directory)

Sewage Facilities

Applicability

This section applies to new, expanding, or existing marinas.

Background

Wahala Beach in Lake County

As mentioned earlier in this guidebook, pollutants tend to concentrate within marina basins due to their sheltered environment. Of particular concern is the illegal discharge of untreated sewage from boats. The nutrients found in sewage can result in excessive plant and algal blooms within the marina basin. In severe cases, the decomposition of raw sewage within the marina basin may result in fish kills. As the sewage is broken down by bacteria, the bacteria consume oxygen that is dissolved in the water column. This is the same oxygen that fish require. Additionally, raw sewage contains disease-causing bacteria and viruses which are a threat to swimmers and others coming into direct contact with the water. Every year there are a number of beach closures along Indiana's Lake Michigan beachfront due to elevated E. coli levels (an indicator of sewage contamination).

While the potential volume of sewage that could be released from boats is relatively small as compared with sewer overflows, the concentration of the sewage is much higher. There is no dilution of the sewage with water from bathing, dishwashing, or clothes washing. Marine heads use little or no water.

Existing Federal and State Laws

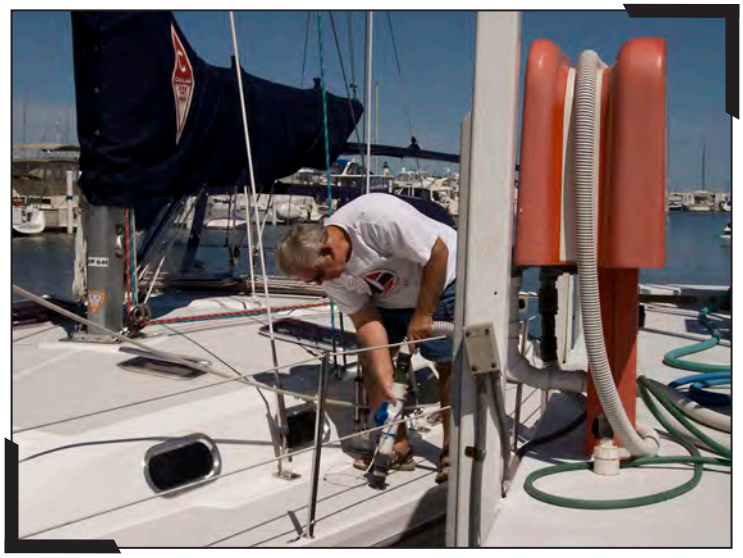
A marina located on the state's navigable waters and its public freshwater lakes must provide a pumpout that is in good order and is readily accessible to marina patrons unless the marina obtains an exemption from the Indiana Department of Natural Resources (IDNR) Division of Law Enforcement. IDNR may issue an exemption based on whether a marina is designed to service exclusively boats that are not required or likely to be equipped with a marine sanitation device or if the marina has entered into a binding agreement with another marina or similar facility to provide pumpout services. This exemption is valid for five (5) years at which point the marina must reapply for the exemption. If a marina is interested in obtaining an exemption it should contact IDNR at (317) 232-4011 for more information. To install and manage a pumpout station the marina must obtain either:

1. Permission from the local publicly owned treatment works (POTW) to connect to an existing sanitary sewer line owned/operated by the POTW;

Sewage Facilities

2. Approval from the Indiana Department of Environmental Management (IDEM) to construct a new sanitary sewer line and permission from the local POTW to connect the new sanitary sewer line to the POTW;

3. Approval from IDEM to construct a new sanitary sewer line and a wastewater treatment plant (in which case both construction permits and possibly an NPDES permit would be needed, depending on what would be done with the treated water from the wastewater treatment plant);



A boater uses a pumpout station at the Washington Park Marina.

4. A permit from the Indiana State Department of Health under 410 IAC 6-10 for the construction of a commercial on-site wastewater disposal facility;

5. A contract with a septic waste hauler and off-site disposal facility to manage the sewage; or

6. An alternative written approval for wastewater disposal from an authorized governmental agency (312 IAC 6-4-3) (312 IAC 11-4-1).

The Clean Vessel Act, which is administered by the U.S. Fish and Wildlife Service, makes grant dollars available to private and public marinas for the installation and restoration of boat sewage pumpout stations and portable toilet dump stations. IDEM has been awarded a grant from the U.S. Fish and Wildlife Service to implement the Clean Vessel Act Pumpout Program. Pumpout stations are used to dispose of highly concentrated human waste collected aboard boats. Under this program, marinas are reimbursed up to 75 percent of pumpout construction costs.

Sewage Facilities

Best Management Practices

U.S. EPA recommends the following best management practices for sewage facility management and maintenance.

- Install pumpout facilities and dump stations that meet the marina's needs. There are three types of onshore sewage collection systems—fixed point, portable/mobile and dedicated slipside systems.

    1. Fixed point systems are stationary systems. The boat that needs service can move to the pumpout station. A hose is connected to the sanitation device fitting and a pump or vacuum system moves the waste material into an onshore holding device or into the sewer system. A fixed point system should be centrally located and have free and easy access for boats to maneuver.

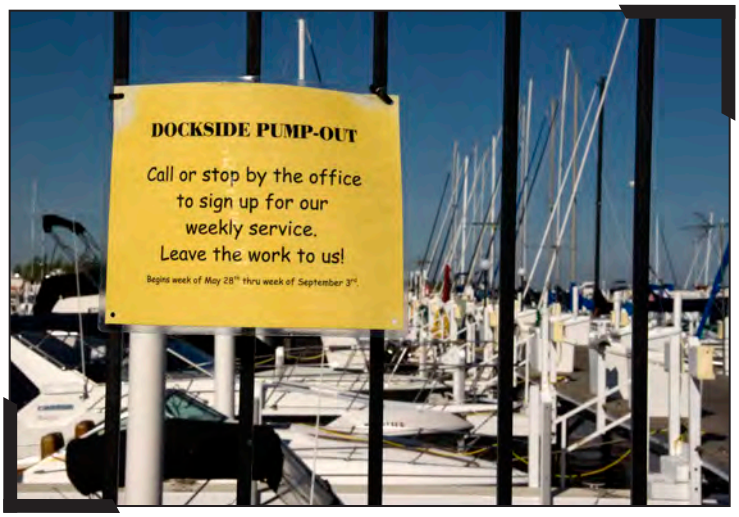
    2. Portable systems are good for smaller, more difficult-to-maneuver marinas. They may or may not have a holding tank attached to them. Since these systems are portable, they can be pushed to the boat needing service instead of having the boat come to the dedicated pumpout station. Some boaters find this more convenient. The mobile systems are able to move about the marina. An empty mobile station is easier to maneuver than a full one. You must consider returning the mobile system to an area where it can be pumped out and whether it is feasible to move when full. These systems also require more hands-on cleaning activities.

Portable toilet dump station

    3. Dedicated slip side systems provide continuous wastewater collection at select slips within the marina. These are good systems if enough slips can be dedicated to their use. These systems have a direct connection to the boat and a below-dock gravity drained sewer system. It utilizes a vacuum-type pumpout system.

Sewage Facilities

- Along with these three sewage collection systems, a dump station should be available for boaters who have portable toilets. Dump stations can be considered a satisfactory disposal facility and may be fundable with funds from the Clean Vessel Act.



Washington Park Marina in Michigan City provides dockside pumpout services.

- Provide pumpout service at convenient times and at reasonable costs. Having the pumpout station open at the same times as the fueling station allows for patrons to fuel and dump during the same trip. Have extra staff available before and after weekends to meet your patrons' needs. Consider discounts to patrons who fuel at your dock, or incorporate it into the slip fees.

- Keep pumpout stations clean and easily accessible. While offering free or inexpensive pumpouts are likely to attract customers, having pumpouts that look dirty, are full of clutter and are difficult to use are a sure deterrent. Keep the equipment clean and free of debris. Post instructions near the station and offer training on its operation.

- Consider having marina staff do pumpouts. This service is appreciated by patrons and, if added to free pumpouts, would attract many customers to your slips.

- Provide portable dump stations near small slips and launch ramps. Most smaller boats (less than 26 feet in length) do not have marine sanitation devices on board. Many marinas allow transient boaters to launch from their ramps. Many of these transient boats do not have marine sanitation devices. These boaters utilize portable units that can be carried on shore for dumping into toilets. To further encourage boaters to properly dispose of their waste, dump stations should be kept clean and located in an area that is convenient to the ramp area. Public launch ramps should offer a dump station where feasible.

- Federal law prohibits the discharge of untreated waters into all territorial waters and inland waters of the nation. These areas are considered no discharge zones. On Indiana's boundaries of Lake Michigan and its navigable tributaries in the Indiana Lake Michigan Coastal Area Type I and II marine sanitation devices may lawfully be used. For additional information regarding waterways on which Type I and II marine sanitation

Sewage Facilities

devices may lawfully be used, see www.IN.gov/legislative/register/20070214-IR-312070082NRA.xml.pdf. The marina can seek designation as a no discharge area if certain conditions are met and the marina works with the state to petition U.S. EPA. To be considered for a no discharge zone classification the marina must meet one of three criteria:

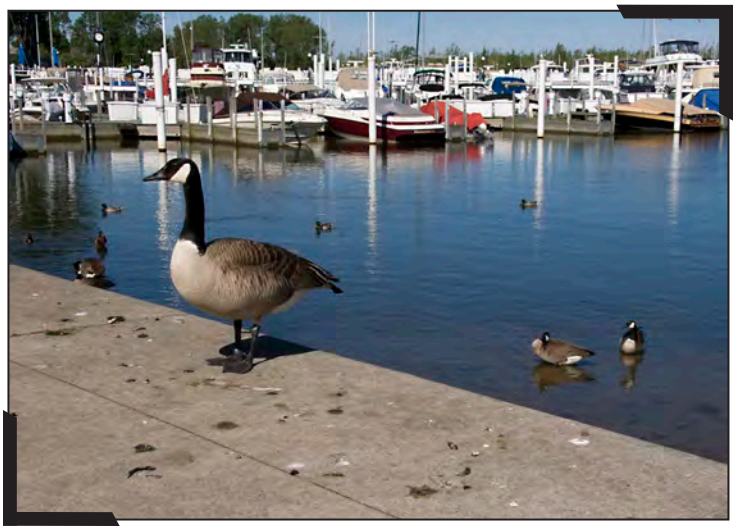
1. There must be adequate restroom facilities for patrons and convenient and low/no cost pump-out services for both marina slip holders and transient boaters;
2. There are drinking water intakes nearby; or
3. The waters around the marina warrant greater environmental protection.

This bath house and public restroom is located at Washington Park Marina.

For more information on the designation process please read U.S. EPA document EPA-842-B-94-004, *Protecting Coastal Waters from Vessel and Marina Discharges*. This document is available from U.S. EPA's publication website at www.epa.gov/nscep/index.html.

This dog walk area has educational signage, pet waste collection bags, a garbage can and even a fire hydrant!

Sewage Facilities



Resident waterfowl droppings can contribute to high levels of bacteria and viruses in the receiving waterbody.

- Provide convenient and clean public restrooms. Most boaters would prefer to use clean, well-lit restrooms than the portable unit located on the boat. If the restrooms are easy to access by boat and boaters, the potential for overboard discharge of untreated sewage is lessened.
- Establish practices to control pet waste problems. Provide a special area away from the shoreline for pets to be taken for walks. Install fenced dog parks to allow patrons to exercise their dogs or put in park benches to encourage the owner to use the space. The area should be grassy and away from storm drains. Offer a supply of cleanup bags and a refuse container with a lid on it. Educate your patrons on the issues with pet waste and ask them to clean up after their pet.
- Avoid feeding wild birds, including ducks, geese and/or seagulls, in the marina. This encourages birds to flock to the marina and become long-term residents. The birds' waste can contaminate water and create a mess on boats and walkways.

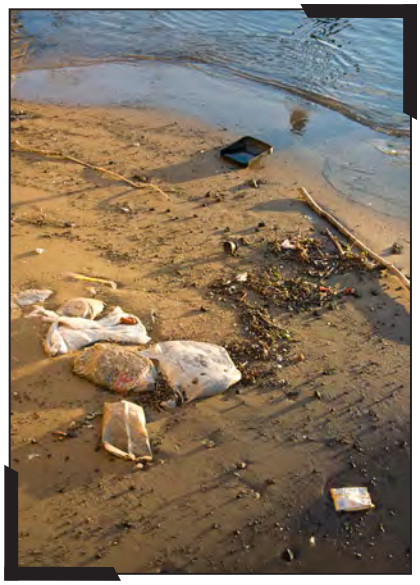
Solid Waste (Trash & Marine Debris)

Applicability

This section applies to all marinas.

Background

The day-to-day activities of marina patrons and the marina itself can generate substantial amounts of solid waste. A few examples include bottles, cans, plastic bags, paper bags, food containers, cigarette filters, fishing line and polystyrene bait containers. Items such as discarded fishing line or plastic rings used to hold soda cans or bottles together can injure wildlife living within or near the marina through entanglement or ingestion. Ghost fishing, the entanglement of fish and wildlife, is a serious threat. Some of today's advanced fishing lines take a long time to break down in the environment. Waterfowl may become tangled in discarded line, often resulting in injury or death. Plastic bags and fishing line can be costly to boaters. These plastics can snare propellers and clog engine intake systems. Not only can marine debris be an eyesore, it can also harm patrons. Broken glass or fishing lures can cut or puncture the feet of swimmers. By providing sufficient waste receptacles, much of this litter can be kept out of the marina's basin or adjacent waterways.



Trash in the marina environment is unsightly and can injure wildlife.

Existing Federal and State Laws

The Indiana Department of Natural Resources regulates the disposal of waste near a lake and prohibits the disposal of contaminants or waste within 15 feet of a lake or in a floodway. It is illegal to discharge waste, oil, trash or other toxic substances into Indiana state waters under IC 14-15-2-8 during the operation or use of watercraft.

Solid Waste (Trash & Marine Debris)

The MARPOL (Marine Pollution) treaty is an international law that has been adopted by the United States. Annex V of the treaty is aimed toward protecting navigable waters from trash. The treaty makes it illegal to discharge any garbage, including plastic, paper, rags, glass, food, crockery, metal or dunnage (lining and packing materials that float) in the navigable waters of the United States and in all waters, within three nautical miles of the nearest land. The discharge of garbage is prohibited in the Great Lakes and their connecting or tributary waters.

The MARPOL treaty also requires any boat over 26 feet to display a placard at least 4 inches by 9 inches notifying passengers and crew about garbage restrictions.

Shrink wrap used for winter storage can be recycled.

Most every patron recycles in their daily lives, be it at home or at work. Recycling is also important at marinas. Much of the garbage produced at marinas is the same as household trash, including glass, plastic, paper and metal. Over the past 15 years, the use of marina shrink wrap to cover boats during the winter seasons has increased dramatically. Marina shrink wrap presents a disposal concern and a recycling opportunity. Shrink wrap is not biodegradable, and it can become a disposal problem at landfills. In the landfill, it consumes capacity and is wasteful because it is only used once. There is an opportunity to recycle shrink wrap because it is a high quality plastic for which markets are readily available.

Solid Waste (Trash & Marine Debris)

Best Management Practices

Marinas can implement these best management practices to control solid waste.

Trash and recycling bins are placed adjacent to each other for convenience.

- Place trash receptacles in convenient locations around the marina for patrons to use, such as on each gangway. Select high-traffic areas near boat launches and bathrooms, by vending machines, near the dog walk area, and along the path to the parking lot. Make sure the receptacles are secured wherever there is a possibility they may be inadvertently tossed or blown into the water. Provide lighting in these areas.
- If possible, utilize covered receptacles to reduce pest issues. Make sure to empty the containers frequently. Inspect the areas daily to make sure the containers are not full or that garbage was not placed next to it.
- Instruct patrons on proper garbage protocol. Have them practice trash in, trash out. Remind them that plastic bags blow and that they should use recyclable containers and reusable bags. Ask them to cut the rings of six pack holders prior to disposal. Post signs to educate boaters on the location and use of the containers.

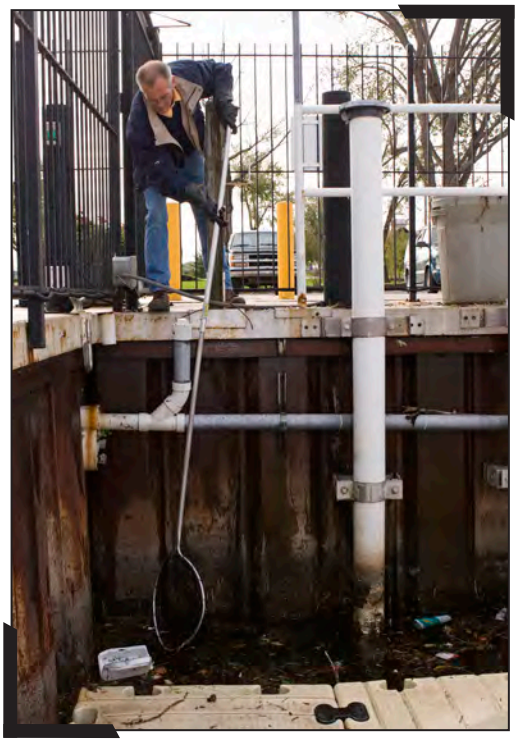
A recycling hauler collects shrink wrap from Trail Creek Marina in Michigan City.

- Place recycling bins for glass, plastic and metal cans next to each garbage can. Contact your trash hauler or local solid waste management district about setting up a recycling program. Have the recycling bins be of a different color or shape than the garbage cans to better identify them.
- Recycle winter storage shrink wrap.
- Promote used fishing line collection for recycling or proper disposal.

Solid Waste (Trash & Marine Debris)

- Use a pool skimmer or fish landing net to pick up floating debris that collects within the basin.

A fisherman recycles fishing line to prevent entanglement of fish and wildlife. The homemade recycling bin was installed near the docks.



An employee of Washington Park Marina in Michigan City skims the basin to collect floating debris.

Fish Waste

Applicability

This section applies to all marinas.

Bluegills (Photo by John Maxwell, IDNR)

Background

Fish waste can lead to water quality problems if not properly disposed of within a marina due to its sheltered environment. As part of the decomposition process, bacteria consume oxygen dissolved in the water column, leading to foul odors and, in severe cases, fish kills. It is also unattractive. Who wants to see floating fish parts or smell decaying fish as they lounge on their boat? Although the death and decomposition of fish is a natural process in our waterways, the potential volume of fish waste generated during the heavy boating seasons and fishing tournaments can quickly overwhelm the natural environment if the waste is simply tossed overboard.

Fish cleaning stations offer patrons an alternative to tossing fish waste overboard, leading to a cleaner, more attractive marina. Many patrons appreciate fish cleaning stations as it provides an alternative location to their boat for the messy job of cleaning a fish.

This fish cleaning station is at Trail Creek Marina in Michigan City.

Existing Federal and State Laws

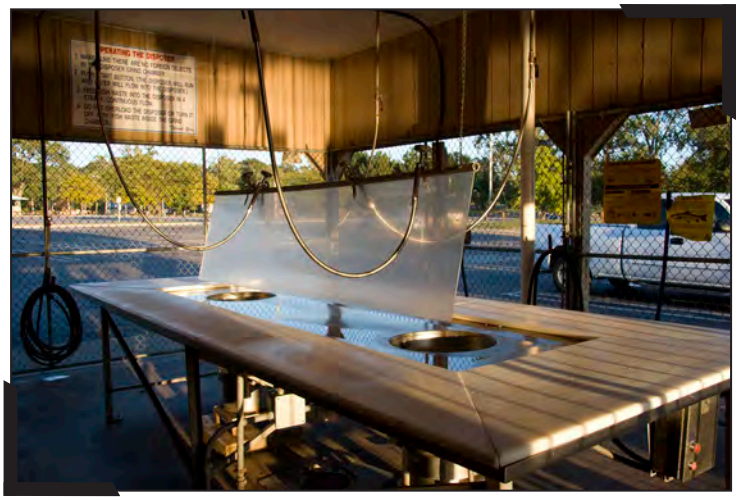
The disposal of fish waste is regulated under IC 14-22-9-6, which states all offal or filth of any kind accruing from the catching, curing, cleaning, or shipping of fish in or near the water of Lake Michigan shall be burned, buried, or otherwise disposed of in a sanitary manner that does not pollute the water. It also states the waste should not become detrimental to public health or comfort.

Fish Waste

Best Management Practices

Below are some best management practices that can be implemented to control fish waste within a marina.

- Install fish cleaning stations. The fish cleaning stations should be in a convenient location that is sheltered from wind and rain. The station should be designed to grind the fish waste. Running water should be supplied. Ask your local sanitary district if the station can be plumbed to the sanitary sewer. Keep the cleaning station sanitary and clean to attract patrons.



Encourage boaters to use fish cleaning stations, such as this one at Washington Park Marina in Michigan City.

- Educate patrons on fish waste protocol. Explain that disposing of fish waste in the marina basin is prohibited. Inform them on the locations and hours of fish cleaning stations.
- Prohibit cleaning of fish at docks. This will keep your marina cleaner, keep odors down and reduce nuisance birds and pests.
- Utilize alternative disposal options for fish waste. Consider composting fish waste and using it as a natural fertilizer. The University of Wisconsin Sea Grant Institute has published "The Compost Solution to Dockside Fish Wastes," a report describing how to compost fish waste and transform it into a useful, potentially marketable product. The report can be downloaded from the Web at http://aqua.wisc.edu/publications/ (click on "Fisheries Research") or ordered from the University of Wisconsin Aquatic Sciences Center at (608) 263-3259.
- Help prevent the spread of viral hemorrhagic septicemia (see page 75) and other fish diseases by encouraging boaters not to use fish parts as bait or chum.
- If there are no disposal options, have the boaters double bag the fish waste and dispose of it with the regular trash.

Liquid Materials

Applicability

This section applies to all marinas.

Background

Oil recycling is a best management practice marinas can implement.

Marina operations and day-to-day boat maintenance require the use and storage of a variety of liquid materials. Engine lubrication, bilge pump repair and cleaning, boat hull maintenance and deck washing can contain corrosive or toxic chemicals such as antifreeze, oils, fuels, solvents, paints, and assorted corrosive cleaners. Adequate storage, handling, recycling, or disposal of these hazardous materials is very important to keep these materials out of the marina basin and adjacent waterways and to prevent pollution.

Existing Federal and State Laws

The Indiana Department of Natural Resources regulates the disposal of waste near lakes and prohibits the disposing of contaminants or waste within 15 feet of a lake or in a floodway. It is illegal to discharge waste, oil, trash or other toxic substances into Indiana state waters under IC 14-15-2-8. Several other agencies regulate hazardous wastes and materials. They include the Indiana Department of Environmental Management, the Indiana Department of Labor (administering the Occupational Safety and Health Administration regulations), the Indiana Department of Homeland Security's Division of Fire and Building Safety, and the U.S. Department of Transportation.

Best Management Practices

Listed below are several best management practices that marinas can implement to prevent harmful liquid materials from entering the marina basin or nearby waterways.

- Have a spill response plan. Have spill containment/cleanup supplies readily accessible. Have semiannual spill response drills. Have a list of response equipment and locations. Inspect spill supplies weekly and replace items as necessary.

Liquid Materials

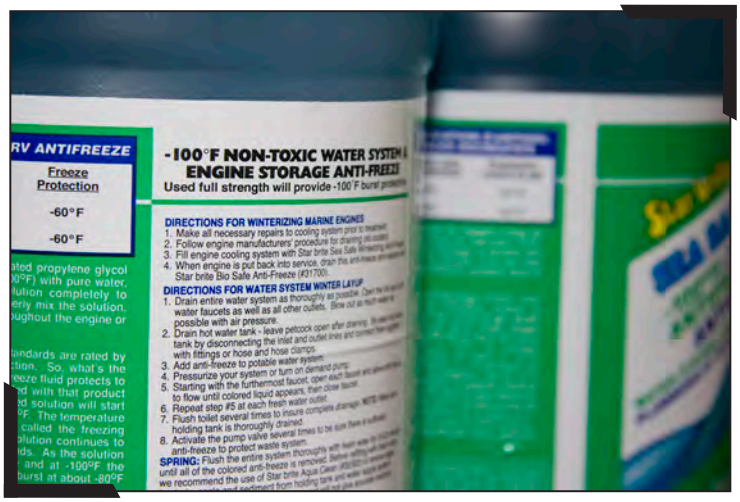
- Train employees in oil spill response. Have every staff member aware of what their responsibility is. Post emergency numbers at fueling stations and around the liquid storage area.
- Build curbs, berms, or other barriers that can contain a spill, should one occur in areas used for storage. The containment area should be able to hold 10 percent of the total volume of liquid materials stored or 110 percent of the volume of the largest container in storage. Protect or close any floor drains in the area, including storm drains.

Used oil, antifreeze and other liquid collection containers should have secondary containment to catch spills and prevent releases to the environment (Photo by Cathy Csatari, IDEM).

- Store liquid materials on a surface that is impervious and allows ease of cleanup. Keep the containers protected from rain, snow and excessive heat.
- Store minimal quantities of hazardous materials if possible. Use "just in time" inventory control and rotate stock.
- Have clearly labeled, chemically compatible, U.S. Department of Transportation-approved containers for all waste storage. Plainly mark each container, identifying the type of waste material to be placed in it. Separate containers should be used for different activities, if possible. Keep the containers closed when not in use.
- Recycle liquid materials when possible. Have different containers labeled for used oil and antifreeze.
- If your marina is accepting used oil, you should accept oil filters at the same location. Drain the oil from the filter into the used oil drum. Place the used filter into a separate drum for recycling.
- Use and promote environmentally-friendly products such as antifreeze formulated with less toxic propylene glycol instead of highly toxic ethylene glycol, water-based paints and low volatile organic compound coatings as long-lasting and nontoxic antifouling paint when possible.

Liquid Materials

- Encourage boaters to utilize household hazardous waste collection programs in their community for disposal of unwanted chemicals.
- Educate patrons on the proper disposal of unwanted waste chemicals. Post signs near dumpsters.



Encourage boaters to use nontoxic antifreeze and stock it in your marina store if you have one.

