Environmental Compliance, Pollution Prevention, and Self-Assessment Guide for the Marina Industry

March 2003

New York State Department of Environmental Conservation
Pollution Prevention Unit

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TABLE OF CONTENTS

Introduction 1

Pollution Prevention and the Marina Industry 2
- Best Management Practices 3
- Invasive Species Management 5
- Marine Vessel Waste Management 7

Environmental Self-Assessment 9
- General Best Management Practices 10
- General Operating Procedures 11
- Materials Handling, Inventory Control and Storage 12
- Spill and Leak Prevention 13
- Waste Management 14
- Parts Cleaning and Degreasing 16
- Shop Cleanup 17

Regulations 18
- Air Regulations 18
  - Permits and Registration - 6 NYCRR Part 201 19
    - Exemptions 19
    - Minor Facility Registration 20
    - State Facility Permit 21
    - Title V Facility Permit 21
    - General Process Emission Sources- 6 NYCRR Part 212 22
    - Solvent Metal Cleaning Process- 6 NYCRR Part 226 22
    - Surface Coating Operations- 6 NYCRR Part 228 23
    - Record Keeping 24
  - How To Calculate Your VOC Emissions 24
  - Part 230- Gas Dispensing Facilities 25
- Water Regulations 26
  - Can You Treat Or Recycle Your Wastewater? 26
  - Wastewater Discharge Requirements 26
  - Permitting Requirements 27
  - Nonpoint Source Pollution 27
    - Stormwater Management 27
  - Best Management Practices 29
- Hazardous Waste Regulations 30
  - Hazardous Waste Determination 30
  - Hazardous Waste Categories 32
    - Conditionally Exempt Small Quantity Generator 32
    - Small Quantity Generator 32
    - Large Quantity Generator 35

Universal Waste . . . 36
Requirements . . . 36
Proper Handling and Storage . . . 37
Lamp Crushers . . . 37
Freshwater Wetlands Regulations . . . 38
Permit Exemptions . . . 38
Permitting . . . 39
Protection of Waters- Article 15, Title 5 of ECL . . . 