For More Information

Appendix D – (pages 105-110)
Complying With the Hazardous Waste Rules

Appendix G – (pages 125-158)
Hazardous Waste Streams

Appendix H – (pages 159-162)
Hazardous Waste Generator Status and How the Rules Apply to You

Appendix I – (pages 163-169)
Selecting a Waste Transporter & Recycling/Waste Management Company

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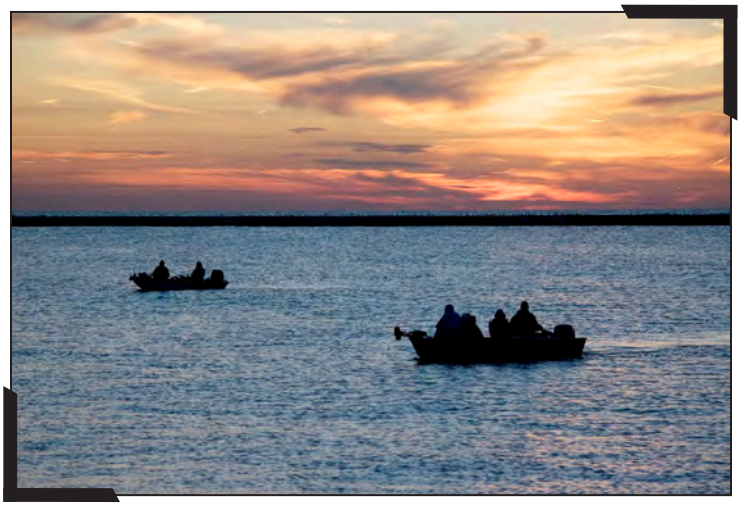
Petroleum Control

Applicability

This section applies to marina operators and individual boat owners.



Marina operators and boaters can prevent damage to the aquatic environment by using pollution prevention best management practices that prevent fuel and oil spills.

Background

Recreational boating fuel and oil spills are often the result of careless fueling practices or from fuel and oil discharged from bilges. It is not uncommon to see a small fuel sheen on the water surface near docked boats. Not only are these fuel spills unsightly and unpleasant smelling, they can pose serious harm to the aquatic environment.

As the petroleum sheen spreads across the surface of the water, it creates a barrier to oxygen movement across the water and to surface dwelling animals. As it slowly sinks to the bottom, it clogs plant pores and decreases their ability to uptake oxygen. As the oil settles to the floor, bottom feeders ingest the oil, disrupting their reproduction and growth.

Existing Federal and State Laws

The Indiana Department of Natural Resources regulates the disposal of waste near lakes and prohibits the disposing of contaminants or waste within 15 feet of a lake or in a floodway. It is illegal to discharge waste, oil, trash or other toxic substances into Indiana state waters under IC 14-15-2-8.

The Indiana Department of Homeland Security's Division of Fire and Building Safety regulates marine fueling facilities under Chapter 22 of the 2008 Indiana Fire Code and more specifically, Section 2210 (675 IAC 22-2.4). They address construction of facilities, storage and handling of associated liquids, dispensing of fuels, fire prevention and protection methods, and venting of tanks.

Best Management Practices

Marinas and recreational boaters can implement the best management practices on page 60 to prevent or reduce the amount of petroleum products entering the aquatic environment.

Petroleum Control

- Promote the installation of fuel/air separators on inboard fuel tank air vents. This will help reduce the amount of fuel spilled into surface waters while fueling. These separators are available commercially and are typically easy to install.

Use absorbent bilge pads to soak up oil and fuel and properly recycle or dispose of them.

- Avoid overfilling fuel tanks. Remember fuel expands in warm weather. Encourage boaters to fuel up prior to going out. If they must refuel upon their return, suggest that they only fill the tank 90 percent to allow for vapor expansion. Never leave the boat unattended while fueling and listen for a sound change as the tank gets close to full.
- Provide fuel absorbing pads or rings at the fuel dock. Have precut pads or doughnuts that fit the nozzle and encourage boaters to use them. Their use will reduce splashback and drips from entering the water.

The use of a bilge sock would help prevent oil collected in the bottom of this bilge from being discharged to the lake (Photo by Joe Exl, IDNR).

- Encourage boaters to routinely check for engine fuel leaks. Teach them how to check fuel lines for signs of wear. Promote the use of drip pans under engines.
- Prohibit the use of detergents on fuel docks to dissipate fuel spills.
- Keep engines properly maintained.
- Prohibit the filling of portable containers on the fuel dock as well as the fueling of boats in the water using portable containers.
- Immediately report oil and fuel spills to the marina office and the U.S. Coast Guard National Response Center at (800) 424-8802.
- Request that boaters avoid pumping bilge water that has an oily sheen. Use bilge socks to collect floating oil and fuel in the bilge. Offer recycling/disposal options for the used absorbents.

Boat Cleaning

Applicability

This section applies to marina operators and individual boat owners.

Background

A man pressure washes a boat hull in a designated area equipped to reduce the impact of wastewater (Source: U.S. EPA Clean Marinas/Clear Value).

As noted in the Liquid Materials section on pages 55-57, some of the common products used by boat owners and marina operators to clean boats can cause harm to the aquatic environment if care is not taken during their use. Special care and consideration should be taken when cleaning boats in the water. Some cleaning products contain harsh chemicals such as chlorine, ammonia, and phosphates that can harm fish and wildlife. If the product is labeled as being harmful to the user ("toxic" or "may cause burns") it is most likely harmful to aquatic life. While the potential of harm in cleaning a single boat is quite low, it must be multiplied by the number of people cleaning their boats. Many products on the market promise a sparkling shine and ensure that they will get the surface clean with minimal effort by the user. However, there are old-fashioned, environmentally-sound methods of boat cleaning. The old adage "use a little elbow grease" is a good mantra to follow.

An additional concern regarding boat cleaning involves the antifouling paints that are used on boat hulls to prevent the boats from getting covered in algae or slime or encrusted with zebra mussels. Aggressive cleaning such as mechanical scrubbing below the waterline can displace this paint, allowing it to settle to the bottom.

Some of the chemicals contained in cleaners or antifouling paints can bioaccumulate in aquatic organisms. They become more concentrated as they are ingested successively by animals higher up on the food chain. Ultimately, these contaminants could wind up in the fish that are eaten by people. If boat cleaning is done in an environmentally-sensitive manner the introduction of these chemicals can be reduced.

Boat Cleaning

Existing Federal and State Laws

Marina operators should note that under the Clean Water Act, the National Pollutant Discharge Elimination System Permitting Program defines boat wash water as "process water" (U.S. EPA, 2001). Discharge of any process water is illegal without a permit from IDEM under this program. Any questions involving this program should be directed towards IDEM's Office of Water Quality, Permit Branch at (800) 451-6027.

The Indiana Department of Natural Resources regulates the disposal of wastes near lakes and prohibits the disposal of contaminants or wastes within 15 feet of a lake or in a floodway. It is illegal to discharge waste, oil, trash or other toxic substances into Indiana state waters under IC 14-15-2-8.

Best Management Practices

Recreational boaters and marina operators can implement these best management practices while cleaning boats.

- Whenever possible, wash the boat on land in a contained area where the wash water can be collected and treated.
- Wash boat hulls above the waterline by hand using a soft sponge and frequently enough so that the need to use cleaners will be reduced.
- Avoid using caustic cleaners such as bleach, ammonia or lye. Do not use petroleum-based cleaning products.

This professional boat cleaning service uses "elbow grease" and environmentally-friendly cleaning products.

- If possible, use cleaning products that are environmentally friendly (e.g., non-toxic or phosphate-free). Always follow the instructions on the label and test the product in an inconspicuous area. Use the products sparingly and only when "elbow grease" is not working. Beware of biodegradable cleaners that may still be toxic. Some homemade non-toxic cleaning alternatives are listed on page 64.
- Use long-lasting or low-toxicity antifouling paints. Use silicone or hard-surfaced nonablative copper metal-based paints.

Boat Cleaning

- Take precautions to prevent the spread of aquatic invasive species when transferring boats from one water body to another by using hot water and allowing the boat to thoroughly dry for a minimum of five days. Boaters in the Great Lakes can take additional precautions to help prevent the spread of viral hemorrhagic septicemia (VHS) by disinfecting their boat and gear with a dilute bleach solution. Disinfection with bleach should occur away from lakes and rivers because it is toxic to aquatic life. Please refer to pages 71-77 for more information on nuisance and aquatic invasive species.

These boat cleaning professionals wash boats on land.

- Keep your boat waxed. A good coat of wax will prevent surface dirt from becoming ingrained in the hull and makes your boat easier to clean later.
- Minimize the impacts of wastewater from pressure washing. This can be done by using settling traps where the wash water is allowed to sit long enough for the large particles to settle to the bottom before discharging the water, by using a filtration unit that screens out particles, and chemical or biological treatment of the collected water. Treatment can remove oil, grease, metals and other contaminants. Effluent from pressure washing usually will require a storm water discharge permit.

Tip

If collecting and treating wastewater is not feasible, wash boats on a permeable surface such as gravel or on a lawn as far away from the waterway or storm drain as possible. This will allow the wastewater to infiltrate into the ground. Make sure, however, that there is no drinking water well nearby. Place filter fabric over the permeable surface to collect solids. Dispose of solids in an appropriate manner.

Boat Cleaning

Non-Toxic Cleaning Alternatives

- **All Purpose Cleaner**
  Straight vinegar, vinegar and salt, or a paste of baking soda and water are all effective grease cutters.

- **Aluminum Cleaner**
  After removing as much substance as possible, fill a pan with one quart of water and two tablespoons cream of tartar. Bring to a boil and simmer for ten minutes. Rinse well.

Environmentally-friendly cleaning products have less of an impact on the environment than toxic or phosphate-containing products.

- **Window/Glass Cleaner**
  Fill a spray bottle with equal amounts of vinegar and water. Apply with a soft cloth and dry with a squeegee or newspaper.

- **Furniture Polish**
  Use olive oil on all wood surfaces. Apply with a soft cloth, rub in, let stand for several hours, and then polish with a soft, dry cloth to remove any residue.

- **Tile Cleaner**
  Sprinkle baking soda on a sponge or green scouring pad. Add vinegar to remove rings or soap scum.

- **Decorative Metal Cleaner**
  (for brass, copper or pewter)
  Combine 1/2 cup of salt with 1/2 cup white vinegar. Add enough flour to make a paste. Apply and let sit 15 minutes to one hour. Rinse thoroughly to prevent corrosion. Salt and vinegar should not be used on metals that have a lacquer coating.

- **Copper Cleaner**
  Make a paste of lemon juice, salt and flour.

- **Fiberglass Stain Remover**
  Use a paste of baking soda.

- **Mildew Remover**
  Combine lemon juice and salt or white vinegar and salt to make a paste.

For More Information

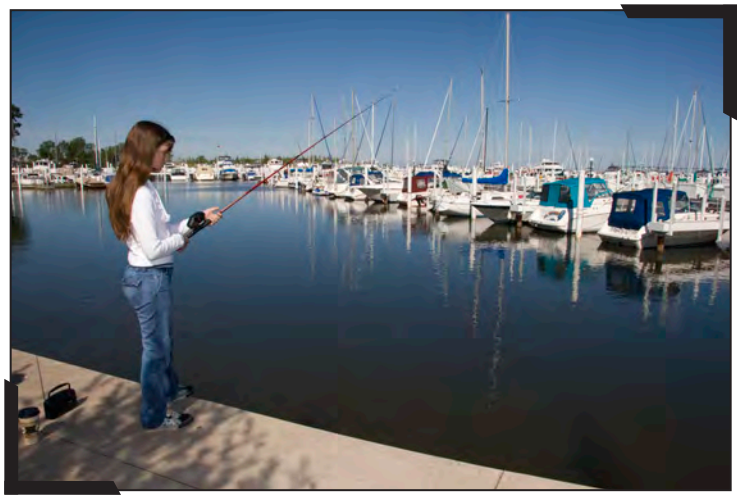
See **Appendix L** for information on household hazardous waste collection (pages 194-195) and local solid waste management districts (pages 195-196).

Public Education

Applicability

This section applies to all marinas and any agency or group involved in boater education.

Background



Public education is one of the most effective and efficient ways to reduce nonpoint source pollution in marinas. Recreational boaters who understand how their daily activities can impact water quality are often happy to do their part to protect the resource. There are numerous sources of public education programs and materials that are available for marinas and boaters to utilize. Examples include the Indiana Department of Natural Resources' boaters' education program, which features a free, online boat safety course, and this guidebook! Additionally, marinas may want to check if the town or city in which they are located is designated as a municipal separate storm sewer system community. If so, there may be information from the community's municipal separate storm sewer system coordinator that can be used.

Best Management Practices

Listed below are just a few of the many best management practices that are available for public outreach and education as well as marina staff.

- Use signs to inform boaters of appropriate clean boating practices. Post signs at the marina office, docks and near waste disposal receptacles. Have best management practice signage and spill control measures posted at pumpout and fueling stations. Make sure the signs are easy to read by using large print and eye-catching designs.
- Utilize bulletins to post environmental messages. Post the bulletins in areas frequented by boaters such as the marina store and restrooms.

Boater Education

Information about IDNR's boaters' education program can be obtained by contacting the Law Enforcement Division at (317) 232-4010, your local law enforcement district office, or visit the website at www.IN.gov/dnr/lawenfor/2755.htm.

Public Education

- Promote recycling. Offer recycling and post signs directing boaters to recycling locations.
- Distribute pamphlets, newsletters, and inserts with bill mailings that promote appropriate clean boating practices. Include maps that show the pumpout, dump, fish cleaning and fueling stations as well as locations for environmental services, including locations to obtain spill cleanup kits and recycle batteries, oil, plastic, metal, and glass.
- Educate and train marina staff to be environmentally conscious as they perform their duties and to be role models for marina patrons.
- Insert language into marina contracts that promotes and ensures that tenants will comply with the marina's best management practices. Make sure that they are aware of any restrictions on boat cleaning, repair and maintenance.
- Have a best management practice agreement for outside contractors to sign as a precondition to performing any work inside the marina.
- Mark storm drains with phrases such as "Dump No Waste—Drains to Lake Michigan" or use similar wording tailored to the name of your lake or reservoir.
- Hand out the clean boater tip sheets that accompany this guidebook (see Appendix K on page 175).

The Hammond Marina in Hammond offers battery recycling in its public laundry room.

Public Education

This storm drain is marked with fish symbols and text that indicates, "Dump No Waste! Drains to Waterways."

A sign posted at the launch ramp provides boaters with tips on how to prevent the spread of exotic invasive species.

Public Education

Signage for dog owners encourages proper waste handling.

Free educational signage is available at www.boatus.com/foundation/cleanwater/drops/marinas/Educational.asp.

For More Information

Appendix J – (pages 171-174)
Sample Contract Language
(for tenants and outside
contractors)

Appendix K – (page 175)
Clean Boater Tip Sheets

Boat Operation

Applicability

This section applies to all marinas.

Background

Boat traffic and operation can have a significant impact on shallow water habitats. Boat wakes can have an erosive effect on shorelines and uproot submergent and emergent plants. This leads to reduced habitat for fish and wildlife and increases suspended sediment loads. Suspended sediment reduces the amount of sunlight penetrating the water column, shading out submerged plants that are important to fish for habitat and oxygen production. As the suspended sediments settle, they can smother fish nests and habitat. Excessive suspended sediments also give water an unpleasant brown coloration.

Existing Federal and State Laws

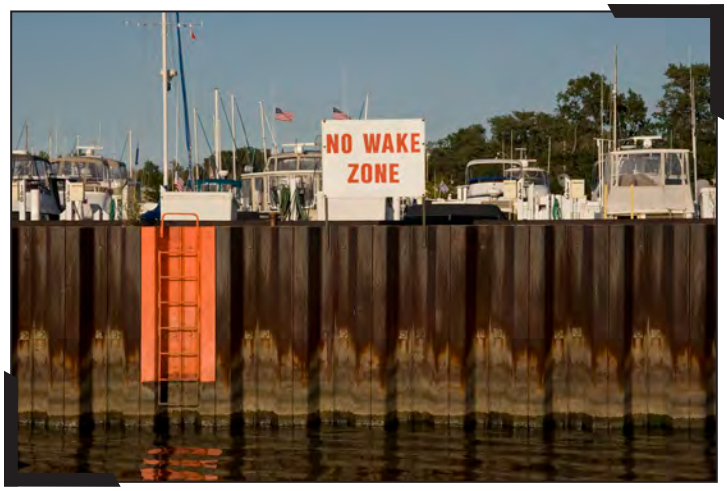
Motorboats are restricted to idle speed within 200 feet of the shoreline of Lake Michigan and any other lake (IC 14-15-3-17). Within this near-shore zone, the only legal operations for motorboats are for trolling or to leave or enter a dock, pier, or wharf. Informational buoys are often placed to assist the boater in identifying the 200-foot near-shore zone, but the existence of these buoys is not required to establish the offense. Where these informational buoys exist, they are white and marked with an orange rectangle and black lettering.

Best Management Practices

Listed below are a few boat operation best management practices that marinas can implement to help protect shallow water habitats in their marinas.

- Restrict boater traffic in shallow water areas.
- Establish no wake zones to reduce turbidity, shoreline erosion, and damage to the marina. Establishing a

no-wake zone or a zone where boats are prohibited can be lawfully accomplished by the U.S. Coast Guard or the Natural Resources Commission but not by a private citizen. At the state level, a rule adoption would be required. A citizen could petition the NRC to establish a special boating zone. When such a petition is received, the Indiana Department of Natural Resources would form a committee to review the petition and make recommendations to the IDNR director and the NRC.



No wake zones can be established to protect shallow water habitat and help prevent shoreline erosion.

- Discourage power loading of boats at launch ramps as much as possible.

Exotic & Nuisance Aquatic Species

Applicability

This section applies to all marinas, especially those that offer launch ramps.

Background

The waters of the Midwest are under attack by aquatic invasive species. These aquatic invaders are also called "exotic" or "nonindigenous" because they are not native to our waters. Many came from Europe and Asia in the ballast waters of ships and are spreading at alarming rates. In several cases they are having significant impacts on our native species and habitats.

Some of these species are spreading as "hitchhikers" on boats and other recreational equipment. Whenever boaters move from one body of water to another without cleaning their equipment, harmful organisms may remain attached and be carried to the next waterway inadvertently spreading the invader.

Eurasian Watermilfoil (Source: Alison Fox, University of Florida, www.Bugwood.org)

Eurasian Watermilfoil (Source: Robert L. Johnson, Cornell University, www.Bugwood.org)

Aquatic Hitchhikers

- **Eurasian Watermilfoil**

  This aquatic plant can form dense mats that crowd out native vegetation and impede recreational activities. It has whorls of feather-like leaves consisting of 12 to 21 pairs of leaflets. This plant often is spread on boat motors and trailers.

Exotic & Nuisance Aquatic Species

- **Zebra Mussel**

  This fingernail-sized mussel filters high amounts of microorganisms (plankton) from the water column leaving less food available for native organisms such as larval fish. They can be transferred as microscopic larvae in standing water, or as juveniles and adults on boat hulls or aquatic plants.

Zebra Mussels (Source: Michigan Sea Grant)

Round Goby (Source: Michigan Sea Grant)

- **Round Goby**

  This bottom-dwelling fish was first introduced in the 1990s via ballast water of ships from Eurasia. In several areas of the Great Lakes, it has pushed out native fishes becoming the numerically dominant fish. Round gobies can be spread when adults are used as bait, and when eggs are transported on boat hulls. The goby can be easily identified by the fused fin on its belly.

Round Goby in a Gloved Hand (Source: Michigan Sea Grant)

Exotic & Nuisance Aquatic Species

- **Spiny Waterflea**

  This large (0.25 inch long) planktonic animal competes with native Daphnia and may alter plankton communities. Both adults and eggs can be spread in standing water.

Spiny Waterflea with egg sac (Source: J. Lindgren, Minnesota DNR)

Two bighead carp demonstrating a size comparison (Source: David Riecks, University of Illinois at Urbana-Champaign, Illinois-Indiana Sea Grant College Program)

- **Bighead Carp**

  This fish is invading the Mississippi River and its tributaries, where it competes for food directly with native mussels and fishes. It can be spread when anglers use juvenile bighead carp as bait. (Juvenile bighead carp closely resembles shad.) It can be identified by its large size, low eye, and partial keel on its belly.

- **Silver Carp**

  This fish is invading the Mississippi River and its tributaries, where it competes for food directly with native mussels and fishes. Silver carp jump out of the water when disturbed, posing a hazard to boaters. It can be identified by its large size, low eye, fully keeled belly and jumping ability.

Silver carp (Source: David Riecks, University of Illinois at Urbana-Champaign, Illinois-Indiana Sea Grant College Program)

Exotic & Nuisance Aquatic Species

Silver carp at a location in Missouri (Source: University of Missouri Extension)

- **Phragmites**

  Also known as common reed, phragmites can form dense impenetrable fence-like masses along lake and wetland edges. It tends to outcompete and eliminate other native wetland plant species and provides poor habitat for waterfowl and other native birds.

Phragmites

Purple loosestrife (Source: IDNR)

- **Purple Loosestrife**

  This perennial wetland plant can grow in dense stands that choke out native vegetation and reduce food and shelter for wildlife. It spreads primarily as seeds and is common along roadside ditches.

Gizzard Shad with lesions caused by viral hemorrhagic septicemia (Photo by Dr. Mohamed Faisal, Michigan State University)

- **Viral Hemorrhagic Septicemia (VHS)**

  VHS is a viral fish disease responsible for large scale mortalities of various fish species within the Great Lakes. It continues to spread throughout the Great Lakes Basin.

Gizzard Shad with lesions caused by VHS (Photo by Dr. Mohamed Faisal, Michigan State University)

Existing Federal and State Laws

The Indiana Department of Natural Resources has statutory responsibility for regulating the importation of fish (IC 14-22-25-2), possession of live exotic nuisance species of fish (312 IAC 9-6-7), and fish stocking (312 IAC 9-10-8). Listed fish are illegal to import, possess, or release into public waters without a permit. In addition, if a banned species is caught it is illegal to release the fish alive. A permit is required before beginning aquaculture activities (IC 14-22-27). Pests or pathogens that are considered harmful can be restricted or eliminated (IC 14-24-2-5) and can include arthropods, mollusks, or exotic weeds (IC 14-8-2-203). Additionally, a person may not take mussels or mussel shells from waters of the state without possessing a license (IC 14-22-17).

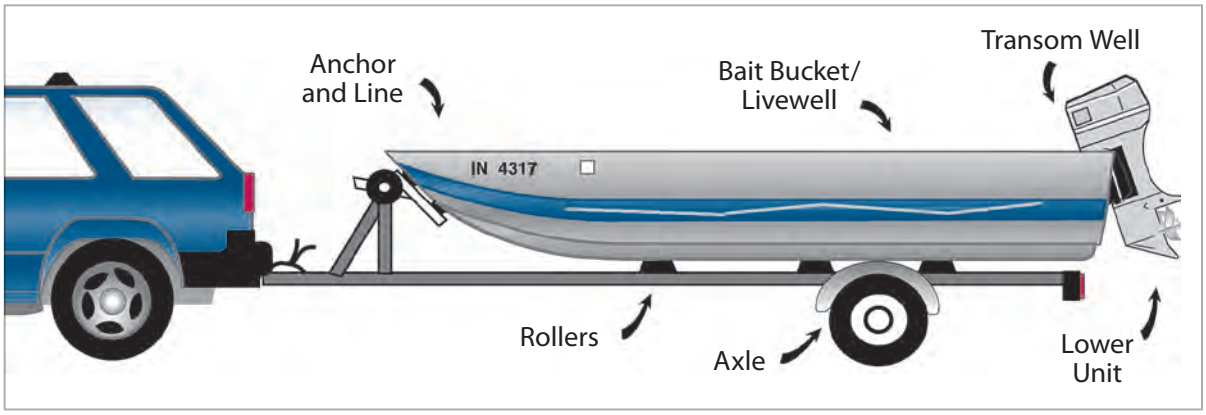
Zebra Mussel (Source: Michigan Sea Grant)

Best Management Practices for Boaters

These and other invasive species can be accidentally spread by boaters who travel from infested to uninfested waters. Some species can be picked up on boating equipment including boats, trailers, motors, tackle, downriggers, anchors, axles, rollers, and centerboards. Others can be carried in water of livewells, bait buckets, motors, bilges and transom wells. Even a small piece of Eurasian watermilfoil attached to an anchor or a handful of zebra mussels in a bait bucket can lead to an invasion if introduced into an uninfested waterway. Boaters can help prevent this from happening. To avoid spreading invasive species, follow the steps on page 76 before transporting marine craft to another waterway.

Before Leaving the Boat Launch

- Inspect boats, trailers and equipment and remove any plants, sediment, and animals (see illustration below).
- Drain, on land, all water from the motor, livewell, bilge and transom well. Some invasives may not be visible to the naked eye.
- Empty your bait bucket on land to help prevent the spread of invasive species and fish diseases.



Source: Minnesota Department of Natural Resources

After Leaving the Boat Launch

- Wash boats, tackle, trailers and other equipment to kill any exotic species not visible at the boat launch. This can be done with 104° tap water or a high-pressure sprayer. Or, you should dry all equipment for at least five days before moving to another body of water—some invasives can survive for long periods of time out of water.
- If you have used your watercraft on the Great Lakes, where a fish disease called viral hemorrhagic septicemia has spread, disinfect the outside and inside of your watercraft and your gear after using them. Mix 1 cup bleach in 10 gallons of water and brush/mop boat and trailer surfaces. Test dilute bleach solution in an inconspicuous location prior to applying to the entire watercraft and trailer. Keep the surface wet for five minutes, then rinse with clean water. Disinfection should occur away from lakes and rivers because chlorine is toxic to aquatic life.
- Learn what these organisms look like and know which waterways are infested. Report any new infestation to the Illinois-Indiana Sea Grant or the Indiana Department of Natural Resources.

Exotic & Nuisance Aquatic Species

- Help prevent the spread of invasive species and fish diseases by not transferring fish, fish eggs or other aquatic organisms between waterways. Private pond owners who fish on Indiana waters or another state's waters would also benefit from the same advice.
- Talk with the Indiana Department of Natural Resources' Division of Fish and Wildlife at (317) 232-4080 and the Illinois-Indiana Sea Grant at (847) 872-8677 for further recommendations on controlling the spread of aquatic invasive species and any permit requirements before applying any control methods.

Best Management Practices for Marina Owners/Operators

- Use approved herbicide treatments to control purple loosestrife and phragmites;
- Actively distribute aquatic invasive species information to patrons;
- Prominently display aquatic and invasive species prevention signage at boat ramps;
- Provide power washing facility for patrons to use; and
- Implement controls on submersed aquatic invasive species plants within marina basin.

By following these simple steps, both marina owners/operators and boaters can help protect our waters from aquatic invasive species and ensure that our aquatic resources remain enjoyable for future generations.

Close up of zebra mussels on a stick (Source: S. van Mechelen, University of Amsterdam, The Netherlands)

For More Information

Preventing the spread of aquatic invasive species: www.protectyourwaters.org

Invasive species: www.IN.gov/dnr/3123.htm

Illinois-Indiana Sea Grant: www.iisgcp.org or call (847) 872-8677

Appendix L – (pages 193-196) Additional Contact Information

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Appendix A

Indiana Clean Boater Pledge

This pledge is for recreational boaters who actively use best management practices to protect Indiana's aquatic resources and who encourage their passengers and other boaters to do the same.

A Good Idea!

Participating boaters will receive an Indiana Clean Boater sticker and be authorized to prominently display it on their watercraft.

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INDIANA CLEAN BOATER PLEDGE

State Form 53581 (4-08)

Indiana Department of Environmental Management
Clean Marinas Program Coordinator
330 West U.S. Highway 30, Suite F
Valparaiso, IN 46385
Telephone: (219) 464-0419

INSTRUCTIONS: 1. Read and complete this form.
2. Mail the completed form to the above address.

As a recreational boater supportive of the Indiana Clean Marina Program, I pledge to be a steward of Indiana's waters. I will read the clean boater tip sheets and use the best management practices recommended therein to protect our aquatic resources. I will further ensure that all passengers aboard my watercraft follow these best management practices, and I will encourage other boaters to be stewards of Indiana's waters as well. For this pledge, I will receive and be authorized to prominently display an Indiana Clean Boater sticker on my watercraft.

As an Indiana Clean Boater, I pledge to:

- Keep our waters free of litter;
- Practice proper watercraft fueling;
- Help prevent the spread of aquatic invasive species;
- Recycle when possible;
- Maintain my watercraft in an environmentally-sensitive manner;
- Not operate my watercraft in sensitive, shallow water habitat areas; and
- Lead by example.

Printed Name of Recreational Boater		
Address *(number and street)*		
City	State	ZIP Code
Signature of Recreational Boater	Date *(month, day, year)*	
Telephone Number	E-mail Address	

Indiana Department of Environmental Management

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Appendix B

Indiana Clean Marina Pledge

This pledge is for marina/boatyard owners and managers who actively use best management practices to protect Indiana's aquatic resources and who encourage their customers to do the same. The pledge represents their commitment to become a designated Indiana Clean Marina within a one-year time period.

A Good Idea!

Participating marinas that meet the criteria to become designated as an Indiana Clean Marina will receive an Indiana Clean Marina Program flag and be authorized to prominently display it at their facility (see pages 15-18).

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INDIANA CLEAN MARINA PLEDGE

State Form 53582 (4-08)

Indiana Department of Environmental Management
Clean Marinas Program Coordinator
330 West U.S. Highway 30, Suite F
Valparaiso, IN 46385
Telephone: (219) 464-0419

INSTRUCTIONS:
1. Read and complete this form.
2. Mail the completed form to the above address.

The Indiana Clean Marina Program promotes and celebrates voluntary adoption of measures to prevent nonpoint source pollution from marinas and recreational boating and to prevent the spread of aquatic invasive species. Designated "Clean Marinas" are recognized as environmentally-responsible businesses.

As the first step toward achieving Clean Marina status and on behalf of:

Name of Marina or Boatyard		
Address *(number and street)*		
City	State	ZIP Code

I pledge to do my part to keep Indiana's waterways free of harmful chemicals, excess nutrients, and debris, and to implement practices that prevent the spread of aquatic invasive species. I will identify opportunities and implement practices to control nonpoint source pollution associated with:

- Storm Water Run-Off;
- Fueling Stations;
- Sewage Facilities;
- Solid Waste;
- Fish Waste;
- Liquid Materials;
- Petroleum Control;
- Boat Cleaning; and
- Boat Operation.

I commit to actively pursue full standing as an Indiana Clean Marina. Within one year of the date below, I will implement appropriate environmental stewardship practices and will apply to the Indiana Clean Marina Program for recognition as an Indiana Clean Marina.

Printed Name of Marina or Boatyard Owner		Date *(month, day, year)*
Signature of Marina or Boatyard Owner	Telephone Number	E-mail Address

Printed Name of Marina or Boatyard Manager		Date *(month, day, year)*
Signature of Marina or Boatyard Manager	Telephone Number	E-mail Address

Indiana Department of Environmental Management

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Appendix C

Indiana Clean Marina Program Designation Checklist

The following assessment checklist can be used by marina/boatyard owners and managers to determine if their facility qualifies for Indiana Clean Marina status.

A Good Idea!

The Clean Marina Program Coordinator of the Indiana Department of Environmental Management is available to answer questions and provide technical assistance to help Indiana marinas achieve Clean Marina status. The telephone number is (219) 464-0419

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INDIANA CLEAN MARINA PROGRAM DESIGNATION CHECKLIST

State Form 53567 (4-08)

Indiana Department of Environmental Management
Clean Marinas Program Coordinator
330 West U.S. Highway 30, Suite F
Valparaiso, IN 46385
Telephone: (219) 464-0419

INSTRUCTIONS:

1. Use this checklist to conduct a self assessment of your facility and determine if your marina qualifies for Indiana Clean Marina status. The checklist and page numbers referenced with each question correspond to the *Indiana Clean Marina Guidebook* available at www.IN.gov/dnr/naturepreserve/4747.htm. Please refer to the guidebook as you answer the questions in the checklist.

2. Fill in the information requested below. Then proceed to pages 2-13. Each best management practice (BMP) is assigned a numeric value depending on environmental impact. No points are awarded for BMPs required by regulation or law. Some questions do not have a numeric value because they are lead-in questions for related questions that follow. For each question, determine if your facility is currently implementing that BMP. If the answer is yes, write down the available points for that BMP in the "Yes" column. If the answer is no, place a check in the "No" column for that BMP. The "Not Applicable" column is provided so options that do not apply to your marina will not count against you during scoring. For BMPs that do not apply to your marina, write down the available points for that BMP in the "Not Applicable" column. Sum up the points awarded under the "Yes" and "Not Applicable" columns. Record these values in the spaces provided for "Awarded Points" and "Not Applicable Points" at the end of each section (e.g., Storm Water Run-Off) and also in the Point Summary on page 13.

Numeric Values for Best Management Practices		
0	=	Required by regulation or law
1	=	Low direct impact in maintaining water quality
3	=	Moderate impact in maintaining water quality
5	=	High impact in maintaining water quality

3. Complete the "Comments" section on pages 12-13 if you need to explain any answers or request clarification for any particular best management practice. Please reference the question number.

4. Use the equation at the bottom of page 13 to calculate your cumulative score. Then call the Indiana Department of Environmental Management Clean Marinas Program Coordinator at (219) 464-0419 to discuss your results.

NOTE: If you previously qualified for "Clean Marina" status and are currently applying for your annual redesignation, place a check in the "New Best Management Practice?" column for any new best management practices you have added since your previous designation. Mail a copy of the updated checklist and a letter stating your marina still meets the requirements included in the checklist to the above address.

Name of Facility		
Type of Facility ☐ Marina (no boatyard) ☐ Marina (with boatyard) ☐ Other (e.g., boatyard)		
Name of Owner or Manager		
Address *(number and street)*		
City	State	ZIP Code
Telephone Number	E-mail Address	

Indiana Department of Environmental Management

Indiana Clean Marina Program Designation Checklist					
Storm Water Run-Off	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
1. Permits are required for Standard Industrial Code (SIC) 3732 and some SIC 4493 marinas. If your marina meets these requirements, do you have a National Pollutant Discharge Elimination System permit? See pages 33-38*.	0				
2. Do you allow boat hull maintenance at your marina? This includes services conducted by marina staff, outside contractors, and patrons. You cannot answer "Not Applicable." If "No," proceed to question 12.	No numeric value				
3. Do you have designated boat hull maintenance areas away from the water's edge or within a building? See pages 33-38*.	5				
4. Are these areas marked with signage or identified in marina rules for patron usage? See pages 33-38*.	1				
5. Are these areas located on impervious surfaces such as concrete or asphalt? See pages 33-38*.	3				
6. If work areas cannot be located indoors or on impervious surfaces, do you require the use of a tarp? See pages 33-38*.	1				
7. Do you offer/provide tarps to patrons for hull maintenance? See pages 33-38*.	1				

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Indiana Clean Marina Program Designation Checklist					
Storm Water Run-Off (continued)	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
8. Do you require enclosed spray booths or tarps for sand blasting and sanding that is done outdoors? See pages 33-38*.	3				
9. Do you offer/provide sanders equipped with vacuums to collect hull paint sandings? See pages 33-38*.	3				
10. Do you have a regular maintenance schedule to clean hull maintenance areas? See pages 33-38*.	3				
11. Do you provide patrons and contractors with a list of "yard rules?" See pages 33-38*.	1				
12. Do you have vegetated buffers between impervious surfaces and the marina basin? See pages 33-38*.	3				
13. Do you direct run-off from roofs or other impervious surfaces into vegetated areas? See pages 33-38*.	3				
14. Do you have any mechanical or treatment devices that treat storm water (e.g., filters, oil/water separators, etc.)? See pages 33-38*.	3				
15. Do you have practices in place to control pet waste? See page 47*.	5				
16. Do you discourage patrons from feeding geese, ducks, and sea-gulls at the marina? See page 48*.	5				
	Available Points	**Awarded Points**		**Not Applicable Points**	
	40				

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Indiana Clean Marina Program Designation Checklist					
Fueling Stations	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
17. A marina that has the capacity to store greater than an aggregate of 1,320 gallons of petroleum above ground or more than 42,000 gallons underground is required to have a spill prevention, control, and countermeasure (SPCC) plan. If your marina falls under these guidelines, do you have an SPCC plan? See pages 111-114*.	0				
18. If you are not legally required to have an SPCC plan under these guidelines, do you still have an SPCC plan or similar plan in place? See pages 111-114*.	5				
19. Are your fueling stations situated in such a way that an accidental spill can be easily contained? See pages 39-42*.	3				
20. Do you train staff in spill prevention, containment, and cleanup procedures? See pages 39-42*.	5				
21. Do you have spill containment equipment available at fuel docks? See pages 39-42*.	5				
22. Do you have oil absorbent pads available at the fuel dock to clean up small drips and spills? See pages 39-42*.	3				
23. Do you have special fueling docks for personal watercraft to help drivers refuel without spilling? See pages 39-42*.	5				

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Indiana Clean Marina Program Designation Checklist					
Fueling Stations (continued)	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
24. Do you require boaters fueling personal watercraft or other vessels at your marina to use a designated fueling station or upland location away from the water? See pages 39-42*.	3				
25. Do you regularly inspect, maintain, and replace fuel hoses, pipes and tanks for fueling stations as necessary? See pages 39-42*.	0				
26. Do you have signs at the fuel dock that explain how to prevent spills while fueling as well as spill reporting procedures? See pages 39-42*.	1				
	Available Points	**Awarded Points**		**Not Applicable Points**	
	30				

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Indiana Clean Marina Program Designation Checklist					
Sewage Facilities	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
27. A marina located on the state's navigable waters that can accommodate boats equipped with a marine sanitation device must provide pumpouts or enter into a binding agreement with another marina or similar facility along the waterway to provide pumpout services to your patrons. Can your marina accommodate boats equipped with marine sanitation devices? See pages 43-48*. You cannot answer "Not Applicable." If "Yes," please proceed to question 28. If "No," please proceed to question 33. If you are not legally required to implement this measure but are doing so, proceed to question 28.	0				
28. Do you have pumpout or dump stations available at your marina or a contractual agreement with another marina to provide these services to your patrons even though you are not legally required to? See pages 43-48*.	5				
29. Are the station locations well marked by signage and instructions for correct operation posted? See pages 43-48*.	1				
30. Does marina staff assist boaters with pumpout operation? See pages 43-48*.	3				
31. Do you have a regular maintenance schedule to keep pumpout stations clean and in service? See pages 43-48*.	5				

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Indiana Clean Marina Program Designation Checklist

Sewage Facilities (continued)	Available Points	Yes	No	Not Applicable	New Best Management Practice?
32. Do you keep log sheets of pumpout station maintenance? See pages 43-48*.	5				
33. Do you provide clean, well-maintained public restrooms that are in convenient locations and well marked? See pages 43-48*.	5				

Available Points	Awarded Points		Not Applicable Points
24			

Solid Waste	Available Points	Yes	No	Not Applicable	New Best Management Practice?
34. Do you provide trash receptacles in convenient locations for marina patrons? See pages 49-52*.	5				
35. Are the trash receptacles covered? See pages 49-52*.	3				
36. Are the trash receptacles inspected daily? See pages 49-52*.	3				
37. Do you have recycling facilities available for marina patrons? See pages 49-52*.	3				
38. Do you recycle winter storage shrink wrap? See pages 49-52*.	3				
39. Do you promote used fishing line collection or recycling? See pages 49-52*.	3				

Available Points	Awarded Points		Not Applicable Points
20			

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Indiana Clean Marina Program Designation Checklist					
Fish Waste	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
40. Do you allow fish cleaning at the marina? You cannot answer "Not Applicable." If "No," proceed to question 44.	No numeric value				
41. Do you prohibit boaters from disposing fish waste in the marina basin? See pages 53-54*.	0				
42. Do you prohibit boaters from cleaning fish at the docks? See pages 53-54*.	3				
43. Do you have a designated fish cleaning station that is clearly marked? See pages 53-54*.	5				
	Available Points	**Awarded Points**		**Not Applicable Points**	
	8				

Liquid Materials	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
44. Do you allow boat maintenance (such as, but not limited to, changing of oil, antifreeze, etc.) at your marina? This includes services conducted by marina staff, outside contractors, and patrons. You cannot answer "Not Applicable." If "Yes," please continue to question 45. If "No," proceed to question 50.	No numeric value				
45. Do you have an emergency spill response plan? See pages 115-123*.	5				

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Indiana Clean Marina Program Designation Checklist					
Liquid Materials (continued)	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
46. Do you train employees in spill response? See pages 115-123*.	5				
47. Do you have and maintain appropriate storage areas for materials such as antifreeze, solvents, oil, and paints? See pages 55-57*.	5				
48. Do you recycle liquid materials? See pages 55-57*.	3				
49. Do you provide educational material to patrons and contractors, if applicable, on proper disposal of liquid materials? See pages 55-57*.	3				
	Available Points	**Awarded Points**		**Not Applicable Points**	
	21				

Petroleum Control	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
50. Do you prohibit the use of detergents to dissipate fuel spills on the water? See pages 59-60*.	3				
51. Do you provide educational materials to patrons that promote engine and bilge maintenance? See Appendix K on page 175*.	3				
	Available Points	**Awarded Points**		**Not Applicable Points**	
	6				

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Indiana Clean Marina Program Designation Checklist					
Boat Cleaning	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
52. Do you provide educational materials to patrons that promote environmentally-friendly boat cleaning practices? See pages 61-64*.	3				
53. Under the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit Program defines boat wash water as "processed water." Discharge of any processed water by a marina or boatyard is illegal nationwide without a formal permit from U.S. EPA or a state government. This permit requirement does not apply to boat owners who are cleaning their own boats, but it does apply to anyone who professionally cleans boats in a marina. If your marina meets these requirements, do you have an NPDES permit? See pages 61-64*.	0				
54. Do you have measures in place that reduce or prevent wastewater from pressure washing from entering waterways? See pages 61-64*.	5				
	Available Points	**Awarded Points**		**Not Applicable Points**	
	8				

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Indiana Clean Marina Program Designation Checklist					
Public Education	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
55. Do you post signs or utilize bulletins that address the best management practices outlined in the Indiana Clean Marina Guidebook to promote environmentally-friendly boating practices? See pages 65-68*.	3				
56. Do you actively distribute pamphlets, newsletters, or billing inserts to promote environmentally-friendly boating practices? See pages 65-68*.	3				
57. Do you provide educational materials and documented training opportunities to marina employees that promote environmentally-conscious work habits? See pages 65-68*.	5				
58. Do you insert language in marina contracts that promote compliance with marina best management practices? See pages 171-174*.	5				
59. Do you have best management practice agreements for outside contractors? See pages 171-174*.	5				
60. Are your storm drains marked with a "Dump No Waste" type message? See pages 65-68*.	5				
	Available Points	**Awarded Points**		**Not Applicable Points**	
	26				

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Indiana Clean Marina Program Designation Checklist					
Boat Operation	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
61. Do you have any areas that are considered "no boating" or "no wake" zones or other restrictions to reduce sediment suspension from prop wash or destruction of shallow water habitat? See pages 69-70*.	5				
	Available Points	**Awarded Points**		**Not Applicable Points**	
	5				

Exotic & Nuisance Aquatic Species	**Available Points**	**Yes**	**No**	**Not Applicable**	**New Best Management Practice?**
62. Do you post signs or utilize bulletins to promote best management practices that can reduce the spread of aquatic invasive species? See pages 71-77*.	5				
63. Do you distribute pamphlets, newsletters, or billing inserts to promote best management practices that can reduce the spread of aquatic invasive species? See pages 71-77*.	5				
	Available Points	**Awarded Points**		**Not Applicable Points**	
	10				

Comments

* ***Indiana Clean Marina Guidebook***
www.IN.gov/dnr/naturepreserve/4839.htm

Comments (continued)

Point Summary			
	Available Points	**Awarded Points**	**Not Applicable Points**
Storm Water Run-Off	40		
Fueling Stations	30		
Sewage Facilities	24		
Solid Waste	20		
Fish Waste	8		
Liquid Materials	21		
Petroleum Control	6		
Boat Cleaning	8		
Public Education	26		
Boat Operation	5		
Exotic & Nuisance Aquatic Species	10		
	Total Available Points	**Total Awarded Points**	**Total Not Applicable Points**
	198		

Equation for Calculating Your Cumulative Score

$$\frac{\text{Total Awarded Points}}{\text{(Total Available Points – Total Not Applicable Points)}} = \_\_\_\_\_$$

Multiply by 100 = _____

Cumulative Score: _____

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Appendices D – J

Appendix D

Complying with the Hazardous Waste Rules..... 105

Appendix E

Spill Prevention, Control & Countermeasure Plans 111

Appendix F

Emergency Preparedness & Spill Response 115

Appendix G

Hazardous Waste Streams..... 125

Appendix H

Hazardous Waste Generator Status & How the Rules Apply to You.....159

Appendix I

Selecting a Waste Transporter & Recycling/Waste Management Company..... 163

Appendix J

Sample Contract Language..... 171

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Appendix D

Complying with the Hazardous Waste Rules

The Indiana Department of Environmental Management and the United States Environmental Protection Agency have created regulations that are designed to ensure that the generation, transportation, treatment, and disposal of hazardous wastes are conducted in a manner that protects human health and the environment.

This guidance will assist you in determining if you generate hazardous wastes and how to comply with the regulations as they apply to your operations.

Products that you purchase for use at your marina may contain hazardous materials. Hazardous materials are chemicals that are dangerous to human health and the environment. When these products are no longer of use to you and are being disposed of, they become hazardous wastes that may be regulated by IDEM and/or U.S. EPA.

Storage cabinets may contain hazardous materials.

In determining if the wastes you generate need to be managed as hazardous wastes, you will need to take the following into consideration.

- Is the material hazardous as defined by the Resource Conservation and Recovery Act (RCRA) under Title 40, Parts 260-262, of the Code of Federal Regulations (40 CFR 260-262)?
- What is your facility's generator status?
- Which regulations are you required to comply with, based on your generator status and the type and source of your waste material?

What is a Hazardous Waste?

There are a few steps that you must take in determining if your wastes are hazardous. You must first determine if what you generate is a "solid waste." For a waste to be hazardous it must first be a solid waste. A solid waste is defined as any material that will no longer be used for its original purpose or a material that must be reclaimed before reuse. Solid wastes can be solid, liquid or gas. You will need to look at the wastes you generate (e.g., oil, antifreeze, gasoline, solvents, cleaners, etc.) and determine whether they are solid wastes.

If you find that some of the wastes you generate meet the definition of a solid waste, then you need to see if they meet any of the definitions of a hazardous waste. Wastes can be hazardous if they are either defined by RCRA as a listed or characteristic waste, or if they are a mixture of a listed hazardous waste and other wastes.

Exempt Solid Wastes

Certain solid wastes, such as used oil destined for recycling, are excluded from the hazardous waste rules. Household wastes are also exempt. The exemptions to the hazardous waste regulations can be found at 40 CFR 261.4 and 261.6–261.9.

RCRA Has Four Lists of Hazardous Wastes

- **F-listed waste** (40 CFR 261.31):
  These wastes are generated from non-specific sources but were created from a specific activity. Marinas might generate one of the first five F-listed wastes, F001- F005, which deal with solvents used in cleaning and degreasing.
- **P- and U-listed wastes** (40 CFR 261.33):
  P- and U-listed wastes are discarded or unused commercial chemical products, off-specification products, container residues and spill residues. Marinas may generate a P- or U-listed waste when disposing of unused solvents, algaecides or other toxic chemicals.
- **K-listed wastes** (40 CFR261.32):
  K-listed wastes are generated from specific sources and from specific activities. It is very unlikely a marina would generate a K-listed waste.

If your waste is not a listed waste, you must then determine if your waste is characteristically hazardous. RCRA has defined four characteristics of hazardous wastes. You must conduct waste sampling and analysis, or apply generator knowledge of the process and of the materials used to produce the waste to determine if it exhibits any of the following four characteristics.

Ignitability

Corrosivity

Reactivity

Toxicity

Four Characteristics of Hazardous Wastes

Ignitability

A waste is ignitable if it is:

- A liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has a flash point of less than 60°C (140°F).
- Not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.
- An ignitable compressed gas as defined in 40 CFR 261.21 (a)(3).
- An oxidizer as defined in 40 CFR 261.21 (a)(4), such as chlorates, permanganates, inorganic peroxides or nitrates that yield oxygen readily to stimulate the combustion of organic matter.

RCRA classifies wastes that are ignitable as D001. Marinas may produce a D001 waste with disposal of paints, solvents, cleaner (flashpoint) chemicals such as nitrates, permanganates used as cleaner or in water treatment (oxidizer), or cylinders used for welding (compressed gas).

Corrosivity

A waste is corrosive if it is:

- Aqueous and has a pH of >12.5 (alkaline) or <2 (acidic).
- A liquid and corrodes steel at a rate of more than one-fourth inch per year.

RCRA classifies wastes that are corrosive as D002. Marinas may produce a D002 waste with disposal of nonsolvent-based cleaners and paint strippers, water treatment chemicals and general cleaners and disinfectants.

Reactivity

A waste is reactive if:

- It is normally unstable and readily undergoes violent change without detonating;
- It reacts violently with water;
- It forms potentially explosive mixtures with water;
- When mixed with water, it generates toxic gases, vapors or fumes of a quantity sufficient to present a danger to human health or the environment;
- It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors, and fumes in a quantity sufficient to present a danger to human health or the environment;
- It is readily capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;

Reactivity (continued)

- It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure; or
- It is a forbidden explosive as defined in 49 CFR 173.51, a Class A explosive as defined in 49 CFR 173.53, or a Class B explosive as defined in 49 CFR 173.88.

A solid waste that exhibits the characteristic of reactivity has U.S. EPA Hazardous Waste Number D003. Potential D003 waste streams that a marina could produce would be in the disposal of out-of-date chemicals for water treatment.

Toxicity

Toxic wastes are harmful or fatal when ingested or absorbed. When toxic wastes are disposed on land, contaminants may leach from the waste and pollute ground water or surface waters. Toxicity characteristic wastes are identified by concentration levels of contaminants that may be harmful to human health or the environment. This characteristic only identifies wastes which contain certain specified contaminants. Other toxic wastes are identified by listing them in the regulations.

RCRA classifies wastes that are toxic as D004 through D043 with each characteristic having its own waste code (see table below and on page 109).

Characteristic Wastes and Their U.S. EPA Hazardous Waste Numbers

Heavy Metals	Pesticides	Organics
Arsenic (D004)	Chlordane (D020)	Benzene (D018)
Barium (D005)	Endrin (D012)	Carbon Tetrachloride (D019)
Cadmium (D006)	Heptachlor (D031)	Chlorobenzene (D021)
Chromium (D007)	Lindane (D013)	Chloroform (D022)
Lead (D008)	Methoxychlor (D014)	Cresols, o- (D023)
Mercury (D009)	Toxaphene (D015)	Cresols, m- (D024)
Selenium (D010)	2,4-D (D016)	Cresols, p- (D025)
Silver (D011)	2,4,5-TP [Silvex] (D017)	Cresols (D026)
		1,4- Dichlorobenzene (D027)
		1,2- Dichloroethane (D028)
		1,1- Dichloroethylene (D029)

Characteristic Wastes and Their U.S. EPA Hazardous Waste Numbers (continued)		
Heavy Metals	**Pesticides**	**Organics**
		2,4- Dinitrotoluene (D030)
		Hexachlorobenzene (D032)
		Hexachlorobutadiene (D033)
		Hexachloroethane (D034)
		Methyl Ethyl Ketone (D035)
		Nitrobenzene (D036)
		Pentachlorophenol (D037)
		Pyridine (D038)
		Tetrachloroethylene (D039)
		Trichloroethylene (D040)
		2,4,5-Trichlorophenol (D041)
		2,4,6-Trichlorophenol (D042)
		Vinyl Chloride (D043)

Mixing Wastes

If you mix your listed hazardous wastes with other characteristic wastes or other nonhazardous solids wastes, the entire mixture would become a listed hazardous waste. For this reason, it is very important to keep wastes segregated. Not only is it better for the environment, but it will help keep disposal costs as low as possible.

In determining if your waste is hazardous you may use generator knowledge and/or waste stream analysis. Material safety data sheets will help you determine what type of contaminants could be present. Sometimes after the chemical is used, it could be contaminated with other materials. It would then probably be more accurate to have the waste stream tested. Additional information on making a hazardous waste determination and other resources on the proper management of hazardous wastes are available on IDEM's website at www.idem.IN.gov/cleanmarina.

Universal Wastes

Daily operations in the marina could also generate universal wastes. Universal wastes include nickel cadmium batteries, small sealed lead acid batteries, agricultural pesticides, mercury-containing devices (e.g., thermostats, barometers, and gauges), and lamps from electric lighting devices (e.g., fluorescent, high-intensity discharge, neon, mercury vapor, high-pressure sodium, and metal halide lamps). Universal wastes have fewer waste management rules that apply to them. For more information about the generation, storage, transportation, disposal and recycling of universal wastes, refer to IDEM's guidance document entitled "Universal Waste Rule" available on IDEM's website at www.IN.gov/idem/5026.htm.

Keep in mind that it is your responsibility to ensure that a proper hazardous waste determination is made for each solid waste. If you hire a consultant to perform waste determination activities, the facility is still liable for any incorrect determinations that may be made.

Appendix E

Spill Prevention, Control & Countermeasure Plans

This well-marked spill equipment containment unit is for bigger spills and is housed in a mobile trailer that can be transported to the spill site. Smaller spill equipment containment units should be adjacent to the fuel dock, easily accessible and well marked.

The federal Clean Water Act requires facilities that store any kind of oil in certain volumes to prepare and implement spill prevention, control, and countermeasure (SPCC) plans to prevent the discharge of oil from a facility into navigable waters or adjoining shorelines. SPCC plans require that your facility have adequate containment, such as berms and dikes around aboveground fuel tanks, to protect the soil and water in the event of a spill (40 CFR 112.1). SPCC plans are federal requirements administered by the U.S. Environmental Protection Agency (U.S. EPA).

Does Your Marina Require an SPCC Plan?

Your facility needs to develop an SPCC plan if it does any of the following:

- Stores oil above ground in any size tank(s) with a total aggregate volume over 1,320 gallons (containers of less than 55 gallons and/or permanently closed storage tanks are exempt from the total); or
- Stores oil below ground in any size tank(s) with at total aggregate volume of 42,000 gallons (except for tanks that are compliant with the state requirement for underground storage tanks); and
- Could reasonably be expected to discharge oil to a "navigable water of the United States" or "adjoining shorelines" considering a possible worst-case scenario. (This criterion applies to just about every marina in the state, since a facility cannot take into consideration any manmade impediments to the flow of oil.)

NOTE: "Oil" is defined in Section 311(a)(1) of the Clean Water Act as "oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil." The U.S. EPA interprets this definition to include crude oil, petroleum, and petroleum-refined products, as well as non-petroleum oils such as vegetable and animal oils.

NOTE: "Navigable waters" are defined in 40 CFR 112.2 of the Oil Pollution Act to include all navigable waters of the United States, as defined in judicial decisions prior to passage of the 1972

amendments to the Federal Water Pollution Control Act (Public Law 92-500), and tributaries of such waters; interstate waters; intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.

Do You Also Need a Facility Response Plan?

Onshore facilities that, because of their location, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines shall prepare and submit a facility response plan to the regional administrator of U.S. EPA's Region 5 in accordance with 40 CFR 112.20.

Facilities should complete the Substantial Harm Criteria Certification found in Appendix C of 40 CFR 112 to determine if their facility would be subject to applicability of the substantial harm criteria.

What is an SPCC Plan?

An SPCC plan outlines a facility's oil containment systems and procedures to prevent an oil spill. It also outlines oil spill response and cleanup protocols. Each SPCC plan is site specific, but must address the following:

- Operating procedures that prevent oil spills;
- Control measures installed to prevent a spill from reaching the environment; and
- Countermeasures to contain, clean up, and mitigate the effects of an oil spill that reaches the environment.

Who Writes an SPCC Plan?

Preparation of the SPCC plan is the responsibility of the facility owner or operator, who may also be eligible to self-certify the SPCC plan if the facility meets the following eligibility criteria for a qualified facility:

1. Total above ground oil storage capacity of 10,000 U.S. gallons or less; and
2. In the three years prior to the date the SPCC plan is certified, the facility has had no single discharge of oil to navigable waters or adjoining shorelines exceeding 1,000 U.S. gallons, or no two discharges of oil to navigable waters or adjoining shorelines each exceeding 42 U.S. gallons within any 12-month period.

If the facility does not meet the above criteria, the SPCC plan must be certified by a licensed professional engineer (PE). By certifying the SPCC plan, the PE confirms that:

1. He is familiar with the requirements of the rule;
2. He or an agent has visited and examined the facility;

3. The SPCC plan has been prepared in accordance with good engineering practices, including consideration of applicable industry standards, and with the requirements of the rule;
4. Procedures for required inspections and testing have been established; and
5. The SPCC plan is adequate for the facility.

When self-certifying a facility's SPCC plan, the owner/operator makes a similar statement. See Section 112.6 of the rule for other qualified facility SPCC plan requirements.

Is There a Particular Form or Format for the SPCC Plan?

The U.S. EPA does not expect any two plans to look alike. However, at a minimum, all plans must include:

- Facility layout and drainage patterns;
- List of all oil storage tanks and areas;
- Quantities of oil that could be released, with predicted path of flow and flow rate;
- Procedures for receiving oil from the supplier, transfer of oil within the facility, end point uses of the oil, and waste oil disposal;
- Effects of a spill at the facility, fire hazards, employee evacuation, customer/neighbor considerations, press relations;
- Capacity of required secondary containment devices;
- Clean-up procedures, including use of in-house staff versus contractors;
- Notification list (i.e., name(s) and phone numbers of in-house management, remote management, fire and police, municipal, state and federal agencies requiring notification);
- Facility security for prevention of internal sabotage and external vandalism;
- Employee training for spill prevention, oil handling, and spill clean-up; and
- Occupational Safety and Health Administration considerations.

Where Should the SPCC Plan be Located?

REQUIRED: A copy of the SPCC plan must be maintained at any facility manned at least four hours per day. For remote locations, the SPCC plan should be filed at the nearest field office. A copy does not have to be filed with the U.S. EPA or any other agency unless it is a condition of a permit or license held by the facility. However, the SPCC plan must be available during normal business hours for review by a U.S. EPA inspector. The U.S. EPA requires that facilities submit a copy of the SPCC plan to U.S. EPA Region V if a single spill of greater than 1,000 gallons occurs or if two discharges of 42 gallons or more occurs within one year. All employees must be made aware of the SPCC plan. It is highly recommended that you post copies of the plan in plain view at oil storage locations.

Does an SPCC Plan Need to be Reviewed and/or Updated?

The plan has to be reviewed at least once every five years. You must keep records of these reviews. An example of such documentation is "I have completed review and evaluation of the SPCC plan for (name of facility) on (date), and will/will not amend the plan as a result (signature)."

The plan must be amended when:

- There are changes in facility design, construction, operation, or maintenance that materially affect the facility's potential for the discharge of oil; or
- There are two or more spills in 12 months or one spill of 1,000 gallons.

A registered professional engineer must certify only technical changes to the SPCC plan. Nontechnical amendments include personnel or contact information changes.

Who Cares if My Facility Does Not Have an SPCC Plan?

Company management cares if your facility does not have an SPCC plan. Having measures in place to prevent spills is cost effective, since spill cleanup can be costly. However, when a plan is in place, spill cleanup can be more efficient, more effective and less costly than if there is no course of action.

The U.S. EPA also cares if your facility does not have an SPCC plan. The penalty for failure to have an SPCC plan can be up to $27,500 per day of violation (up to a maximum of $137,500) if an administrative action is filed. The U.S. EPA performs random, unannounced inspections of facilities suspected of needing an SPCC plan.

If There is a Spill, For What Could I be Held Responsible?

- Removing the material from public property, including cleaning highways, waterways, storm drains, bridge abutments, etc.
- Removing the material from private property, such as boat hulls and parking lots.
- Paying for natural resources damages (lost parking receipts at public beaches; lost revenues from fishing licenses; replacing killed fish, shellfish, and waterfowl).
- Paying for lost livelihood wages of fisherman and shell fisherman, devaluation of property for sale and private suits.
- Civil penalty for spilling into a water of the United States.
- Criminal penalty if you fail to notify the federal authorities. State agencies and contractors have no responsibility to notify for you.

For More Information

Visit U.S. EPA's website at www.epa.gov/osweroe1/content/spcc for more information about the federal spill prevention, control and countermeasure program.

Appendix F

Emergency Preparedness & Spill Response

Accidents happen. The best way to lessen environmental impacts from spills and accidental releases is to be prepared.

Legal Requirements

Legal Requirements	
Spill Prevention, Control, and Countermeasure Plan	You need to prepare a spill prevention, control, and countermeasure plan which outlines a facility-wide plan to prevent and clean up oil and gasoline spills (Clean Water Act, 40 CFR 112) if your facility stores gas or oil: • In an aggregate total of 1,320 gallons or more (not including containers of less than 55 gallons); or • In underground storage tanks (USTs) with a total capacity greater than 42,000 gallons (unless the tanks are in compliance with the state requirements for USTs). For further information about spill prevention, control, and countermeasure plans, see Appendix E on pages 111-114.
Hazardous Waste Contingency Plan	A written hazardous waste contingency plan is required for large quantity generators. Specific information on this requirement can be found under 40 CFR 262.34 and 40 CFR 265 Subparts C and D. Small quantity generators need to comply with the emergency planning requirements found under 40 CFR 262.34(d)(5).
National Fire Protection Association (NFPA)	For marinas with service or filling stations, they must be managed in a manner to prevent spills, fires, and other dangers as required in NFPA's Automotive and Marine Service Station Code (NFPA 30A). These requirements are adopted locally. Check with your municipal fire marshal for local requirements.
Storage of Hazardous Materials	If you store materials in quantities above certain threshold amounts, you must report storage of that substance under the Emergency Planning and Community Right to Know Act of 1986 (see Appendix M on pages 197-202). Keep copies of material safety data sheets for all hazardous substances used at your facility.
Emergency Action Plan	If your facility has 10 or more employees, you must have a written emergency action plan. For marinas with 10 or fewer employees, this plan may be communicated verbally (29 CFR 1910.38).

Best Management Practices

Best Management Practices	
Assess Potential Hazards	Note areas with potential hazards—manmade (e.g., fuel spills, fires, etc.) or natural (e.g., severe weather). Identify high danger or impact areas.
Spill Response Kits	Store spill containment and control materials in locations close to areas identified as a potential hazard. The materials should be stored in containers that keep them clean and dry and the area should be well marked. Keep a list of equipment that is stored in each kit. The kits should be inspected on a set schedule and replenished immediately after use. The kits should contain: • Absorbent pads and booms (small and large); • Empty sandbags; • Sewer pipe plugs; • Dry absorbent; • Square end shovels*; • A curtain boom (long enough to span the mouth of the marina and to encircle the largest vessel in moorage); • A hoe*; • Drain covers; • Fire extinguishers; and • A copy of the facility's spill contingency plan. * Consider using nonsparking tools in areas where flammable liquids such as gasoline are stored.
Emergency Response Plan	Develop an emergency response plan that includes written procedures for addressing potential situations. Keep the plan in an accessible location. Update the plan as necessary (e.g., personnel, contact number changes, etc.). Review the emergency response plan with employees and train them in the use of response equipment. Share your emergency response plan with local emergency response groups (e.g., fire departments, hospitals, hazardous materials contractors).

Best Management Practices *(continued)*

Best Management Practices	

Emergency Response Plan (continued)	The emergency response plan should include:
	• A site plan of the facility showing pipes, valves, structures, roads, hydrants, docks, power and fuel shutoffs, telephones, spill kits and locations of hazardous materials; A description of the type, amount, location and potential hazards of stored materials;
	• Roles and responsibilities of staff members;
	• A copy of the facility's spill contingency plan (a description of preplanned actions to be taken, based on likely threats, and what equipment should be used);
	• Stipulations for each planned response, including when additional or outside resources should be deployed; and
	• A list of emergency response phone numbers (see the Emergency Response Phone Directory on pages 121-122), including:
	  • Fire and police
	  • Facility owner
	  • Harbor master
	  • Spill response contractor
	  • IDEM's Emergency Response Hotline
	  • National Response Center Hotline

Spill Contingency Plan	Develop a spill contingency plan even if you are not required by law. The spill contingency plan and emergency response plan can be combined into one document.
	The plan should include:
	• Potential spill sources;
	• A list of oil and hazardous materials kept in the area;
	• Prevention measures such as security, inspection, training, containment and equipment; and
	• Emergency procedures for spills, including:
	  • Contact information for entities who will initiate containment and cleanup; and
	  • Instructions on state and federal agencies to contact, the type of information to provide and when such notification is required (see table on pages 118-120).

Severe Weather Checklist	Develop an action checklist for severe weather. The checklist should include: • Prepare to reduce environmental risks by securing waterside sewage pumpouts, dump stations and dumpsters. • Remove or secure objects that could blow or wash away. • Consider shutting off and locking out fuel pumps and oil tanks.

Notification Requirements

Law	Potential Situations	Agencies to Notify & When Notification is Required
Water Quality Standards 327 IAC 2-6.1	• Spills that damage the waters of the state so as to cause death or acute injury or illness to humans or animals. • Spills from a facility that has been notified in writing by a water utility that it is located in a delineated public water supply wellhead protection area. • Spills that damage waters of the state. • Spills to surface waters. • Spills of hazardous substances or extremely hazardous substances when the amount spilled exceeds 100 pounds or the reportable quantity, whichever is less. • Spills of petroleum of such quantity as to cause a sheen upon the waters. • Spills of objectionable substances. • Spills to soil beyond the facility boundary. • Spills to soil within the facility boundary. • Any spill for which a spill response has not been done.	Call IDEM's Emergency Response Spill Reporting Hotline at (888) 233-7745 within 2 hours. Follow-up as required by agency.
Clean Water Act 40 CFR 110.6	Oil discharge (film/sheen/discoloration) to water surface or shoreline, or violation of water quality standards.	The person in charge of the vessel or facility should call the National Response Center (federal spill reporting) at (800) 424-8802 immediately. If not practical, then call the U.S. Environmental Protection Agency's Region 5 24-hour emergency hotline at (312) 353-2318 or the U.S. Coast Guard's Marine Safety Office in Louisville, Kentucky at (502) 582-6825. Follow-up is not required.

Notification Requirements *(continued)*

Law	Potential Situations	Agencies to Notify & When Notification is Required
Clean Water Act 40 CFR 117.21	Discharge of hazardous substance (equal to or above the reportable quantity).	The person in charge of the vessel or facility should call the appropriate government agency immediately. Follow-up is not required.
Clean Water Act 40 CFR 122.41	Noncompliance which may endanger health and environment (above permit allowance).	The permittee should call the appropriate government agency within 24 hours. Follow-up is required in five days.
Comprehensive Environmental, Response, Compensation, and Liability Act 40 CFR 302.6(a)	Hazardous substance release (equal to or greater than the reportable quantity).	The person in charge of the vessel or facility should call the National Response Center (federal spill reporting) at (800) 424-8802 within fifteen minutes. Follow-up is not required.
Emergency Planning and Community Right-to-Know Act 40 CFR 355.40	Release of an extremely hazardous substance under the Superfund Amendments and. Reauthorization Act or a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act equal to or greater than the reportable quantity.	The owner/operator should call the local emergency planning committee, the Indiana Emergency Response Commission at (317) 232-3830, or local emergency response personnel (911 in cases of transportation-related release) within fifteen minutes. Follow-up is required within seven calendar days.

Notification Requirements *(continued)*

Law	Potential Situations	Agencies to Notify & When Notification is Required
Resource Conservation and Recovery Act 40 CFR 262.34 40 CFR 263.30 40 CFR 264.56 40 CFR 264.196 40 CFR 265.56 40 CFR 265.196 40 CFR 270.14 40 CFR 270.30 40 CFR 273.17 40 CFR 273.37 40 CFR 273.54 40 CFR 279.43 40 CFR 279.53 40 CFR 280.50 40 CFR 280.52 40 CFR 280.53 40 CFR 280.60 40 CFR 280.61	Release, fire, or facility explosion that threatens health outside the facility.	The emergency coordinator or owner/operator should call the National Response Center (federal spill reporting) at (800) 424-8802, IDEM's emergency response coordinator at (888) 233-7745 (toll-free in Indiana) or (317) 233-7745, your local environmental agency (e.g., Hammond Dept. of Environmental Management) and the U.S. EPA regional administrator at (312) 353-2318 immediately. Follow-up varies from five to 30 days. Report to the on-scene coordinator, the National Response Center, and the U.S. EPA regional administrator.
Toxic Substance Control Act 40 CFR 761.120 40 CFR 761.125	Polychlorinated biphenyls (PCBs) spill (equal to or greater than 50 parts per million) with release to surface water/drinking water supplies/sewers/grazing lands, etc.	The person in charge should call the Pesticides and Toxics Compliance Section of U.S. EPA Region 5 at (312) 886-7061 within 24 hours. Follow-up as required by agency.

A list of reportable quantities can be found at 40 CFR 302.4, and a list of extremely hazardous substances can be found at 40 CFR 355, Appendices A and B. Both lists are available on the Web at http://ecfr.gpoaccess.gov.

Source: www.epa.gov/region07/toxics/factsht.htm

QUICK REFERENCE SHEET AUGUST 27, 2008

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Emergency Response

www.idem.IN.gov
Mitchell E. Daniels, Jr. **Governor** *Thomas W. Easterly* **Commissioner**
100 North Senate Avenue, Mail Code 66-30, Indianapolis, IN 46204
Phone: (317) 233-7745 Toll Free: (888) 233-7745

Contact numbers and evaluation techniques for environmental threats

PERSONAL SAFETY, ESPECIALLY YOURS, IS ALWAYS THE FIRST PRIORITY. Do not endanger yourself by entering hazardous environments. Stay upwind of spills and air releases. Never taste spilled materials. Never inhale smells to identify spills. Never touch unknown materials without proper Personal Protective Equipment. Be aware of highway, water and night-time safety issues. The burden of providing information and performing spill responses ALWAYS falls on the spiller, not you. Please let us know if you need additional guidance or do not feel comfortable being involved in a situation.

CONTACT NUMBERS

State Contacts:

-IDEM Emergency Response, spill reporting (24 hour)	888-233-7745
-IDEM, general information	800-451-6027
-IDEM air complaints	317-233-0178
-SEMA (State Emergency Management Agency)	800-669-7362
-ISFM (Indiana State Fire Marshall)	800-669-7362
-ISDH (Indiana State Dept. of Health)	317-233-1325
-IDNR NRHQ (Dept. Natural Resources, North Region)	765-473-9722
-IDNR SRHQ (Dept. Natural Resources, South Region)	812-837-9536
-OISC (Office of the Indiana State Chemist)	800-893-6637
-IOSHA (Indiana Occupational Safety and Health)	317-232-2693
-Public Safety Training Institute	317-232-6632
-Illinois Environmental Protection Agency	217-782-7860
-Michigan Department of Environmental Quality	800-292-4706
-Ohio Environmental Protection Agency	614-224-0946
-Kentucky Department of Environmental Protection	502-564-7815

Federal Contacts:

-National Response Center (federal spill reporting)	800-424-8802
- US EPA, Region V (24-hour emergency)	312-353-2318
-Agency for Toxic Substance and Disease Registry	404-639-0615
-US Coast Guard, Marine Safety Office, Louisville, KY	800-253-7465

Other Contacts:

-Holey Moley (for locating underground utilities)	800-382-5544
-Chemtrec (chemical data information)	800-424-9300

Quick Reference Information Sheet for assessing spills and threats to water

CONTACTS

1. **Spiller information**: name, address, contact numbers
2. **Land owner information**: (if different): name, address, contact numbers
3. **Spill location** (if different): facility name, address, directions, contact numbers
4. **Other contacts** for: lease holders, contractors, response agencies

CIRCUMSTANCES

5. **Spilled material**/description. Material Safety Data Sheet. What is it used for?
6. **Date and time** of spill (When found vs. when spill likely began)
7. **Cause** of spill.
8. Has the spill led to threats of **human** safety? Any evacuations? Any injuries?
9. Has the **release stopped?** Can it be stopped without compromising safety?
10. Was there an immediate or any **spill response**? Many fire and street departments initially dam or absorb spills with kitty litter or sand. Spillers are ultimately responsible for initiating and completing a spill response.

SPILL CHARACTERISTICS

11. Describe **area affected**, estimate square feet or miles of affected water.
12. Describe **amount spilled**, amount contained, capacity of containers or vessels.
13. **Amount recovered** or why no recovery (very few exceptions).

SPILLS TO WATER

14. Are there **surface waters** nearby or involved? Roadside ditches, streams, ponds?
15. Are the surface waters **standing, flowing, discharging**? To where?
16. Do you see **fish** or other animals in or near the water? Are they alive, stressed, dead?
17. Are there ditches, low areas, storm drains inlets, field tile risers to water?

SPILLS TO SOIL

18. Are there **sandy or gravelly native soils**, backfill areas, dry wells nearby/involved?
19. Are there **water wells, pipelines, phone lines, or utilities** that spills might follow?

SPILLS TO TILES, SEWERS, STORM DRAINS

20. For impacted **storm drains/storm sewers**, are there signs of the spilled material in **manholes or catchment basins?** Check where the storm drain exits into surface water. Can spilled materials be safely contained and collected from catchment basins or storm drain outlets before entering water?
21. For impacted **combined or sanitary sewer** systems, contact the wastewater utility. Will the material be safely treated? Will it upset or flow through the plant? Can they safely separate and contain it without hurting their plant? Are they experiencing any bypass events where spilled materials may discharge directly to water? Check bypass outfalls for spilled material. Call IDEM Emergency Response Section at 888-233-7745 immediately for upset plants. Non-emergency treatment plant questions may go to IDEM, Office of Water Management, Water Inspections Sections at 800-451-6027.

Hazardous Material Releases

REPORT ENVIRONMENTAL EMERGENCIES

Immediately!

24 hours-a-day, 7 days-a-week

(317) 233-7745

Toll-Free Nationwide:

(888) 233-7745

Fish Kills

Oil Spills

To Report Radiological Incidents:
Call Indiana State Department of Health at (317) 233-1325.

Indiana Department of Environmental Management
www.idem.IN.gov
For general IDEM information, call (800) 451-6027 (business hours)

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Appendix G

Hazardous Waste Streams

Classification of Potential Hazardous Wastes Generated & Preferred Disposal Options for Potential Waste Streams

Waste	Preferred Disposal Option	Description/ Management Option	Hazardous Waste Status
Aerosols	• Recycle empty cans if possible.	Recycled or disposed (Emptied)	Not a hazardous waste
		Recycled or disposed (Not Emptied)	Make a hazardous waste determination and manage properly.
Antifreeze	• Recycle. • Hire a waste hauler to collect and dispose. • Purchase an on-site recovery unit.	Recycled	Make a hazardous waste determination and manage properly.
		Disposed	Make a hazardous waste determination and manage properly.
Batteries (Lead Acid)	• Recycle under Title 40, Part 266.80 of the Code of Federal Register (40 CFR 266.80).	Recycled	Not a hazardous waste
		Disposed	Make a hazardous waste determination and manage properly.
Batteries (Ni-Cad)	• Recycle under Title 329, Article 3.1, Rule 16 of the Indiana Administrative Code (329 IAC 3.1-16) incorporating 40 CFR 273.	Recycle as universal waste	Universal waste
		Disposed	Make a hazardous waste determination and manage properly.
Flares	• Encourage boaters to keep on board as extras. • Store in well marked, fire safe container. Use expired flares to demonstrate to boaters how they are used. Make sure to notify the Coast Guard and fire department first. • Encourage boaters to take flares to a household hazardous waste collection site.	Reused for intended purpose	Not a hazardous waste
		Disposed	Make a hazardous waste determination and manage properly.

Waste	Preferred Disposal Option	Description/ Management Option	Hazardous Waste Status
Fluorescent Light Tubes & Lamps (including compact fluorescent light bulbs)	• Recycle under Title 329, Article 3.1, Rule 16 of the Indiana Administrative Code (329 IAC 3.1-16) incorporating Title 40, Part 273 of the Code of Federal Register (40 CFR 273).	Recycle as universal waste	Not a hazardous waste
		Disposed	Make a hazardous waste determination and manage properly.
Fuel	• Add stabilizer in winter and octane booster in spring. • Mix with fresh fuel and reuse. • Send for re-refining.	Reused for intended purpose or re-refined	Not a hazardous waste
		Disposed	Make a hazardous waste determination and manage properly.
Mercury Switches	• Collect and send for recycling. • Encourage boaters to take the switches to a household hazardous waste collection site.	Recycled as universal waste	Universal waste
		Disposed	Make a hazardous waste determination and manage properly.
Oil	• Collect and send for recycling. • Use waste oil for space heating in approved used oil burner. • Encourage boaters to take their used oil to a household hazardous waste collection site.	Recycled	Not a hazardous waste
		Disposed	Make a hazardous waste determination and manage properly.
Oil Filters	• Drain oil and send oil and filter for recycling.	Recycled (oil and filters)	Not a hazardous waste
		Disposed (oil and filters)	Make a hazardous waste determination and manage properly.

Appendix G

Waste	Preferred Disposal Option	Description/ Management Option	Hazardous Waste Status
Paint (Antifouling) **& Debris**	• Switch to a long-lasting, low-toxicity paint. • Encourage boaters to use paints that contain the least amount of toxins necessary. • Discourage use of antifouling paints for fresh water boaters.	Disposed	Make a hazardous waste determination and manage properly.
Paint Scraping & Sanding Waste	• Conduct work away from the water's edge.	Disposed	Make a hazardous waste determination and manage properly.
Pesticides	• Reuse on site. • Rinse container and use rinsate as makeup for next batch or spray out through sprayer. • Encourage boaters to take unused containers to a household hazardous waste collection site.	Disposal of rinsed containers	Not a hazardous waste
		Disposal of containers not rinsed or containing product	Make hazardous waste determination and manage properly.
Solvents & Cleaners (Petroleum Based)	• Reused on site for other projects. • Encourage boaters to take to a household hazardous waste collection site.	Reused on site	Not a hazardous waste
		Disposed	Make a hazardous waste determination and manage properly.
Sorbents	• Recycle under the used oil rule (if contaminated with used oil only).	Recycled	Not a hazardous waste
		Disposed	Make a hazardous waste determination and manage properly.

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Used Oil Management

The term used oil includes any petroleum-based or synthetic oil that has been used, such as engine oil, sludge from used oil tanks, transmission fluid, refrigeration oil, compressor oil, hydraulic fluid, etc.

As oil circulates through an engine and pumps, it may become contaminated with heavy metals, including lead. High concentrations of lead may make used oil a hazardous waste. Oil may also become contaminated through contact with gasoline, which could make the used oil a hazardous waste due to benzene contamination and/or flammability. In addition, oil can also become contaminated with products of incomplete combustion, which contain a number of known carcinogens.

Two environmental management options currently exist for facilities that generate used oil. The first option is to recycle used oil or burn it for energy recovery under the used oil rule. The second option is to dispose of used oil, following all applicable solid and hazardous waste rules. By managing used oil under the used oil rule (rather than under the solid and hazardous waste rules), the regulatory requirements will be lessened.

Option 1: Recycling or Burning for Energy Recovery (Used Oil Rule)

Complying with the used oil rule means that a facility does not have to manage used oil or the sludge from a used oil tank as a hazardous waste. Even if the used oil to be recycled or fuel blended is contaminated with a hazardous waste from product formulation or through its intended use (such as when contaminants mix with oil in the crankcase), the used oil is still regulated under the used oil rule rather than as a hazardous waste. In order to comply with the used oil rule, a facility must properly manage its used oil, and must either recycle used oil or burn it for energy recovery. Keep in mind that oil that is intentionally or accidentally mixed with a hazardous waste must be managed as a hazardous waste.

Note that under the used oil rule, both re-refining and burning of used oil for energy recovery are considered to be forms of recycling. Re-refining is the preferred method of managing used oil because it preserves our limited natural resources.

If a facility chooses to burn used oil in an onsite space heater, be aware that there are additional rules that must be followed under the used oil rule. Because small oil-burning space heaters are not as clean burning or as efficient as industrial furnaces, IDEM recommends that used oil be sent to a fuel blender rather than burning it on-site.

Option 2: Disposal (Solid and Hazardous Waste Rules)

Used oil that cannot be managed under the used oil rule (i.e., because of contamination with a hazardous waste or other material) is subject to all applicable solid and hazardous waste rules. Under the solid and hazardous waste rules, a facility must make a hazardous waste determination and manage used oil accordingly.

If a facility determines that its used oil is not a hazardous waste, it is still prohibited from being sent to a solid waste landfill because these landfills do not accept liquid waste or waste that contains free liquids (i.e., wastes containing liquids that will readily pour.) Therefore, used oil must be sent to a facility that is capable of handling liquid waste or that can solidify the waste prior to disposal.

What must be done to be in compliance?

Managing used oil may be done in a number of different ways. Listed below are the various options as well as the requirements for each.

If the used oil rule found under 329 IAC 13 is being followed, a facility must:

- Recycle used oil or burn self-generated used oil for energy recovery in an on-site space heater.
- Not mix used oil with hazardous wastes.
- Determine the halogen content of the used oil by using generator knowledge or by using a test kit for halogens (available from safety supply dealers.) If the used oil contains more than 1,000 parts per million total halogens, it is presumed to have been mixed with a hazardous waste and must be treated as a hazardous waste unless a facility can demonstrate that the source of the halogens was not from mixing a hazardous waste with used oil. To avoid having to manage used oil as a hazardous waste, do not add solvents or anything else to the used oil.
- Mark containers that hold used oil with the words “Used Oil.”

For off-site shipments, a facility must ensure that the transporter used has a U.S. EPA identification number. A facility may personally transport less than 55 gallons of its own used oil (or oil that has been collected through a household do-it-yourself collection program such as that described below) at any time to a used oil collection center or to a facility’s own aggregation point without obtaining a U.S. EPA ID number. Note that an aggregation point is basically a collection

center designed to accept small amounts of used oil and store it until enough is collected to ship it elsewhere for recycling. Aggregation points collect oil only from facilities run by the same owner/operator and from individuals.

If a facility is following the used oil rule and burning used oil on-site, it must:

- Follow all of the above-listed requirements.
- Have a used oil-fired space heater with a maximum capacity of not more than 500,000 Btu/hr.
- Vent combustion gases from the heater to the ambient air.
- Burn only used oil that a facility generates or used oil received from households that bring their used oil to the facility.

Used Oil Heater (Photo by Joe Exl, IDNR)

If a facility is following the solid and hazardous waste rules, it must:

- Determine if the used oil is a hazardous waste. If the oil is considered to be a hazardous waste, it must be managed according to the hazardous waste rules.

If used oil is not a hazardous waste, it still must be managed under IDEM's solid waste rules and sent to a facility that is permitted to accept this type of waste.

Regardless of whether a facility follows the used oil rule or the solid and hazardous waste rules, it must do the following:

- Clean up spills promptly.
- Keep oil storage containers in good condition. Drums used to store oil cannot be rusting or leaking.
- Develop a spill prevention, control and countermeasures plan if a facility stores oil in tanks or containers having an accumulative storage capacity in excess of 1,320 gallons or follow the underground storage tank regulations.
- Report oil spills.
- Not apply used oil as a dust suppressant.
- Not store used oil in surface impoundments (i.e., lagoons.)

Used Oil Management

A Good Idea!

Start a Do-It-Yourself (DIY) Oil Collection Program. The U.S. EPA estimates that millions of gallons of used oil are released into the environment each year by household do-it-yourselfers. By participating in a DIY oil collection program, a facility can help prevent oil waste from polluting the environment and can also demonstrate a facility's commitment to customer service and community. Prior to starting a DIY collection program, a facility must contact the Plan Review section of the Indiana Department of Homeland Security's Division of Fire and Building Safety at (317) 232-1431 to ensure that it is following applicable regulations. A facility must also follow the management standards of IDEM's used oil rule, accept DIY used oil, and send the DIY oil to a recycler or burn it for energy recovery.

Guidance Documents

Visit IDEM's website at **www.idem.IN.gov/cleanmarina** for these guidance documents concerning used oil:

"Complying with Indiana's Used Oil Rule"

"Indiana Used Oil Handling Facilities and Transporters"

"Used Oil Filters"

Many used oil transporters will pick up used oil, including used oil that is collected from do-it-yourselfers, at no charge if a minimum volume of gallons of used oil is present per pickup. Some used oil transporters will also provide a double-walled oil storage tank and will train staff in the proper collection of DIY used oil. Contact a used oil transporter to request additional information about participating in a DIY oil collection program.

Some suggestions for implementing a used oil-recycling program include:

- Offer special reusable containers to do-it-yourselfers. Avoid accepting other used oil containers.
- Use a separate drum or tank for do-it-yourselfer oil to avoid potential contamination of the facility's used oil.
- Visually inspect used oil brought in by do-it-yourselfers. Do not accept suspicious materials.
- Have the do-it-yourselfers sign a log with a statement verifying the material is used oil only.
- Post a sign and provide written materials describing the program.
- Include this public service and any other environmental efforts in the facility's advertisements.

Oil Filters (Used)

When a used oil filter is removed from a vehicle, approximately one pint of oil may remain trapped in the filter. The used oil and sludge that remain in the filter may contain contaminants such as heavy metals that are picked up as the oil circulates through the engine. High concentrations of heavy metals may cause used filters to demonstrate hazardous waste characteristics, making the filters subject to hazardous waste regulations if the filters are not properly drained. There are several management options for handling used oil filters. The regulations a facility must follow depend on whether the used filters are properly drained and what is subsequently done with them (e.g., recycle, burn, discard.)

Used Oil Filters (Photo by Joe Exl, IDNR)

Properly hot-drained filters are exempt from Indiana's hazardous waste regulations and may be disposed as solid waste. The term "hot drain" means to immediately drain the filter after it is removed from a vehicle that is at or near the engine's operating temperature, while employing some additional means to facilitate draining such as puncturing, crushing, or dismantling.

Undrained filters may be managed under Indiana's used oil rule if the filters are recycled or burned for energy recovery (see "Used Oil Management" on pages 129–132 for additional information on Indiana's used oil rule). Undrained filters that are discarded are subject to all applicable solid and hazardous waste rules. Note that even if a facility's used oil filters are not considered to be a hazardous waste, they still cannot be sent to a landfill because of the restrictions on wastes containing free liquids (liquids that will readily pour). Instead, the filters must be managed under IDEM's solid waste rules and sent to a facility that is capable of handling liquid waste or that can solidify the waste prior to disposal.

For More Information

Appendix D – (pages 105-110) Complying With the Hazardous Waste Rules (contains information about hazardous waste characteristics)

Large filters, such as those used in heavy-duty vehicles, may be terne-plated. Terne is an alloy of tin and lead, and it is used to strengthen the shells of larger oil filters. Terne-plated filters are exempt from hazardous waste rules only if they are recycled as a scrap metal. If they are disposed of, they are subject to a hazardous waste determination and, if found hazardous, must be managed in accordance with all applicable hazardous waste requirements.

Oil Filters (Used)

What must be done to be in compliance?

As stated above, managing used oil filters may be done in a number of different ways. Listed below are the regulations that a facility must follow depending on the option that is used:

If a facility chooses to hot drain its used oil filters, it must:

- Puncture the filter anti-drain back valve or the filter dome end and hot drain the filters; or
- Perform any other equivalent hot draining method that will remove the used oil so that the filters contain no free liquids. Equivalent methods include crushing or dismantling the filters.
- Properly manage the oil drained from the filters (see "Used Oil Management" on pages 129-132 for more information).

If a facility does not hot drain filters, it must determine if the filters demonstrate hazardous waste characteristics. Filters that demonstrate hazardous waste characteristics are considered to be a hazardous waste and must be managed accordingly.

Draining an Oil Filter (Photo by Joe Exl, IDNR)

Antifreeze

Antifreeze storage container

Under Indiana's hazardous waste rules, ethylene glycol and propylene glycol (i.e., virgin antifreeze) are not listed hazardous wastes. However, contact with cooling system parts may cause used antifreeze to become contaminated with heavy metals, such as lead, chromium and cadmium. This contamination may make the antifreeze a hazardous waste. Similarly, used antifreeze that is mixed with other wastes (during storage, etc.) may result in a mixture that is a hazardous waste. Each facility is responsible for making a hazardous waste determination on its used antifreeze. This determination can be based on analytical test results of the used antifreeze, or it may be based on the knowledge of the waste and how it was generated and managed.

IDEM has reviewed data on used antifreeze (both ethylene glycol and propylene glycol-based) from a broad range of vehicle types and ages. The results of this data indicate that used antifreeze does not appear to exhibit the characteristics of a hazardous waste. However, it is possible that a facility could generate used antifreeze that is a hazardous waste if the facility:

- Generates used antifreeze primarily from older vehicles (i.e., vehicles with metal radiators and lead soldered joints).
- Generates a type of antifreeze other than traditional ethylene glycol or propylene glycol-based antifreeze.
- Mismanages its used antifreeze after it has been drained from the vehicle (i.e., if the antifreeze is mixed with hazardous wastes or other contaminants).

For More Information

Visit IDEM's website at www.idem.IN.gov/cleanmarina for the agency's regulatory analysis of used antifreeze.

Antifreeze

What must be done to be in compliance?

If a facility's used antifreeze is considered to be a hazardous waste, the facility must manage it according to the hazardous waste rules. Listed below are some of the proper management requirements for small and large quantity generators. The full listing of requirements can be found under 40 CFR 262. While conditionally exempt small quantity generators are not required to comply with 40 CFR 262 it is recommended that they follow the same management practices.

- Label all containers in accordance with the hazardous waste rules. Remember to clearly mark the words "HAZARDOUS WASTE," as well as the date the waste began to accumulate (or the date the container was completely filled if there is a satellite accumulation area onsite), on the used antifreeze container.
- Keep storage containers closed to prevent evaporation and spills.
- Conduct weekly inspections to ensure that the containers are in good condition. Look for leaks and for deterioration caused by corrosion or other factors. If a container leaks, put the hazardous waste or the leaking drum in another container.
- Keep monthly records of the amount of used antifreeze that is accumulated.
- Manifest drums of used antifreeze to a waste treatment, storage or disposal facility.
- Use only permitted waste transporters that have obtained a U.S. EPA identification number to transport drums of antifreeze off site.

If it is determined that a facility's used antifreeze is not a hazardous waste, the facility must:

- Never put antifreeze into the environment (i.e., onto the ground or into streams).
- Never pour antifreeze into any drains if a facility is on city water, unless the local wastewater treatment plant has been contacted in order to make sure it can handle such a discharge.
- Never discharge antifreeze to a septic system.

If a facility recycles antifreeze on-site, a hazardous waste determination must be made on the filters and sludge, or they can be treated as hazardous wastes. Because the contaminants are concentrated in the filter and/or sludge, it is likely that these may be hazardous wastes.

Antifreeze

Can antifreeze be recycled?

Yes, antifreeze can be recycled; however, there are some things to keep in mind.

Contracting with a Service Company to Recycle Used Antifreeze

Contracting this service to an outside company has certain advantages over purchasing recycling equipment. First, contracting this service does not require the initial capital expense of purchasing a recycling unit. Second, the filters and sludge that are generated during the recycling process may be hazardous wastes. If recycling on-site, a hazardous waste determination must be made and the waste must be managed accordingly. If this service is contracted to an outside company that recycles used antifreeze off-site, that company will be responsible for the hazardous waste generated during the recycling process.

On-Site Recycling

Using an on-site mobile antifreeze recycling service involves having a recycling service visit the facility with a mobile coolant-recycling unit. Note that the facility will be responsible for any hazardous waste generated as a result of on-site antifreeze recycling. Spent filters and sludge may potentially be hazardous wastes.

Off-Site Recycling

Another option is to send used antifreeze off-site for recycling with a reputable recycling company. Used antifreeze may be stored on-site for later pickup. Recycling companies usually require a minimum pickup quantity of 50-55 gallons and, in addition to picking up used antifreeze, can also supply recycled antifreeze.

A Good Idea!

Use propylene glycol instead of ethylene glycol-based antifreeze. Propylene glycol is less toxic and studies have suggested that it has the advantage of reduced internal engine corrosion potential.

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Batteries (Lead Acid)

Marina facility owners have several options when disposing of used lead acid batteries. The rules a facility must comply with are determined by the option chosen. These options are as follows:

Spent lead acid batteries should be stored in an area with secondary containment or in an area that provides a means to control and contain any battery acid spillage (Photo by Cathy Csatari, IDEM).

Option 1: Reclamation/ Recycling

If a facility generates, collects, transports, stores or regenerates lead-acid batteries for reclamation purposes, the facility may be exempt from certain hazardous waste management requirements. However, if a facility is a battery reclaimer and stores batteries prior to reclamation, the facility is subject to many of the hazardous waste management requirements. (A material is "reclaimed" if it is processed to recover a usable product or if it is regenerated. Recovery of lead values from spent batteries is considered reclamation.) Specific requirements concerning the reclamation and recycling of used batteries is contained in 40 CFR 266.80, available on the Web at http://ecfr.gpoaccess.gov/.

Option 2: Managed as Universal Waste

Universal wastes include nickel cadmium and small sealed lead-acid batteries, agricultural pesticides, thermostats and lights/lamps (e.g., fluorescent, high-intensity discharge, neon, mercury vapor, high pressure sodium and metal halide lamps). Used lead-acid batteries managed as universal waste have different, less stringent rules, than those managed as a hazardous waste. For more information about the generation, storage, transportation and disposal of universal wastes, refer to IDEM's guidance document entitled, "Universal Waste Rule," available on the Web at www.idem.IN.gov/cleanmarina.

Option 3: Managed as Hazardous Waste

Batteries that are not recycled/reclaimed or managed as a universal waste must be managed as hazardous waste in accordance with the hazardous waste rules. For additional information concerning the hazardous waste requirements, see Appendix D, "Complying With the Hazardous Waste Rules," on pages 105-110.

Batteries (Lead Acid)

If Your Facility Sells Batteries

Marinas or boatyards that sell batteries must comply with Indiana Code 13-20-16, available on the Web at www.IN.gov/legislative/ic/code/title13/ar20/ch16.html. This law includes but is not limited to:

- Posting signage in a location that can be seen by customers. The sign must be at least 8.5" by 11" in size and must indicate the following:

> Recycle your used batteries.
>
> Improper disposal of batteries is against the law.
>
> It is illegal to put used motor vehicle batteries or other vehicle or boat batteries in the trash.
>
> State law requires us to accept your used battery for recycling if you purchase a new battery from us.

- Ensuring that used batteries are properly managed and recycled by doing the following:
  - Properly store all spent lead-acid batteries in an area with secondary containment or in an area that provides a means to control and contain any battery acid spillage. If batteries are stored outdoors, the storage area must be curbed to contain leaks, and covered to prevent snow and rain from entering.
  - Within 90 days from the date the spent lead-acid battery was received, the battery must be transferred:
    - To a wholesaler or to an agent of a wholesaler;
    - To a manufacturer of lead acid batteries;
    - To a facility that recycles lead acid batteries or collects lead acid batteries for delivery to a recycling facility; or
    - To a facility operated as a secondary lead smelter under a valid permit issued by the state in which it is located or by U.S. EPA.

A Good Idea!

Storing batteries on a wire shelf with plastic spill trays placed below the shelf will allow easy inspection of all batteries for damage and will also contain any leaking battery acid. By storing batteries in this manner, it can be readily determined which battery is leaking. Acid collected from the spill tray can be returned to a non-leaking battery that will be sent off-site for reclaiming. Another way to store batteries is to utilize a U.S. EPA-approved storage box.

Fluorescent Light Tubes & High Intensity Discharge Lamps (does not include halogen lamps)

Marina operators should conduct a hazardous waste determination on fluorescent bulbs used at their facility.

Historically, fluorescent tubes and lamps, including compact fluorescent light bulbs, contained a sufficient amount of mercury to make them a hazardous waste when disposed. Some new tubes and lamps are now marketed as containing a reduced amount of mercury, presumably making them a non-hazardous waste when disposed. However, it remains the generator's responsibility to ensure the correct hazardous waste determination is made and to manage the waste accordingly. If a facility is considering purchasing a new type of tube/lamp that is marketed as a nonhazardous waste when disposed, it should request the analytical test results for the product (i.e., toxicity characteristic leaching procedure, otherwise referred to as TCLP) from the vendor. Ask the vendor to explain the TCLP results, or contact IDEM's Office of Land Quality at (317) 308-3103 for assistance.

If the used tubes/lamps are considered to be a hazardous waste, there are two management options for handling waste tubes and lamps—recycle or dispose of them under the universal waste rule, or dispose of them under the hazardous waste rules.

Option 1: Recycling or Disposal (Universal Waste Rule)

The universal waste rule found under 326 IAC 3.1-16 is a modification of the hazardous waste rules and is designed to reduce regulatory requirements by promoting environmentally-sound recycling and disposal practices. In addition to being easier for businesses to comply with, handling used tubes and lamps under the Universal Waste Rule also reduces the environmental impact associated with disposal under the hazardous waste rules. For more information on universal wastes, refer to IDEM's guidance document entitled, "Universal Waste Rule." This document is available on IDEM's website at www.idem.IN.gov/cleanmarina.

Fluorescent Light Tubes & High Intensity Discharge Lamps (does not include halogen lamps)

Option 2: Disposal (Hazardous Waste Rules)

The second option is to manage used tubes and lamps under the hazardous waste rules. For more information, see Appendix D, "Complying With the Hazardous Waste Rules," on pages 105-110. Note that discarded tubes and lamps are not counted in determining generator status provided the tubes are shipped off-site for recycling as a universal waste. If used tubes and lamps are thrown in the trash, their total weight must be added to the monthly record for hazardous waste generation.

What must be done to be in compliance?

Listed below are the rules that must be followed depending upon how a facility manages its used tubes and lamps. Regardless of whether a facility follows the universal waste rule or the solid and hazardous waste rules, it must:

- Educate employees on proper handling and emergency procedures associated with the waste tubes/lamps.
- Contain all releases of waste and residues.
- Make a hazardous waste determination on used tubes and lamps and manage them accordingly.

If used tubes and lamps are managed under the universal waste rule, a facility must:

- Package both unbroken and broken tubes/lamps to prevent breakage and a release of contaminants; lamps managed under the universal waste rule may not be intentionally crushed or broken.
- Label the tubes/lamps or the containers holding them with the words "Universal Waste Lamps" or "Waste Lamps" or "Used Lamps" or any other words that accurately identify the universal waste lamps.
- Have used tubes and lamps transported to a universal waste collection center. Note that under the universal waste rule, it is not required that used tubes/lamps be manifested.
- Not accumulate and store used tubes/lamps for longer than a one-year period.

If used tubes and lamps are managed as a hazardous waste, the hazardous waste rules must be followed.

Mercury Switches

Mercury can be found in bilge pumps and some switches on marine craft and as a vapor in high intensity discharge lamps. Mercury is a highly toxic substance. The amount of mercury in one bilge pump switch (approximately one gram) can contaminate a 20-acre lake to the point where the fish should not be eaten. There is typically enough mercury in these switches to make them a hazardous waste when disposed.

Boaters and marina operators should consult the manufacturer of their bilge pump switches to determine if they contain mercury (Photo by Joe Exl, IDNR).

There are two management options for handling used mercury switches from bilge pumps—recycle or dispose of them under the universal waste rule, or dispose of them under the hazardous waste rules.

Option 1: Recycling or Disposal (Universal Waste Rule)

The universal waste rule found under 326 IAC 3.1-16 is a modification of the hazardous waste rules and is designed to reduce regulatory requirements by promoting environmentally-sound recycling and disposal practices. In addition to being easier for businesses to comply with, handling used mercury switches under the Universal Waste Rule also reduces the environmental impact associated with disposal under the hazardous waste rules. For more information on universal wastes, refer to IDEM's guidance document entitled, "Universal Waste Rule." This document is available on IDEM's website at www.idem.IN.gov/cleanmarina.

Option 2: Disposal (Hazardous Waste Rules)

The second option is to manage used mercury switches under the hazardous waste rules. For more information, see Appendix D, "Complying With the Hazardous Waste Rules," on pages 105-110. Note that discarded mercury switches are not counted in determining generator status provided the switches are shipped off-site for recycling as a universal waste.

Mercury Switches

What must be done to be in compliance?

Listed below are the rules that must be followed depending upon how a facility manages its used mercury switches. Regardless of whether a facility follows the universal waste rule or the solid and hazardous waste rules, it must:

- Educate employees on proper handling and emergency procedures associated with the used switches.
- Contain all releases of waste and residues.
- Make a hazardous waste determination on used switches and manage them accordingly.

If used switches are managed under the universal waste rule, a facility must:

- Package the switches/pumps to prevent breakage and a release of contaminants.
- Label the used switches or the containers holding them with the words "Universal Waste–Mercury-Containing Equipment," "Waste Mercury-Containing Equipment" or "Used Mercury-Containing Equipment" or other words that accurately identify the universal waste mercury-containing equipment (including wording specific to universal waste thermostats as required in the original rule).
- Have used switches transported to a universal waste collection center. Note that under the Universal Waste Rule, it is not required that used switches be manifested.
- Not accumulate and store used switches for longer than a one-year period.

If used switches are managed as a hazardous waste, the hazardous waste rules must be followed.

A Good Idea!

Recycling your mercury switches will help to ensure that the mercury contained in the switches will be handled in the most environmentally-responsible way possible.

Fuel & Fuel Filters

Gasoline, diesel fuel, fuel filters, as well as used wipes and sorbents that are contaminated with gasoline or diesel may be subject to IDEM requirements.

Fuel Filter (Photo by Joe Exl, IDNR)

What must be done to be in compliance?

Listed below are the management responsibilities that must be followed when managing fuel and fuel filters:

Fuel

Manage waste fuel in one of the following manners:

- Reuse the fuel if it is not contaminated or
- Make a hazardous waste determination and send it to a re-refiner, fuel blender or a hazardous waste facility.

Fuel Filters

Manage waste fuel filters in one of the following manners:

- Make a hazardous waste determination on fuel filters that contain gasoline.
- Drain the residual fuel from the filter, collecting any liquid for reclamation or reuse.

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Scraping & Sanding

Hull paints can contain heavy metals and other toxins. Scraping and sanding the paint can produce hazardous wastes. Even though the paint wastes may not be hazardous waste according to the Resource Conservation and Recovery Act, they may still be hazardous to the environment. Paints that contain zinc or copper compounds can harm aquatic life. Paint scrapings and debris that are mixed with other wastes (during maintenance, storage, etc.) may result in a mixture that is a hazardous waste. Each facility is responsible for making a hazardous waste determination on its used paint waste. This determination can be based on analytical test results of the debris, or it may be based on the knowledge of the waste and how it was generated and managed.

To minimize the spread of the debris, dust and paint chips, try to do all work in a covered building (Source: Jay Tanski, New York Sea Grant).

For both hazardous and nonhazardous debris, trash, sanding dust and paint chips, cleanup of the area should be done immediately following any maintenance or repair activity. The work area should never be hosed down unless the area is diked and the water is collected for treatment or discharged to the local publicly owned treatment works provided that the treatment plant has agreed to this activity.

What must be done to be in compliance?

If a facility's hull debris is considered to be a hazardous waste, the facility must manage it according to the hazardous waste rules. Listed below are some of the proper management requirements for small and large quantity generators. The full listing of requirements can be found under 40 CFR 262. While conditionally exempt small quantity generators are not required to comply with 40 CFR 262, it is recommended that they follow the same management practices.

- Label all containers in accordance with the hazardous waste rules. Remember to clearly mark the words "HAZARDOUS WASTE," as well as the date the waste began to accumulate (or the date the container was completely filled if there is a satellite accumulation area on site), on the waste container.
- Keep storage containers closed when not adding or removing materials to prevent spills.

- Conduct weekly inspections to ensure that the containers are in good condition.
- Look for leaks and for deterioration caused by corrosion or other factors. If a container leaks, put the hazardous waste or the leaking drum in another container.
- Keep monthly records of the amount of waste that is accumulated.
- Manifest drums of waste to a waste treatment, storage or disposal facility.
- Use only permitted waste transporters that have obtained a U.S. EPA identification number to transport drums of waste off site.
- Do not store waste for longer than the allotted time for your generator status.

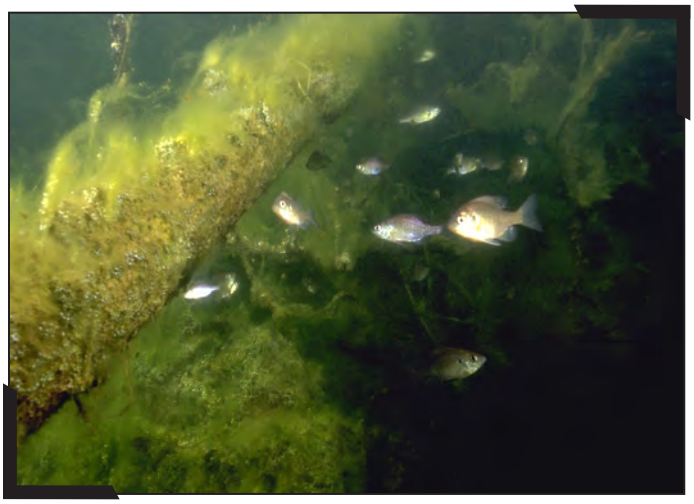
If it is determined that a facility's waste hull debris is not a hazardous waste, the facility must collect the paint chips and debris and place them in a nonleaking, covered dumpster.

A Good Idea!

To minimize the spread of the debris, dust and paint chips, try to do all work in a covered building. If a building is not available, limit work to days with little or no wind. Work over impervious surfaces and place plastic tarps under the work area for easy sweeping and disposal. If work must be done during windy days, construct a temporary structure of plastic sheeting. Try to vacuum the work area. Use or offer for use a dustless or vacuum sander when sanding.

Antifouling Paints

Antifouling paints have been used on marine craft to kill organisms that attempt to attach to the painted surface. The paints contain copper, copper compounds, or tributyl tin compounds. By design, antifouling paints are toxic to marine life. These metals can be adsorbed by fish. Tributyl tin in levels as low as a few parts per trillion has been shown to cause abnormal development in shellfish. The toxins from the antifouling paints can enter into the environment from spillage, sanding, sand blasting or scraping. Paint chips left on the ground can migrate to the water via storm water run-off. The toxins can be passed up the food chain in increasing concentration levels through a process known as bioaccumulation (e.g., mussels uptake toxins during feeding; mussels are eaten by fish; fish are eaten by humans).



Antifouling paints are toxic to marine life (Photo by Tom Leaird).

What must be done to be in compliance?

- Do not use tributyl tin-containing paints on vessels of less than 25 meters (82 feet) in length; however, vessels with aluminum hulls which corrode from the cuprous oxide antifouling coatings are allowed to use tributyl tin-containing paints (see Organotin Antifouling Paint Control Act in Title 33, Chapter 37, Section 2401 of the United States Code).
- Make a hazardous waste determination on any waste material or debris to determine whether the waste is hazardous under the Resource Conservation and Recovery Act. If the waste is found to be a hazardous waste, follow the same recommendations in the "Scraping & Sanding" section on pages 147-148.

A Good Idea!

Prohibit in-water bottom cleaning, hull scraping or any other process that occurs underwater that could remove antifouling paint. Use less toxic antifouling paints such as Teflon, silicone, polyurethane and wax that have limited negative impacts on the environment.

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Solvents

The regulations a facility must follow when managing and disposing of solvents depends on the type(s) of solvent and precleaner(s) it is using. Listed below are the types of solvents potentially used in boat repair and maintenance and an overview of the regulations associated with each.

Petroleum-Based Parts Washer (Photo by Joe Exl, IDNR)

Water (Aqueous) Based Solvents

Aqueous-based solvents are generally less toxic alternatives to petroleum-based solvents. Unlike petroleum-based solvents, they are generally safer and have less hazards or adverse impacts associated with them. The detergent used for aqueous parts washing may be an acid, alkaline or a citrus-based solution. Some aqueous systems use microbes to eat the oil and grease that accumulate in the cleaning system. Aqueous parts washers may be in the form of a heated parts washing sink, an immersion tank, or a high-temperature spray cabinet. A high temperature spray cabinet is similar to a large dishwasher in that it combines heat, soap and spraying action to clean dirty parts. This type of unit is available in various sizes, with the larger units having ample capacity for cleaning large parts.

If a facility is considering switching to an aqueous-based cleaner, keep in mind that some aqueous cleaners will cause the parts to rust, requiring that the parts be treated after they are cleaned. Also keep in mind that used aqueous-based solvents may be a toxic hazardous waste if they are contaminated to the extent that they exhibit hazardous waste characteristics or are contaminated with a listed hazardous waste. Potential contaminants include oil and grease, lead, chromium, cadmium, and any precleaners used by the facility.

Depending upon the type and level of contamination, a facility's used aqueous-based solvent may be unacceptable for discharge to the local publicly owned treatment works (POTW) or may be a hazardous waste. If a facility wishes to discharge its aqueous cleaning solution, the facility should first contact its local POTW for permission. At no time should aqueous cleaners be discharged to the environment or a storm water sewer drain.

What must be done to be In compliance?

Listed below are the requirements that a facility must follow when managing and disposing of aqueous-based solvents:

- Make a hazardous waste determination and manage used aqueous solutions accordingly. For additional information on listed and characteristic hazardous wastes and the method to be used for making a waste determination, see Appendix D, "Complying With the Hazardous Waste Rules" on pages 105-110.
- Do not discharge used aqueous solution unless it is connected to a POTW or a holding tank or unless the facility has a National Pollutant Discharge Elimination System (NPDES) permit. If a facility is discharging to a POTW, the facility must ensure that the discharge meets the effluent limits set by the POTW.

A Good Idea!

Purchasing an aqueous parts washer with a skimmer and a timer will provide the facility with several benefits. First, the timer will allow it to automatically turn the washer's heater unit on and off at certain times each day. Turning the heat off at the end of each day not only saves energy, but also allows the aqueous solvent to cool and the oil and grease to separate. The timer can then schedule the skimmer to remove the oil and grease that has risen to the top of the solvent. Frequent skimming of these contaminants will keep the solvent at its peak operating efficiency. Finally, the timer can be set to automatically turn the heater unit back on so that the solvent is ready to use at the beginning of each work day.

Petroleum-Based Solvents (e.g., mineral spirits)

New/virgin petroleum-based solvents are classified according to their flash point. The term "flash point" refers to the temperature at which a material could ignite if exposed to a spark. Materials with a low flash point (100°-140° F) will ignite more easily than materials with a higher flash point (140°-200° F.)

Petroleum-based solvents with a flash point from 100-140° F are also referred to as "low-flash solvents." This type of solvent will be an ignitable hazardous waste and, possibly, a toxic hazardous waste when disposed.

Petroleum-based solvents with a flash point from 140-200° F are also referred to as "high-flash solvents." Used high-flash solvent is not considered to be an ignitable hazardous waste unless it is contaminated and its flash point drops below 140° F. Be aware that many high-flash solvents have a flash point that is only slightly above the 140° F threshold for this group of solvents. If the facility uses precleaners that contain flammable materials, the used high-flash solvent may become a low-flash solvent (i.e., an ignitable hazardous waste) that is subject to more stringent regulations. In addition to potentially being an ignitable hazardous waste, a used high-flash solvent may also be a toxic hazardous waste if contaminated to the extent that it exhibits hazardous waste characteristics. If a facility's pre-cleaners contain any chemicals that are on any of the hazardous waste lists, the used solvent may automatically be a hazardous waste.

Chlorinated Solvents

Using chlorinated solvents can lead to significant compliance work for a facility. Chlorinated solvents include the following:

- Chlorobenzene (monochlorobenzene or benzene chloride);
- Trichloroethylene (trichloroethane, ethinyl trichloride);
- Chlorinated fluorocarbons;
- Methylene chloride (dichloromethane, methylene dichloride, methylene bichloride);
- Tetrachloroethylene (perchloroethylene, ethylene tetrachloride, tetrachloroethene); and
- 1,1,1-trichloroethane (methyl chloroform, chlorothene).

Check the product label or the material safety data sheets for these chemicals. If a facility is using any of them, IDEM air regulations will apply. If you are using methylene chloride as a paint stripper you may also be subject to U.S. EPA's area source rule for paint stripping and miscellaneous surface coating found under 40 CFR 63 Subpart HHHHHH. Hazardous waste regulations may also apply.

Some facilities use supplemental cleaning products to pretreat carbon deposits and other heavy soils. These cleaning products typically contain ignitable and/or chlorinated solvents such as methanol, propane, xylene, methylene chloride, trichloroethane and/or tetrachloroethylene.

Solvents

The use of these products may cause used solvent to be a hazardous waste due to toxicity, as well as ignitability. In addition to precleaners, used solvent may be contaminated with lead and/or chromium, which are frequently used as coatings on metal parts. A thin layer of these coatings may wash off when the parts are cleaned, leaving heavy metals in the used solvent.

Under IDEM's air regulations, all facilities that use petroleum-based solvents in an immersion cleaning machine (solvent sink) or in a remote reservoir cleaning machine (part sprayer), must follow specific work practices to limit the amount of volatile organic compounds (VOCs) entering the air. These work practices are listed in the "What Must Be Done To Be In Compliance?" section on page 155.

Under IDEM's hazardous waste rules, used petroleum-based solvent with a flash point below 140° F is a hazardous waste due to the characteristic of ignitability. The term "flash point" refers to the temperature at which a material could ignite if exposed to a spark. Used petroleum-based solvents with a flash point above 140° F are not regulated as a hazardous waste due to ignitability, but may be a hazardous waste due to toxicity depending upon the level and type of contamination. If the solvent contains any of the chemicals listed in 40 CFR 261.31 the waste may be an F-listed hazardous waste. Note that if a facility is classified as a conditionally-exempt small quantity generator (CESQG), disposing of more than 30 gallons of hazardous waste in any one calendar month will change a facility's hazardous waste generator status classification from CESQG to small quantity generator (SQG). If a facility's used petroleum-based solvent is determined to be a hazardous waste, it may easily move into the SQG classification when the parts washer is changed out. Parts washers typically contain between 19 and 27 gallons of used solvent, making the amount of hazardous waste very near the 220 pounds per month threshold for SQGs.

Many vendors have begun continued use programs. Under such a program, the vendors directly reuse their customers' solvents without first treating or recycling the solvents. Under a continued use program, the facility using the solvent does not generate a waste and, therefore, does not need to count the solvent toward their generator status or make a hazardous waste determination on the solvent.

Solvents

What must be done to be in compliance?

Listed below are the requirements that must be followed when managing and disposing of petroleum based solvents. If a facility uses petroleum-based solvents in immersion cleaning machines (solvent sinks) or in a remote reservoir cleaning machine (part sprayer), it must:

- Keep the solvent tank covered when not in use to prevent evaporation.
- Place a drain shelf in the basin of the parts washer. This shelf allows solvent to drain back into the solvent tank.
- Drain all parts for at least 15 seconds or until the part is no longer dripping.
- Store used solvent to be disposed in tightly covered or closed containers. Users of solvents with a vapor pressure at or below two millimeters of mercury (2.0 mm Hg) must also keep a record of each purchase, including the following information:
  - Name and address of the solvent supplier;
  - Date of purchase;
  - The type of solvent;
  - Volume of each unit;
  - Total volume of the solvent; and
  - Vapor pressure of the solvent.
- Make a hazardous waste determination on used petroleum-based solvent and manage it accordingly.
- Comply with 326 IAC 8-3 if the marina is located in Lake, Porter, Clark, Floyd, Elkhart, St. Joseph or Marion Counties.

A Good Idea!

It is a good idea to purchase or lease a solvent sink with a filter unit. See the next page for details.

A Good Idea!

Purchasing or leasing a solvent sink with a filter unit is a good idea. Some of the newer solvent sinks have filter units that extend the life of the solvent by filtering out contaminants. Dirty solvent passes through the filtering unit where contaminants are removed, and clean solvent is returned to the reservoir for reuse.

The type and location of the filters on the solvent sink vary depending upon the type of filtration system used. Some of the more commonly employed filtration systems are:

- Side-mounted disposable fabric filter units, which remove primarily particulates.
- Cyclonic filter units that use centrifugal force "cyclonic action" to remove solids. The solvent passes through a filtering unit where a spinning action takes place, causing the solids to settle out and allowing the clean solvent to be reused.
- Clay-containing filter units that are placed in the solvent reservoir or in the wash basin to remove primarily oil and grease.

Remember that a hazardous waste determination must be performed on the used filters prior to disposal.

Sorbents
(includes spill cleanup materials & waste)

Sorbents (absorbent material such as pigs, pillows and socks) are not hazardous unless they come into contact with hazardous materials or hazardous wastes. A facility's used sorbents and spill waste must be managed in one of the ways listed below. The particular requirements that must be followed depends on the type and extent of contamination, the quantity of contaminated sorbents generated per month, and whether the sorbents are recycled or disposed. Note that the term "spill waste" includes sorbents as well as any contaminated soil, residue, debris, and articles from the cleanup of a spill or release of petroleum-contaminated materials. The term "petroleum-contaminated materials" includes spill waste that contains virgin or used petroleum such as: gasoline, diesel fuel, hydraulic fuel, crude or refined oils that do not contain polychlorinated biphenyls (PCBs), kerosene, and heating oils.

Sorbent on a Spill (Photo by Joe Exl, IDNR)

Recycling Petroleum-Contaminated Sorbents (and/or Spill Waste) Under the Used Oil Rule

If a facility's sorbents are contaminated only with used oil, the sorbents may be disposed by burning for energy recovery under the used oil rule. In order to comply with the used oil rule, a facility must properly manage its oil-contaminated sorbents (i.e., don't mix other wastes with these sorbents), and it must either recycle sorbents or send them for disposal at a permitted facility that burns them for energy recovery. See "Used Oil Management" on pages 129-132 for additional information on the used oil rule.

Disposing of Contaminated Sorbents (and/or Spill Waste)

If a facility cannot manage its sorbents and spill waste under the used oil rule (e.g., because of contamination with a waste other than used oil), it must make a hazardous waste determination and manage them accordingly. Sorbents that exhibit hazardous waste characteristics or are contaminated with a listed hazardous waste must be managed as a hazardous waste. Refer to Appendix D, "Complying with the Hazardous Waste Rules," on pages 105-110 for additional information on characteristic and listed hazardous wastes.

Sorbents
(includes spill cleanup materials & waste)

Disposing of Sorbents and/or Spill Waste as a Solid Waste (i.e., with regular trash)

If used sorbents are determined not to be a hazardous waste, and they do not drip or accumulate free liquids (such as in the bottom of their storage container), a facility may dispose of them with its regular trash. Note that materials containing free liquids are prohibited from landfills. Also note that IDEM's air regulations prohibit air drying contaminated sorbents prior to disposal.

What must be done to be in compliance?

Listed below are the requirements that must be followed when managing and disposing of sorbents:

- If a facility manages its petroleum-contaminated sorbents and spill waste under the used oil rule, it must follow the requirements of this rule.
- If a facility cannot manage its used sorbents and/or spill waste under the used oil rule due to contamination with a waste other than used oil, it must make a hazardous waste determination on its used sorbents.
- If they are a hazardous waste, the facility must manage them accordingly.
- If a facility's used sorbents or spill waste are not a hazardous waste, it must ensure that the material does not drip, contain free liquids, or result in the accumulation of free liquids (such as in the bottom of their storage container) prior to disposing of them with the regular trash.

REMEMBER: Regardless of how a facility manages its contaminated sorbents and/or spill waste, it must not air dry contaminated sorbents to remove ignitable or toxic characteristics prior to disposal!

A Good Idea!

Purchase biomass-derived sorbent material. Sorbents made from plant cellulose, such as cotton and wood-fibers, are very effective in absorbing liquids. Biomass-derived sorbents have an absorbency ratio of 4:1 when compared to most alternatives. The absorbency ratio is five times greater than clay.

Appendix H

Hazardous Waste Generator Status & How the Rules Apply to You

If your operations cause hazardous waste to be generated, you must determine your generator status. Hazardous waste generator status is determined on a monthly basis and is based on the amount of hazardous waste you generate within a calendar month. Hazardous waste generators are divided into three categories—conditionally exempt small quantity generator (CESQG), small quantity generator (SQG) and large quantity generator (LQG). The following table outlines the amount of hazardous waste generated and the accumulation times used to determine generator status.

Generator Status	Amount of Hazardous Waste Generated Per Month	On-Site Accumulation Time	On-Site Quantity Limit
Conditionally Exempt Small Quantity Generator	220 pounds (100 kg) or less 2.2 pounds (1 kg) or less of acutely hazardous waste 220 pounds (100 kg) or less of acutely hazardous waste spill residue	Not Applicable	2,220 pounds (1,000 kg)** 2.2 pounds (1 kg) acute*** 220 pounds (100 kg) acute spill residue***
Small Quantity Generator	Between 220 pounds (100 kg) and 2,200 pounds (1000 kg)	No more than 180 days on site or 270 days if shipped 200 miles or more*	13,200 pounds (6,000 kg)
Large Quantity Generator	2,200 pounds (1000 kg) or more	No more than 90 days on site	No Limit

*Hazardous waste that is transported more than 200 miles away for recovery, treatment, or disposal can be stored for up to 270 days.

**If a facility generates/accumulates more than the amount listed, IDEM would consider it an SQG, and all regulations applicable to SQGs would apply.

***If a facility generates/accumulates more than this amount, it may become subject to LQG requirements.

NOTE: The measurements listed in each of the categories are in pounds and kilograms. Many hazardous wastes are liquids and are measured in gallons. In order to measure a facility's liquid waste, gallons will need to be converted to pounds. To do this, the density of the liquid must be known. A rough guide is that 30 gallons (about one-half of a 55 gallon drum) of waste with a density similar to water weighs about 220 pounds (100 kg); 300 gallons of a waste with a density similar to water weighs about 2,200 pounds (1,000 kg).

Appendix H

Once a facility has determined its generator status, a determination can be made as to the hazardous waste rules with which it must comply. CESQGs have the smallest number of rules with which to comply; LQGs have the largest number. A key point to remember when determining the requirements that apply to a facility is that generator status can change from month to month. If, for example, a facility generates less than 220 pounds (100 kg) of hazardous waste during the month of February, it would be considered a CESQG for February and its February waste would be subject to the hazardous waste requirements for CESQGs. If, in March, the facility generates between 220 pounds and 2,200 pounds of hazardous waste, its generator status would change, and it would be considered an SQG for March. Its March waste would then be subject to the requirements for SQGs.

Refer to the Generator Summary Chart for a summary of the requirements that apply to each generator category. The chart contains references to sections within Title 40 of the Code of Federal Regulations. Referring to these sections within the CFR will provide a facility with specific details as to each of these requirements. The CFR can be found on the Internet at http://ecfr.gpoaccess.gov/. In addition, a facility may wish to review some of the guidance documents available on U.S. EPA's website at www.epa.gov/epawaste/hazard/generation/resources.htm.

Reducing the amount of hazardous waste a facility is responsible for disposing of has many benefits. First, by increasing the amount of hazardous waste that is reclaimed or recycled, the costs associated with disposal of the waste are avoided. Second, by reclaiming or recycling hazardous waste, the liability associated with the disposal of hazardous waste is limited. This is because the liability associated with any hazardous waste that is sent away for disposal does not end when it is shipped off-site. A facility is still potentially liable for cleanup costs under Superfund for any mismanagement of hazardous waste once it reaches the disposal facility. Third, reclaiming or recycling waste is much better for the environment and the community.

Generator Summary Chart

	Conditionally Exempt Small Quantity Generator	Small Quantity Generator	Large Quantity Generator
Quantity Limits	220 pounds (100 kg) or less per month 2.2 pounds (1 kg) or less per month of acute hazardous waste 220 pounds (100 kg) or less per month of acute hazardous waste spill residue or soil 40 CFR 261.5(a) and (e)	Between 220 pounds (100 kg) and 2,200 pounds (1000 kg) per month 40 CFR 262.34(d)	2,200 pounds (1000 kg) or more per month 2.2 pounds (1 kg) or more of acute hazardous waste per month >220 pounds (100 kg) per month of acute spill residue or soil 40 CFR 262 and 40 CFR 261.5(e)
U.S. Environmental Protection Agency ID Number	Not required 40 CFR 261.5	Required 40 CFR 262.12	Required 40 CFR 262.12
On-Site Accumulation Quantity	2,200 pounds (1000 kg) hazardous waste 2.2 pounds (1 kg) acute hazardous waste 220 pounds (100 kg) acute hazardous waste spill residue 40 CFR 261.5(f)(2) and 40 CFR 261.5(g)(2)	Less than 13,200 pounds (6000 kg) 40 CFR 262.34(d)(1)	No Limit
Accumulation Time	None 40 CFR 261.5	180 days or 270 days (if more than 200 miles to waste treatment, storage or disposal facility) 40 CFR 262.34(d)(2) and (3)	90 days 40 CFR 262.34(a)

Generator Summary Chart *(continued)*

	Conditionally Exempt Small Quantity Generator	Small Quantity Generator	Large Quantity Generator
Storage Requirements	Comply with 40 CFR 261.5	Basic requirements with technical standards for tanks or containers 40 CFR 262.34(d)(2) and(3)	Full compliance for management of tanks, containers, or containment buildings 40 CFR 262.34(a)
Off-Site Management of Waste	RCRA permitted/interim status facility 40 CFR 261.5(f)(3) and (g)(3)	RCRA permitted/ interim status facility 40 CFR 262.20(b)	RCRA permitted/ interim status facility 40 CFR 262.20(b)
Manifest	Not required 40 CFR 261.5	Required 40 CFR 262.20	Required 40 CFR 262.20
Biennial Report	Not required 40 CFR 261.5	Not required 40 CFR 262.44	Required 40 CFR 262.41
Annual Report	Not required 40 CFR 261.5	Required 329 IAC 3.1-7-2	Required on years opposite the biennial report 329 IAC 3.1-7-2
Personnel Training	Not required 40 CFR 261.5	Basic training required 40 CFR 262.34(d)(5)(iii)	Required 40 CFR 262.34(a)(4)
Contingency Plan	Not required 40 CFR 261.5	Basic plan 40 CFR 262.34(d)(5)(i)	Full plan required 40 CFR 262.34(a)(4)
Emergency Procedures	Not required 40 CFR 261.5	Required 40 CFR 262.34(d)(5)(iv)	Required 40 CFR 262.34(a)(4)
Department of Transportation Requirements	Yes (if required by DOT) 49 CFR 172.702	Yes 40 CFR 262.30 - 262.33 49 CFR 172.702	Yes 40 CFR 262.30 - 262.33 49 CFR 172.702

Source: www.epa.gov/epawaste/hazard/generation/summary.htm

Appendix I

Selecting a Waste Transporter & Recycling/Waste Management Company

If you generate hazardous waste, you are responsible for the waste material cradle to grave. This means that you are responsible for the waste even after it leaves your marina. When it is time to select a waste hauler, recycling or treatment, storage, or disposal facility, you will need to make sure that you chose a reputable company that is in compliance with all federal and state regulations.

Selecting a Waste Transporter

Regulations pertaining to waste transportation vary depending on your generator status. Both federal and state regulations state that if you are a conditionally exempt small quantity generator (generate less than 220 pounds per month and store less than 2,200 pounds) you may transport your hazardous waste to a recycling facility or treatment, storage, or disposal facility yourself (see Appendix H, "Hazardous Waste Generator Status and How the Rules Apply to You," on pages 159-162).

While this may seem like a way to save yourself money, the liability of transporting hazardous materials can be quite large. If there is a spill or release of hazardous materials during transportation, you will be liable and will have to pay for the cleanup costs. You may wish to just comply with the transportation requirements of a small quantity generator.

If you are a small quantity generator or a large quantity generator, you are required to ship your hazardous waste using a manifest and a U.S. EPA-permitted hazardous waste hauler. This includes transporters of used oil. Your chosen hauler must also have:

- A hazardous materials transporter registration with the U.S. Department of Transportation; and
- A hazardous materials/waste endorsement from the department of motor vehicles in the state in which they received their commercial driver's license.

Your chosen hauler may also need:

- A registration in the destination state for interstate transport if the destination state or pass-through state requires it.

Safety, Training and Equipment

You will want to make sure that the transporters you choose have health and safety programs in place. They should also train their employees in best management practices to minimize the potential for accidents or spills involving your waste. Transporters should have training programs which address:

- Use and inspection of safety and emergency equipment;
- Emergency response procedures and contingency plans including emergency response contractors;
- Container labeling and vehicle placarding, chemical compatibility, segregation, and securing of loads;
- Vehicle maintenance checks including a pre-trip safety inspection; and
- Substance abuse. They should have a stringent anti-drug policy. Ask to see their drug screening policy.

Transport companies should be able to supply you with training certificates and copies of inspection reports from previous inspections from regulatory agencies such as departments of transportation. Ask for copies of these documents if they do not supply them. You also may obtain a company's safety record, including the safety rating (if any), inspection summary and crash information, from the Safety and Fitness Electronic Records System at www.safersys.org (click on "Company Snapshot").

Liability and Insurance

To minimize your liability, be sure the services you select meet or exceed minimum liability requirements (a copy of the certificate of insurance will show the amount of insurance coverage held by the company).

Transporters should be able to provide you with a list of customers in your geographic area who generate a similar waste stream(s). Call some of them and ask about the length of service; satisfaction with service; company reliability; safety practices; whether there have been any spills, emergency incidents, or other mishaps; and any other information pertinent to your circumstances.

Ask your transporter what role they will play in passing your waste to another responsible party, be it another transporter, or to a treatment, storage or disposal facility. You will need to know if they plan on using other haulers to transport your waste or if it is going to be delayed in shipment in storage or in transfer facilities ("10 day" yards). Ask your transporter about their relationship with the treatment, storage or disposal facility. If they have a good relationship, it may make dealing with any off-specification issues easier.

Compliance Assistance

While you are responsible for the proper packaging and labeling/marking of your waste materials before offering them for transportation, a good/reputable waste hauler should be well trained in hazardous materials regulations and should be able to assist you. Their assistance, however, does not relieve your responsibilities as a generator. You should inquire about their methods of keeping current with the regulations. See if they offer any assistance to their customer such as publications, workshops or consulting services.

Cost

Talk to your transporter about minimum charges, surcharges, and demurrage. They may offer a reduced rate if you can comply with a milk run schedule that they set up. A "milk run" service allows you to share some of the transportation costs with other small quantity generators transporting drums on the same load. Speak with the haulers to see if they charge more for a small volume of material or drums or conversely will they discount prices for a larger volume? An oil hauler may be able to pick up good used oil for little to nothing if the volume is worth their effort. Ask about surcharges for issues with drums, loading and labeling/marking. Are they charging you for something you could handle yourself? What will they charge you if the treatment, storage or disposal facility holds the truck due to issues with your waste or paperwork? Will you be charged a demurrage rate?

Choosing a Waste Management Facility

In choosing a waste management facility, you will want to make sure that you are choosing a reputable company that is in compliance with all regulations. You should also look for companies that can handle your needs as you see them. Do you want a company that can handle all of your different waste streams, acting as a treatment facility for some while brokering other streams, or do you want various facilities for your various waste streams? Do you want a facility that also offers transportation or will schedule transportation for you? Many waste management companies offer an "audit package," a book that contains information on what the facility does, its history and permits.

Appendix I

Regulations and permit requirements required by treatment and disposal facilities vary depending on what type of material they handle and in what manner they manage the material. Recycling facilities will require fewer permits than treatment, storage or disposal facilities that are regulated under the Resource Conservation and Recovery Act (RCRA). Some wastewater treatment plants operate under a different set of regulations found in the Clean Water Act. There are other permits that may be required by IDEM's Office of Water Quality and Office of Air Quality. If your waste will be disposed of in another state, you will need to make sure that they comply with all of that state's requirements.

Required Permits, Etc.

If you are shipping your waste to a treatment, storage, or disposal facility you should make sure they have:

- A U.S. EPA/state identification number;
- The authorization to treat hazardous waste (e.g., a RCRA permit, interim status permit, or a variance for non-RCRA waste management); and
- All applicable local, regional, and state permits (e.g., National Pollutant Discharge Elimination System permit for industrial waste discharge, air permits, etc.).

Safety, Equipment and Training

You will want to make sure the facilities that will be receiving your waste operate under strict safety and training standards to minimize the potential for accidents or spills involving your waste. Treatment, storage or disposal facilities should have training programs which address:

- Facility evacuation;
- Use and inspection of safety and emergency equipment;
- Emergency response procedures and contingency plan implementation;
- Container labeling and vehicle placarding;
- Regular facility maintenance checks;
- Occupational Safety and Health Administration (OSHA) Hazardous Work Operations and Emergency Responses (HAZWOPER) training; and
- OSHA training specific to any equipment on site.

Contingency plans should designate equipment and trained personnel for emergency/spill response.

Treatment, storage or disposal facility operation plans should address all aspects of facility operations, including equipment maintenance and provisions for security (e.g., fencing and adequate warning signs).

All hazardous materials/waste handlers are required to have on-the-job and formal training that includes:

1. General training for recognition and identification of hazardous materials;
2. Function/job-specific training; and
3. Safety training (emergency response and accident/exposure prevention).

These training requirements may be met by a one-time 24 or 40-hour hazardous waste and operations training course and 8-hour annual refresher courses. If they generate or ship waste they will need U.S. Department of Transportation training.

Training records or copies of employee training certificates can verify fulfillment of training requirements. Training record information is also available in inspection reports. Ask to see documentation of training. You should also ask to see inspection reports from IDEM and Indiana Occupational Safety and Health Administration inspectors.

Inspection Records

Inspection records are a good way to determine if your waste handler is compliant with the regulations pertaining to its operation. Treatment, storage or disposal facilities located in Indiana are inspected by IDEM and may be inspected by U.S. EPA. If your waste is being shipped to another state, you will need to contact that state's regulatory agency. Inspections may include:

- Containers (including labeling requirements), tanks, and containment areas;
- Emergency equipment such as self-contained breathing apparatus units, fire extinguishers, showers, and eye wash facilities;
- Emergency lights, gates, and fences;
- Personal protection equipment; and
- Operation records, including training plans, contingency plans, closure plans, inspection plans, biennial reports, and compliance with financial and land disposal restriction requirements.

To obtain general site information and violation history on a treatment, storage or disposal facility, you can utilize U.S. EPA's Enforcement and Compliance History Online at www.epa.gov/echo. You may also wish to contact the better business bureau to see if there have been any business complaints regarding the treatment, storage or disposal facility.

References

Treatment, storage or disposal facilities should be able to provide you with a list of customers in your geographic area who generate a similar waste stream(s). Call some and ask about the length of service; satisfaction with service; company reliability; safety practices; whether there have been any spills, emergency incidents, or other mishaps; and any other information pertinent to your circumstances.

Disposal Options

As you remain responsible for your waste from “cradle to grave,” it is important that you know where your waste is going, how it is going to be managed, and the final disposition of any residues, ash, or empty containers. Ask how "off-spec" waste shipments will be handled. You may wish to ask for certificates of destruction or recycling. Ask if they plan to ship your waste to a third party. If they plan on using a third party, you should investigate the third party as closely as you have inspected your chosen treatment, storage or disposal facility. In determining the final disposition, you need to decide on what your future liability could be versus cost of disposal. If your waste is landfilled, you could be liable for any mishandling or future actions against the landfill owner. Incineration is not always appropriate for each type of waste and is more costly. Some facilities use third parties that are located in Canada. How do you feel about your waste being exported? Ask your treatment, storage or disposal facility what your options are and whether they will allow you to put limitations on how your waste is handled.

Contact more than one potential treatment, storage or disposal facility to get an idea of your options. Choose a service that will assist you in selecting the most cost-effective and environmentally-sound disposal option.

Choose options which minimize potential future liability. Whenever possible, have your hazardous wastes recycled, reclaimed, or treated, in that order of priority.

Compliance Assistance

It is important that your service provider keep up-to-date with hazardous waste transportation/ disposal requirements and regulations because the rules sometimes change. You should look for companies that have full-time environmental staff. For national companies, ask if they have regulatory staff at each location. Ask companies how they keep abreast of new requirements and choose one that is informed.

Some companies provide customers with private consultations, classes on proper labeling and manifesting, and/or newsletters highlighting new developments and regulations. Look for companies that will assist you in sampling, profiling, manifest preparation, and reporting requirements, as well as provide you with the 24-hour emergency phone number required for your hazardous waste shipments. Remember, however, it is still your responsibility to make sure that

all waste determinations, shipping, management, disposition and reporting are in compliance with state and federal regulations.

Cost

Ask your sales representative about minimum charges and options for reducing costs which may not be obvious (e.g., pick-up as needed vs. regularly scheduled pick-up).

Treatment, storage or disposal facilities must have a "profile" identifying a waste stream's characteristics before accepting it. This usually involves sampling and chemical analysis. Most treatment, storage or disposal facilities provide profiling services, but some may require or allow outside chemical analysis. Profiling fees range widely depending on what analysis they require. Shop around for reasonable rates. Disposal fees will vary depending on the type of waste and type of recycling/ treatment/disposal. Choose the option that will minimize current and future costs.

Finding Environmental Service Providers

There are several resources other than the yellow pages that may help you locate an environmental service provider, including:

Your local solid waste management district;

Your local chamber of commerce;

Neighboring businesses;

www.enviroyellowpages.com; and

www.earth911.com.

Site Visit

If possible, make a site visit before contracting for services. Look for:

- A clean and orderly site and well-maintained equipment/ vehicles;
- Clear hazard signs and safety warnings;
- Properly contained and organized hazardous waste storage areas (no large backlog or stockpiling of empty containers, etc.);
- Adequate supervision of operations and employees who are using proper safety precautions;
- Signs of spills or releases;
- Adequate security provisions (e.g., fences, locks, alarms, warning signs, etc.); and
- An organized record keeping system (how do they track manifests, how often do they inspect the facility, etc.).

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Appendix J

Sample Contract Language

Sample Contract Language for Tenants

I, _____ , understand that
(Name of Tenant)

_____
(Name of Marina/Boatyard)

subscribes to and enforces pollution prevention procedures. I further understand and agree that in return for the privilege of performing work on a boat at this facility, such as:

- Hull cleaning;
- Washing;
- Sanding;
- Polishing and/or painting;
- Bottom cleaning;
- Scraping, and/or painting;
- Opening the hull for any reason (e.g., installation of equipment or engine work);
- Engine and/or stern drive maintenance;
- Repair; and
- Painting; etc.,

it is my responsibility to comply with, at a minimum, the following pollution prevention practices. I understand that this list may not be complete and pledge that I will exercise common sense and judgment in my actions to ensure that my activities will not deposit pollution residues in surface waters or elsewhere where they may be conveyed by storm water run-off into the surface waters. I understand that failure to adopt pollution prevention procedures may result in expulsion from the above named marina/boatyard, and forfeiture of rental fees. I understand that I may elect to employ the facility to perform potential pollution producing activities on my behalf in which case the responsibility for compliance with the best management practices is entirely theirs.

_____ _____
(Signature of Tenant) (Month, Day & Year)

Sample Contract Language for Subcontractors

I, _____ understand and agree to
(Name of Subcontractor)

have my proposed work first authorized by:

_____
(Name of Marina/Boatyard)

and that I will adhere, at a minimum, to the contents of this document, which includes pollution prevention practices for:

A. Repairs and Service (to hull and engine: painting, cleaning, washing, sanding, scraping, etc.);
B. Vessel Maintenance Waste;
C. Fuel Operations;
D. Waste Oil and Fuel;
E. Onboard Practices;
F. Sewage Handling;
G. Organic Waste; and
H. Solid Waste.

I further understand that because of the nature of my proposed work, the facility may require that I be supervised by an employee of said facility for which I will pay the normal existing labor rate.

_____ _____
(Signature of Subcontractor) (Month, Day & Year)

Note

The sample contract language for tenants and subcontractors is based on New Jersey's Clean Marina Program. Electronic versions are available on the Web at www.IN.gov/dnr/naturepreserve/4839.htm.

Pollution Prevention Practices for Tenants and Subcontractors

A. **REPAIRS AND SERVICE**
(to hull and engine: painting, cleaning, washing, sanding, scraping, etc.)

1. Work on hulls and engines only in designated areas or use portable containment enclosures with approval of marina management.
2. Use tarps and vacuums to collect solid wastes produced by cleaning and repair operations, especially boat bottom cleaning, sanding, scraping, and painting.
3. Conduct all spray painting within an enclosed booth or under tarps.
4. Use nontoxic, biodegradable solvents.
5. Capture debris from boat washing and use only minimal amounts of phosphate-free, nontoxic, and biodegradable cleaners.
6. Use drip pans for any oil transfers, grease operations, and when servicing inboard/outboard motors and outboard motors.
7. Obtain management approval before and after repairs that open the hull.
8. Use spill proof oil change equipment.

B. **VESSEL MAINTENANCE WASTE**

1. Bag nontoxic residue from sanding, scraping, and grinding and dispose of it in your regular trash.
2. Seek specific directions from marina management on proper disposal of toxic and non-environmentally-safe solvents and cleaning liquids or use a licensed agency for disposal.

C. **FUEL OPERATIONS**

1. Install fuel/air separator on fuel tank vent line(s) to prevent overflow of fuel through vent.
2. Keep petroleum absorbent pad(s) readily available to catch or contain minor spills and drips during fueling.

D. **WASTE OIL AND FUEL**

1. Recycle used oil and antifreeze.
2. Add a stabilizer to fuel tank in the fall or an octane booster to stale fuel in the spring. Use the fuel or take it to a household hazardous waste collection site.
3. Drain liquid from absorbent materials soaked with oil or diesel and dispose of the liquid in the used oil recycling container. Double bag absorbent material in plastic and dispose of it in the regular trash receptacle.
4. Air dry absorbent materials soaked with gasoline (flammable) and reuse them.

5. Dispose of bioremediating absorbent products in the regular trash as long as no liquid is dripping. Because the microbes need oxygen to function, do not seal in plastic.
6. Drain oil filters and recycle the oil. Recycle the filter or double bag it and dispose of it in the regular trash.

E. **ONBOARD PRACTICES**

1. Maintain oil absorbent pads in bilge. Inspect no less than annually.
2. Do not discharge bilge water if there is a sheen to it.
3. Use only low-toxic antifreeze (propylene glycol). Recycle used antifreeze (even used low-toxic antifreeze contains heavy metals).

F. **SEWAGE HANDLING**

1. Never discharge raw sewage within waters of the state or Lake Michigan.
2. If you have an installed toilet, you must have an approved marine sanitation device.
3. Do not discharge Type I or Type II marine sanitation devices within the marina basin.
4. Use marina restroom facilities when at slip.
5. Do not empty port-a-pots overboard; use marina dump facility. Do not empty port-a-pots in the restrooms.
6. Do not discharge holding tanks overboard; use pumpout facility.
7. If you must use a holding tank additive, use an enzyme-based product. Avoid products that contain quaternary ammonium compounds, formaldehyde, formalin, phenol derivatives, alcohol bases, or chlorine bleach.
8. For live-boards, place a dye tablet in holding tank after each pumpout. The dye will make any illegal discharges clearly visible.

G. **ORGANIC WASTE**

1. Clean fish only in designated areas.
2. Grind, compost, or double bag fish scraps (depending on the services offered by your marina).
3. Walk pets in specified areas and dispose of their wastes, double-bagged, in the dumpster.

H. **SOLID WASTE**

1. Recycle plastic, glass, aluminum, and newspaper (tailor this section to fit your facility's practices).
2. Place trash in covered trash receptacles; replace covers.

Appendix K

Clean Boater Tip Sheets

- Fuel and Oil 177
- Sewage 179
- Boat Cleaning 181
- Bilges 183
- Solid Waste 185
- Boat Maintenance and Operation 187
- Aquatic Invasive Species 189

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Clean Boater Tip Sheet

Fuel and Oil

This boater used an absorbent towel to prevent drops of fuel from contaminating Lake Michigan.

Fuel and oil spills are not only unsightly and unpleasant smelling, they can cause significant harm to the environment. A single cup of spilled fuel or oil can contaminate an area the size of a football field. One quart of oil can create a slick over two acres, or three football fields, in size. Gas, oil, and other lubricants contain a potential pollutant known as petroleum hydrocarbons. These products also contain other toxic elements and metals. Over time, these pollutants settle to the lake or stream bottom and accumulate in the sediment. Aquatic organisms that feed along the bottom may ingest these pollutants and transmit them up the food chain to ultimately be consumed by a variety of wildlife or humans. You, as a boater on Indiana water, can be an active steward of this valuable resource by implementing these practices:

There are many absorbent products that catch drips and overflows, such as this fuel bib which slides over the fuel filler neck (Source: BoatU.S. Foundation).

Take Caution at the Fuel Pump

- Fuel your boat slowly and carefully.
- Attend the fuel nozzle at all times.
- Never "top off" your tank. Fuel expands as it warms.
- Listen. You'll hear a gurgling sound as the tank reaches full.
- Use your hand to feel for air escaping from the vent. An increase in air flow will happen as the tank approaches full.
- Use an absorbent fuel bib or collar at the fuel intake to capture spills or drips.
- Fuel portable gas tanks on shore where a spill is less likely to occur and easier to contain.
- Have a trained attendant fuel your watercraft for you.
- Consider installing a "fuel whistle" on your vent. This inexpensive device will confirm when your tanks are close to full.

Indiana Department of Environmental Management

Indiana Department of Natural Resources

Indiana Lake Michigan Coastal Program

Sea Grant Illinois - Indiana

Clean Boater Tip Sheet

Fuel and Oil

Handling Spills

- If you do have a spill while fueling, clean it up with an absorbent cloth. Dispose of the cloth appropriately.
- Do not use detergent to disperse the spill. This only exacerbates the problem.
- If fueling at a marina fuel dock and you have a spill, notify the fuel dock attendant or marina management immediately.
- Notify the U.S. Coast Guard National Response Center at (800) 424-8802 if there is a spill while underway.

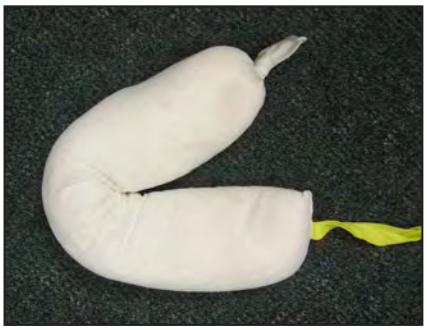
Absorbent Materials

- Reuse pads that are contaminated with fuel.
- Wring out pads contaminated with oil into an oil recycling container.
- Dispose of used absorbent materials according to the manufacturer recommendations or local regulations.

Bilges

Bilges can also be a significant source of pollution to the environment since they tend to collect fuel, antifreeze, oil, and transmission fluids. When the bilge is activated, these contaminants are pumped into the water.

- Use bilge socks to absorb oil in the bilge.
- Never discharge any bilge water that has an oily sheen.
- Maintain your engine to prevent spills and drips.
- Place a pan under the oil filter when doing an oil change or slip a plastic bag over the filter before removing it.
- Place an oil absorbent pad under the engine.



Bilge socks are used to prevent the discharge of oil and fuel into the marine environment (Source: Volusia County Environmental Management).

For More Information

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Telephone: (219) 464-0419

https://on.IN.gov/cleanmarina

Clean Boater Tip Sheet

Sewage

When sewage is dumped into a lake, stream, or other surface water, there is a potential for disease-causing pathogens to enter the water. These pathogens pose a risk to swimmers, anglers, and other people coming into direct contact with the water. Not only is there a risk to humans, there is a risk to fish and other aquatic life. As sewage breaks down in the aquatic environment, the bacteria that feed upon the sewage consume large amounts of oxygen from the water column. This in turn reduces the amount of oxygen available for fish. Many of our highly valued gamefish, including trout, salmon, yellow perch, and smallmouth bass, are especially prone to distress under low dissolved oxygen levels. Additionally, there are a number of chemical additives that are used in marine sanitary devices that can be of concern. You, as a boater on Indiana water, can be an active steward of this valuable resource by implementing these practices:

Handling Vessel Sewage

- Before heading out on the lake, use the restroom facilities at the marina.
- Use the marina's pumpout or dump station. These should be well marked. If there is not a pumpout or dump station at the marina in which you launch or moor, check with marina management. They may have a cooperative agreement to use another marina's pumpout station.
- Know your marine sanitation device to prevent accidental dumping.
- Use environmentally-friendly additives for your marine sanitation device.
- Follow the law—it is *illegal* to discharge sewage or waste into public waters *(Indiana Code 14-15-2-8)*.

Indiana Department of Environmental Management

- Find a pumpout location near you by visiting www.idem.IN.gov (keyword: pumpout) or by calling the Indiana Department of Environmental Management at (800) 451-6027.

Pumping a Boat's Holding Tank

1. Remove the cap from the boat's deck waste fitting.
2. Insert the hose nozzle into the deck fitting. (You may need an adapter to make it fit. Marinas generally have them available. They are also for sale in boat stores.)
3. Turn the pump on. If there is a hose valve, open it to start the suction.
4. When waste is no longer seen in the sightglass, close the hose valve, turn off the pump and remove the nozzle from the deck fitting.
5. If a water hose is available, rinse the boat's tank and pump it dry.
6. Put the pump nozzle (with open valve) in a water source and pump the water for 15 seconds to rinse the hose.
7. Close the hose valve. Put away the hose. Turn off the pump and replace the deck fitting cap.

Look for Pumpout Stations. Do Not Dump Overboard!

For More Information

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Clean Boater Tip Sheet

Boat Cleaning

Some of the common solvents and cleaners that are used by boaters can cause harm to the aquatic environment if care is not taken during their use. Some cleaning products contain harsh chemicals such as chlorine, ammonia, and phosphates that can harm fish and wildlife. While some boaters may not consider there to be much harm in cleaning a single boat, consider the dozens or hundreds of boaters in the marina who are doing the same thing. Due to the sheltered environment in which marinas are located, pollutants tend to build up within their basins.

Wash the boat hull above the waterline by hand. Where feasible, remove the boat from the water and perform cleaning where debris can be captured and properly disposed (Source: U.S. EPA).

Some of the chemicals contained in cleaners or antifouling paints can bioaccumulate in aquatic organisms. That is, they become more concentrated as they are ingested successively by animals higher up on the food chain to ultimately be consumed by a variety of wildlife or humans. You, as a boater on Indiana water, can be an active steward of this valuable resource by implementing these practices:

Environmentally-Friendly Boat Cleaning

- Whenever possible, clean as much of your boat as you can before launching it for the season. Wash the boat on land in a contained area where the wash water can be collected and treated.
- While in the water, wash your boat above the waterline by hand with a sponge and plain water and do it frequently enough so that the need to use harsh chemicals is reduced.
- Use cleaning products that are environmentally friendly (e.g., non-toxic or phosphate-free). Always follow the instructions on the label and test the product in an inconspicuous area. Use the products sparingly and only when "elbow grease" is not working. Beware of biodegradable cleaners that may still be toxic.

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Clean Boater Tip Sheet

Boat Cleaning

- Use the recipes for home-made non-toxic cleaning alternatives that are listed in the *Boat Cleaning* section of the *Indiana Clean Marina Guidebook* available on the Web at www.IN.gov/dnr/naturepreserve/4839.htm.
- Avoid using caustic cleaners such as bleach, ammonia or lye. Do not use petroleum-based cleaning products.
- Keep your boat waxed. A good coat of wax helps prevent surface dirt from becoming ingrained in the hull and makes your boat easier to clean later.
- Try not to clean your boat below the waterline while it is in the water. Chips of antifouling paint can be displaced into the water where they can potentially cause harm to fish and other organisms that fish feed upon.

This professional boat cleaning service uses "elbow grease" and environmentally-friendly cleaning products. Their practice of washing boats on land reduces pollution to the marina basin.

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Clean Boater Tip Sheet

Bilges

Use bilge socks to absorb oil (Source: Jay Tanski, New York Sea Grant).

Bilges can be a major source of pollution in marinas. They tend to collect engine oil, fuel, antifreeze, and transmission fluid. Fuel, oil, and other lubricants contain a potential pollutant known as petroleum hydrocarbons. These products also contain other toxic elements and metals. When the bilge pump is activated manually or automatically, these pollutants are pumped overboard into the water. Over time, these pollutants settle to the lake or river bottom and accumulate in the sediment. Aquatic organisms that feed along the bottom may ingest these pollutants and transmit them up the food chain to ultimately be consumed by a variety of wildlife or humans. You, as a boater on Indiana water, can be an active steward of this valuable resource by implementing these practices:

Control Spills and Drips in the Bilge

- Avoid discharging bilge water that has an oily sheen.
- Use bilge socks or absorbent pads to collect floating oil and fuel in the bilge.
- Replace these pads when they are heavily saturated or soiled.
- Properly recycle (if available) or dispose of used absorbents.
- Maintain your boat's engine—no leaking hoses, gaskets or seals.
- Change engine oil using nonspill vacuum-type systems.
- Use antifreeze that is less toxic to the environment (propylene glycol-based).
- Trailer your boat to an area that can contain or treat bilge water before removing the bilge or boat plugs.
- Install a bilge pump switch that leaves an inch or two of water in the bilge.
- Install a bilge water filter to your vessel's bilge. Filters will remove oil and fuel from the water.

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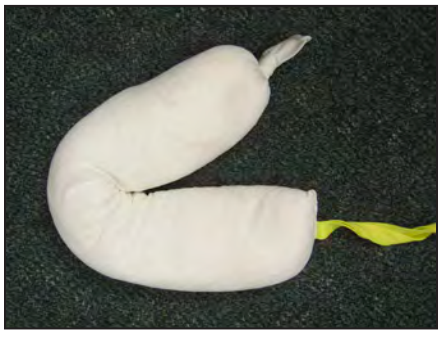
Sea Grant Illinois - Indiana

- Do not use bilge cleaners when pumping to a waterbody. These cleaners simply disperse the oil and do not remove it from the bilge water.
- Slip a plastic bag over filters before removing them to catch drips.
- Look for contractors or marinas that offer bilge pumpout services.

Handle Spills Appropriately

- Stop the flow and contain the spill.
- If you have a minor spill, clean it up with a rag.
- If there is an oil or fuel spill in the water, do not use detergent to disperse it. Immediately notify the marina office so that the spill can be handled in an appropriate manner.
- Notify the U.S. Coast Guard National Response Center at (800) 424-8802 if there is spill while underway.

The use of a bilge sock would help prevent oil collected in the bottom of this bilge from being discharged to the lake (Photo by Joe Exl, IDNR).



Absorbent bilge sock (Source: Volusia County Environmental Management)

For More Information

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Clean Boater Tip Sheet

Solid Waste

Solid waste such as bottles, cans, fishing line, plastic bags and other refuse can injure or kill aquatic life and birds by trapping or entangling them. Not only is trash unsightly, it can also foul props or water intakes of boats or other equipment. You, as a boater on Indiana water, can be an active steward of this valuable resource by implementing these practices:

Recycle your fishing line to prevent entanglement of fish and wildlife.

Controlling Solid Waste

- Have a waste container on your boat. The best policy is to carry out what you carry in. You might consider going one step further and carry out any trash less thoughtful people may have left behind.
- Use recyclable containers and reusable bags. Minimize the use of plastic wrap and disposable bags while out on your boat.
- Don't toss garbage, including cigarette butts, overboard.
- If trash blows overboard, make an effort to retrieve it.

- Recycle oil, batteries, plastic, metal, glass and newspaper.
- Recycle fishing line or dispose of it properly. Some marinas and sporting goods stores offer fishing line recycling.
- Find out if your marina recycles shrink wrap used for winter storage. Recycle your shrink wrap if possible.
- Properly dispose of unwanted waste chemicals by utilizing the household hazardous waste collection program in your community.
- Clean up after your dog and deposit waste in a trash can or appropriate receptacle.

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Clean Boater Tip Sheet

Solid Waste

- Use the marina's trash cans and recycling bins and replace the lids after using them so that waste does not blow out of them.
- Cut the rings of six pack holders prior to disposal.
- Clean your fish at a fish cleaning station—not at the dock—to keep the marina cleaner, keep odors down and reduce nuisance birds and pests. Disposing of fish waste in the marina basin is prohibited. If there are no disposal options, double bag the fish waste and dispose of it with the regular trash.
- If your marina has a fish waste composting program, compost your fish waste.
- Avoid feeding wild birds, including ducks, geese and seagulls, in the marina. Feeding birds encourages them to flock to the marina and become long-term residents. The birds' waste can contaminate water and create a mess on boats and walkways.

Use trash and recycling bins at your marina.

Some marinas offer battery recycling.

For More Information

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Clean Boater Tip Sheet

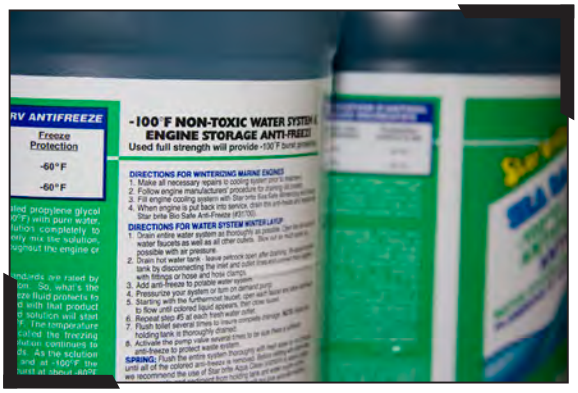
Boat Maintenance and Operation

The general maintenance of boats can generate pollutants and waste products (i.e., hazardous waste) that can be harmful to the environment. Some of these potential pollutants include solvents, paints, lubricants, oil, antifreeze, fuel, batteries, and bilge switches that contain mercury. Proper use, storage, and disposal are key to keeping these pollutants out of the environment. You, as a boater on Indiana water, can be an active steward of this valuable resource by implementing these practices:

Oil Filter Recycling Containers (Photo by Cathy Csatari, IDEM).

Managing and Preventing Hazardous Waste

- Recycle used oil, oil filters, antifreeze, and other fluids at your marina, or contact your solid waste management district or local automotive store to determine what recycling services they offer.
- Trade in used batteries when purchasing new ones. Many stores offer "core" credits towards the purchase of a new battery.
- Manage used compact fluorescent light bulbs, which may contain mercury, in an environmentally-sound manner. Contact your local solid waste management district for recycling and disposal options.



Use non-toxic or less toxic antifreeze.

- Share leftover paints, varnishes, and other chemicals with other boaters.
- If possible, purchase bilge switches that do not contain mercury.
- Use environmentally-friendly products such as antifreeze formulated with less toxic propylene glycol (instead of highly toxic ethylene glycol), water-based paints (instead of solvent-based paints), and low volatile organic compound coatings as long-lasting and non-toxic antifouling paint when possible.

Indiana Department of Environmental Management

Indiana Department of Natural Resources

Indiana Lake Michigan Coastal Program

Sea Grant Illinois - Indiana

Clean Boater Tip Sheet

Boat Maintenance and Operation

Maintaining Your Boat

- If your marina allows do-it-yourself boat maintenance on site, perform repairs and maintenance activities in designated areas and follow your marina's "yard rules."
- Routinely check your engine for fuel leaks and your fuel lines for signs of wear.
- Use drip pans under engines when performing maintenance procedures.
- Install fuel/air separators on inboard fuel tank air vents to help reduce the amount of fuel spilled into surface waters while fueling.

Operating Your Boat

Boat traffic and operation can significantly impact shallow water habitats. Boat wakes can erode shorelines and uproot submergent and emergent plants. This leads to reduced habitat for fish and wildlife and increases suspended sediment loads. Suspended sediment reduces the amount of sunlight penetrating the water column and shades out submerged plants that are important to fish for habitat and oxygen production.

When recycling used oil, be careful not to spill it on the ground. This used oil collection container has a secondary containment tray which helps to catch spills and prevent releases to the environment (Photo by Cathy Csatari, IDEM).

- Keep your watercraft away from sensitive, shallow water habitat areas and established "no boating" zones.
- When in a "no wake" zone, operate your watercraft at the slowest possible speed *(idle speed or less per Indiana Code 14-15-3-17)* that allows you to maintain steering and make headway with minimal wake.
- Winch your watercraft onto boat trailers instead of power loading your boat onto the trailer. The strong current created by the boat's propeller causes severe erosion and washout at the end of the ramp.

For More Information

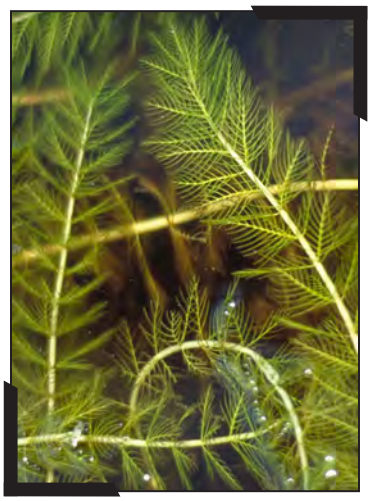
Indiana Department of
Environmental Management
Clean Marinas Program Coordinator
330 West U.S. Highway 30, Suite F
Valparaiso, Indiana 46385
Telephone: (219) 464-0419

https://on.IN.gov/cleanmarina

Clean Boater Tip Sheet

Aquatic Invasive Species

The waters of the Midwest are under attack by aquatic invasive species, also called "exotic" or "nonindigenous," because they are not native to our waters. Many came from Europe and Asia in the ballast waters of ships, and they are spreading at alarming rates. In several cases, they are having negative impacts on our native species and habitats.

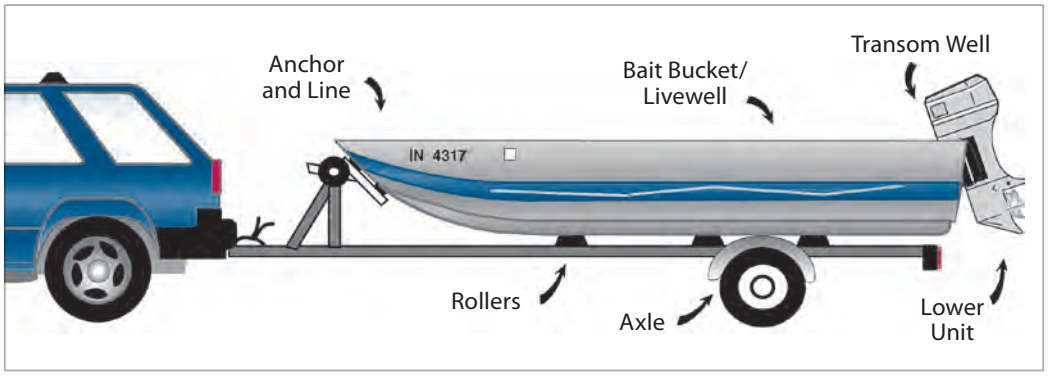


Eurasian Watermilfoil (Source: Alison Fox, University of Florida, Bugwood.org)

Some of these species are spreading as "hitchhikers" on boats and other recreational equipment. Whenever you leave a body of water without cleaning your equipment, you may be taking one of these harmful organisms with you. If you then travel to other waterways, you could inadvertently be spreading that invader. You, as a boater on Indiana water, can be an active steward of this valuable resource by implementing these practices:

Before Leaving the Boat Launch

- Inspect your boat, trailer and equipment and remove any plants, sediment and animals (see illustration below).
- Drain, on land, all water from the motor, livewell, bilge and transom well. Some invasives may not be visible to the naked eye.
- Empty your bait bucket on land to help prevent the spread of invasive species and fish diseases.



Source: Minnesota Department of Natural Resources

Indiana Department of Environmental Management

Clean Boater Tip Sheet Aquatic Invasive Species

After Leaving the Boat Launch

Two bighead carp demonstrating a size comparison (Source: David Riecks, University of Illinois at Urbana-Champaign, Illinois-Indiana Sea Grant College Program)

- Wash your boat, tackle, trailer and other equipment with 104° tap water or a high-pressure sprayer to kill any exotic species not visible at the boat launch. Or, allow your boat and other equipment to thoroughly dry for at least five days before moving to another body of water—some invasives can survive for long periods of time out of water.
- If you have used your watercraft on the Great Lakes, where a fish disease called viral hemorrhagic septicemia has spread, disinfect the outside and inside of your watercraft and your gear after using them. Mix 1 cup bleach in 10 gallons of water and brush/mop watercraft and trailer surfaces. Test dilute bleach solution in an inconspicuous location prior to applying to the entire watercraft and trailer. Keep the surface wet for five minutes, then rinse with clean water. Disinfection should occur away from lakes, rivers and storm drains because chlorine is toxic to aquatic life.

Other Helpful Practices

- Do not use fish parts as bait or chum. This practice helps prevent the spread of viral hemorrhagic septicemia and other fish diseases.
- Help prevent the spread of invasive species and fish diseases by not transferring fish, fish eggs or other aquatic organisms between waterways. Private pond owners who fish on Indiana's or other states' waterways would also benefit from the same advice.
- Learn what aquatic invasive species look like by viewing images at www.IN.gov/dnr/3123.htm and the websites listed on this page. Become familiar with Eurasian Watermilfoil, Round Goby, Zebra Mussel, Spiny Waterflea, Bighead Carp, Silver Carp, Phragmites and Purple Loosestrife, to name a few. Know which waterways are infested and report any new infestation to the Illinois-Indiana Sea Grant at (847) 872-8677 or the Indiana Department of Natural Resources' (IDNR) Division of Fish and Wildlife at (317) 234-3883.
- Talk with the staff of IDNR's Division of Fish and Wildlife and the Illinois-Indiana Sea Grant for further recommendations on controlling the spread of aquatic invasive species and any permit requirements before applying any control methods.

For More Information on Aquatic Invasive Species

Preventing the spread of aquatic invasive species:
www.protectyourwaters.org

Invasive species:
www.IN.gov/dnr/3123.htm

Illinois-Indiana Sea Grant:
www.iisgcp.org

Appendices L – N

Appendix L

Additional Contact Information 193

Appendix M

Emergency Planning and Community Right to Know Act of 1986 197

Appendix N

References 203

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Appendix L

Additional Contact Information

Subject	Agency or Organization	Contact Information
Air Quality	Indiana Department of Environmental Management – Office of Air Quality	(317) 233-0178 or toll-free at (800) 451-6027, press 0 and request ext. 3-0178
Aquatic Invasive Species	Indiana Department of Natural Resources – Division of Fish and Wildlife	(317) 234-3883
	Illinois-Indiana Sea Grant	(847) 872-8677 or www.iisgcp.org
	Protect Your Waters	www.protectyourwaters.org
Boater Education Course Information	Indiana DNR – Division of Law Enforcement	http://boat-ed.com/indiana
Clean Marina Program	IDEM – Northwest Regional Office	(219) 464-0419 or www.IN.gov/dnr/nature-preserves
Clean Vessel Act Pumpout Program	IDEM – Office of Pollution Prevention and Technical Assistance	(800) 988-7901 or (317) 233-6663
Coastal Dynamics – Lake Michigan	Indiana DNR – Division of Water, Lake Michigan Specialist	(219) 874-8316
Coastal Resource Management	Indiana DNR – Lake Michigan Coastal Program	(317) 233-0132 www.IN.gov/dnr/lakemich
Compliance (Technical)	IDEM – Office of Land Quality, Technical Compliance Section	(317) 308-3040 or toll-free at (800) 451-6027, press 0 and request ext. 308-3040
Confidential Compliance and Technical Assistance Program	IDEM – Office of Pollution Prevention and Technical Assistance	(800) 988-7901 or (317) 232-8172
Construction, Permitting, Wastewater Treatment & Sanitary Sewers	IDEM – Office of Water Quality	(317) 232-8660 or toll-free at (800) 451-6027, press 0 and request ext. 2-8660
Dredging, Fill or Construction in "Waters of the State" or "Waters of the U.S."	Indiana DNR – Division of Water	(877) 928-3755 or (317) 232-4160
	IDEM – Section 401 Water Quality Certification Program	(317) 233-8488
	United States Army Corps of Engineers – District Offices	www.usace.army.mil/locations.aspx

Appendix L

Additional Contact Information

Subject	Agency or Organization	Contact Information
Emergency Hotline	IDEM's Spill 24-Hour Emergency Hotline	(317) 233-7745 (local and out-of-state) or toll-free at (888) 233-7745 (in-state only)
Emergency Response	IDEM – Office of Land Quality, Emergency Response	(317) 308-3017 or toll-free at (800) 451-6027, press 0 and ask for ext. 308-3017
Endangered Species Act	U.S. Fish & Wildlife Service, Northern Indiana Sub-office	(219) 983-9753
Fire and Building Safety	Indiana Department of Homeland Security – Division of Fire & Building Safety	Indiana Government Center South 402 West Washington St., Room E-241 Indianapolis, IN 46204-2739 Phone: (317) 232-2222 or (800) 423-0765 Fax: (317) 233-0307 www.IN.gov/dhs
Fish and Wildlife	Indiana DNR – Division of Fish & Wildlife	(317) 232-4080
	U.S. Fish & Wildlife Service, Northern Indiana Sub-office	(219) 983-9753
	U.S. Fish & Wildlife Service, Bloomington Ecological Services Field Office	(812) 334-4261
Hazardous Waste	IDEM – Office of Land Quality	(317) 232-8941
Health and Safety	Indiana Department of Labor – INSafe Division INSafe is an excellent tool for Indiana small business in any industry. INSafe's goal is to assist employers in becoming self-sufficient in the implementation of safety and health programs.	402 West Washington Street, Room W195 Indianapolis, Indiana 46204 Phone: (317) 232-2655 Fax: (317) 233-1868 www.IN.gov/dol/insafe.htm
Household Hazardous Waste Collection	Directory of local household hazardous waste collection sites	www.IN.gov/recycle/5724.htm
	Lake County Solid Waste Management District	(219) 769-3820

Appendix L

Subject	Agency or Organization	Contact Information
Household Hazardous Waste Collection *(continued)*	Solid Waste District of LaPorte County	(800) 483-7700
	Recycling & Waste Reduction District of Porter County	(219) 465-3694
Indiana Department of Environmental Management's Regional Offices	Northern Regional office (South Bend)	(574) 245-4870 or toll-free at (800) 753-5519
	Northwest Regional Office (Merrillville)	(219) 757-0265 or toll-free at (888) 209-8892
	Southeast Regional Office (Brownstown)	(812) 358-2027 or toll-free at (877) 271-0074
	Southwest Regional Office (Petersburg)	(812) 380-2305 or toll-free at (888) 672-8323
Poaching/Polluting	Indiana DNR – Division of Law Enforcement	1-800-TIP-IDNR or www.IN.gov/dnr/lawenfor/2755.htm (list of districts and headquarters)
	Indiana DNR – Division of Law Enforcement District 10 Headquarters 100 W. Water St. Michigan City, IN 46360	(219) 879-5710 or 1-800-TIP-IDNR
Publicly Owned Treatment Works (POTW) (i.e., wastewater treatment plant)		www.IN.gov/idem/4882.htm (list of the 45 POTWs with approved wastewater pretreatment programs)
Solid Waste (trash and recycling)	Directory of Indiana Solid Waste Management Districts	www.IN.gov/recycle/5758.htm
	Directory of local household hazardous waste collection sites	www.IN.gov/recycle/5690.htm
	Lake County Solid Waste Management District	(219) 769-3820
	Solid Waste District of LaPorte County	(800) 483-7700
	Recycling & Waste Reduction District of Porter County	(219) 465-3694

Subject	Agency or Organization	Contact Information
Solid Waste Compliance	IDEM – Office of Land Quality, Solid Waste Compliance Section	(317) 308-3045 or toll-free at (800) 451-6027, press 0 and request ext. 308-3045
Solid Waste Management Districts	Solid waste management districts assist with household hazardous waste and recycling and provide waste handler contacts. Some also assist conditionally exempt small quantity generators.	www.IN.gov/recycle/5758.htm (directory of Indiana solid waste management districts)
Spill Reporting	IDEM's emergency response and spill reporting hotline	(317) 233-7745 or (888) 233-7745 (toll-free in Indiana)
	Other state and federal agencies	See the Emergency Response Phone Directory in Appendix F
Storm Water Run-off Regulations	IDEM – Office of Water Quality, Wet Weather Section	(317) 233-1864 (Rule 5) (317) 233-0202 (Rule 6) (317) 234-1601 (Rule 13)
Transportation	Indiana Department of Transportation (INDOT)	100 N. Senate Ave., Room IGCN 755 Indianapolis, IN 46204 (317) 232-5533 www.IN.gov/indot/index.htm
Underground Storage Tanks	IDEM – Office of Land Quality, Underground Storage Tanks	(317) 308-3039
Volunteer Water Quality Monitoring	Indiana DNR – Hoosier Riverwatch	(317) 541-0617 www.IN.gov/dnr/nrec/3046.htm
Water Quality (General Information)	IDEM – Office of Water Quality	(317) 232-8476 or toll-free at (800) 451-6027, press 0 and request ext. 2-8476
Water Quality Data (Water Chemistry, Biological, and Habitat)	IDEM – Office of Water Quality Assessment Branch	(317) 308-3173
	Indiana DNR – Division of Fish and Wildlife	(317) 232-4080
	Indiana DNR – Hoosier Riverwatch	(317) 541-0617 or www.IN.gov/dnr/nrec/3046.htm
	U.S. Geological Survey	(317) 290-3333

Appendix M

Emergency Planning and Community Right to Know Act of 1986

Superfund Amendments and Reauthorization Act of 1986 (SARA Title III)

Introduction

The Emergency Planning and Community Right to Know Act of 1986 (EPCRA), found in Title 40, Part 355, of the Code of Federal Regulations (40 CFR 355), is a federal law that is enforced by the United States Environmental Protection Agency and managed by the state emergency response commission and local emergency planning committees. EPCRA applies to the storage and handling of hazardous materials. EPCRA requires that facilities report storage of certain chemicals above a certain amount to the state and local authorities. This law is called both EPCRA and SARA Title III. In this section, it will be referred to as EPCRA.

The purpose of EPCRA is twofold:

1. "Encourage and support industry's emergency planning for response to chemical accidents (in coordination with state and local governments) through emergency planning and emergency notification."
2. "Provide local governments and the public with information about possible chemical hazards in their communities by requiring facilities to (a) report to their state emergency response commission, local emergency planning committees, and local fire departments their hazardous chemical inventory, and (b) report to federal and state authorities their toxic chemical releases and other waste management practices" (U.S. EPA, 1999).

Listed below are the different sections of EPCRA regulations.

- Emergency planning (EPCRA Sections 301-303)
- Emergency release notification (EPCRA Section 304)
- Hazardous chemical inventory and reporting (material safety data sheet and Tier reporting) (EPCRA Sections 311 and 312)
- Toxic chemical release reporting (EPCRA Section 313)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA Section 103)
- Sections 301-303, 311, and 312 are related to chemicals present in a facility. Section 313 includes regulations related to chemicals manufactured, processed, or otherwise used in a facility. Regulations related to emergency notification of a release of specific substances are described in the EPCRA Section 304.

Emergency Planning

(EPCRA Sections 301-303)

The emergency planning section of the law is designed to help communities prepare for and respond to emergencies involving hazardous substances. Every community in the United States must be part of a comprehensive plan. It starts at the state level with a state emergency response commission (SERC). In turn, the SERC designates local emergency planning districts. For each district, the SERC appoints, supervises and coordinates the activities of a local emergency planning committee (LEPC). The LEPC must, in turn, develop an emergency response plan for its district and review it annually. The membership of the LEPC includes representatives of public and private organizations as well as a representative from every facility subject to EPCRA emergency planning requirements.

What are the required elements of a community emergency response plan?

- Identify facilities and transportation routes of extremely hazardous substances;
- Describe emergency response procedures, on and off site;
- Designate a community coordinator and facility coordinator(s) to implement the plan;
- Outline emergency notification procedures;
- Describe how to determine the probable affected area and population by releases;
- Describe local emergency equipment and facilities and identify the persons responsible for them;
- Outline evacuation plans;
- Provide a training program for emergency responders (including schedules); and,
- Provide methods and schedules for exercising emergency response plans.

What do facilities need to report?

If you store any of the 385 listed "extremely hazardous substances" in excess of the listed threshold planning quantity, you are required to complete a "Section 302 – Emergency Planning Notification Form" and submit it to the Indiana Emergency Response Commission AND your local emergency planning district within 60 days of when the substance becomes present at the facility. If you are required to file a "Section 302 – Emergency Planning Notification Form" you must also designate a facility emergency coordinator who will be the emergency contact person for your facility.

For the U.S. Environmental Protection Agency's "Alphabetical Order List of Extremely Hazardous Substances," refer to Appendix A of 40 CFR 355 which can be found at ecfr.gpoaccess.gov.

What might be reportable under Section 302 at your marina?

- **Sulfuric Acid** [Chemical Abstract Service (CAS) Number 7664-93-9]:
  Sulfuric acid, which is found in lead acid batteries, is reportable under Section 302 if your marina maintains an inventory of sulfuric acid in excess of 1,000 pounds. This amount includes all the sulfuric acid in batteries stored on site AND on your customers' boats. The average small boat battery contains approximately five pounds of sulfuric acid. Therefore, if you have over 200 batteries at your facility, including batteries for sale, batteries stored for recycling and batteries on your customers' boats, you must file a "Section 302 – Emergency Planning Notification Form."

- **Chlorine** (CAS Number 7782-50-5):
  If you store chlorine, a water treatment chemical, in a liquid, granular or gaseous state in excess of 100 pounds, you must file a "Section 302 – Emergency Planning Notification Form." Pool tablets and powdered chlorine typically are NOT the same thing. Please look at the CAS number on the product.

Accidental Release Notification

(EPCRA Section 304)

Facilities must immediately notify their local emergency planning committee and the Indiana Emergency Response Commission if there is a release of a hazardous substance in excess of the minimum reportable quantity set under EPCRA or in excess of the reportable quantity of a chemical listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) (40 CFR 302.4). If the spill meets the requirements set forth in 40 CFR 110 and 40 CFR 116 it may be reportable to the National Response Center (NRC) at (800) 424-8802. If you are unsure whether to report the spill to the NRC, it is better to report than not. Not reporting can result in fines.

Under EPCRA, you are not required to report a spill to the federal government above the reportable quantity if the release:

- Does not affect persons off-property;
- Is federally permitted;
- Is a continuous release, except when statistically significant;

- Is of certain nuclear material;
- Results from pesticide or fertilizer application;
- Is petroleum, unless an "extremely hazardous substance" is present (Note: This does not exempt you from reporting an oil spill to the state and federal authorities as required by the spill prevention, control and countermeasures plan.

Notification should be made first by telephone, radio or in person. If the spill was a result of a transportation incident, notification requirements can be met by calling 911. The notification needs to include:

- The chemical name;
- An indication of whether the substance is extremely hazardous;
- An estimate of the quantity released;
- The time and duration of the release;
- Whether the release occurred into air, water, and/or land;
- Any known or anticipated acute or chronic health risks associated with the emergency and, where necessary, advice regarding medical attention for exposed individuals;
- Proper precautions, such as evacuation or sheltering in place; and
- The name and telephone number of the contact person.

A written notice to the Indiana Emergency Response Commission and your local emergency planning committee must be sent as soon as practicable after the release. The notice should include an update of information included in the initial notice and response actions that were taken.

Reporting Hazardous Chemicals "Community Right to Know Requirements"

EPCRA Section 311 (List of Chemicals Form)

The Occupational Safety and Health Administration (OSHA) requires employers to keep copies of materials safety data sheets (MSDSs) for each hazardous chemical used or stored on site. The MSDSs need to be kept in a location available to all employees and kept current. Distributors are required to provide MSDSs for hazardous substances (29 CFR 1910-1200).

If you have chemicals on site that are required under OSHA to have an MSDS and you meet one of these following conditions, you are required to complete a "Section 311 – List of Chemicals Form."

1. You store one or more substances listed as an "extremely hazardous substance" in quantities equal to or greater than the listed "threshold planning quantity" or 500 pounds, whichever is less. The list of "extremely hazardous substances" and their "threshold planning quantities" can be found in Appendix A of 40 CFR 355 at ecfr.gpoaccess.gov.
2. You store 10,000 pounds or more and any hazardous substance requiring an MSDS.

EPCRA Section 312 – Annual Tier II Reporting

If you fall into one of the above categories and are subject to Section 311 reporting requirements, you must also submit an annual "Tier II Emergency and Hazardous Chemical Inventory" form. This form requires that you inventory your facility's hazardous chemicals and identify their storage locations. The Tier II report must be submitted to the Indiana Emergency Response Commission, your local emergency planning committee, and your local fire department each year by March 1st.

What might a marina have to report under Section 311 and Tier II?

- **Gasoline, Diesel Fuel, Propane or Fuel Oil**:
  If you store gasoline, diesel fuel, propane or fuel oil (all of which require MSDSs) in excess of 10,000 pounds, you must report under Section 333 and Tier II. This amount does not include fuel in boats dockside. According to the MSDS, gasoline weighs about 6.19 pounds per gallon, diesel around 7.05 pounds per gallon, and propane around 4.23 (60° F) pounds per gallon. If you store over 1615 gallons of gasoline on site, you would need to report. This does not include the fuel in the boats dockside.

- **Sulfuric Acid**:
  You must also report the sulfuric acid in lead acid batteries if your marina maintains an inventory of sulfuric acid in excess of 500 pounds. The average 12-volt boat battery contains 2-4 quarts of sulfuric acid. Larger yacht-type boats may have significantly larger batteries. In the calculation for the sulfuric acid in batteries, you should add together all batteries stored (before or after use) and used on site for commercial purposes (batteries for sale, forklift truck batteries and generator batteries). This reporting requirement does not apply to the batteries that boaters can physically move on and off their boats.

- **Lead**:
  You may also have to report for lead. The amount of lead found in typical marine batteries can vary depending on the make and model. The typical battery contains 60% lead. If you add all the lead in the batteries you store (before or after use) and use on site for commercial purposes (batteries for sale, forklift truck batteries and generator batteries) and it totals 500 pounds or more, you will need to include lead in the Tier II report.

Toxic Release Inventory EPCRA Section 313

It is unlikely that any marina in Indiana will be subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986. If you meet all of the following criteria, you must file a "Toxic Chemical Release Inventory Form" by July 1st each year to both the Indiana Toxic Release Inventory (TRI) Data Processing Center (formerly the EPCRA Reporting Center) and U.S. EPA's EPCRA Reporting Center.

- Your facility must be included in the Standard Industrial Classification (SIC) Codes 10 (except 1011, 1081, 1094), 12 (except 1241), 20-39, and with limitations 4911, 4931, 4939, and 4952. A marina may be listed under major group 3700 if it engages in manufacturing equipment for transportation of passengers and cargo by water such as ships and boats
- You have 10 or more full-time employee equivalents (a total of 20,000 or greater; see 40 CFR 372.2)
- You manufacture, process or otherwise use an EPCRA Section 313 chemical in quantities greater than the established threshold in the course of a calendar year.

For More Information

Contact the Emergency Planning and Community Right to Know Information Hotline at (800) 424-9346 or (800) 535-7672 (via Telecommunications Device for the Deaf) for more information on EPCRA, TRI and the Community Right to Know Act, or visit the Web at:

www.epa.gov/emergencies/content/epcra/index.htm

Appendix N

References

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Indiana Department of Environmental Management (IDEM). *Compliance Manual for Indiana Auto Salvage Facilities.* April, 2007

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United States Environmental Protection Agency (U.S. EPA), Office of Water. November, 2001. *National Management Measures to Control Nonpoint Source Pollution from Marinas and Recreational Boating.* EPA 841-B-01-005. Washington, DC.


https://on.IN.gov/cleanmarina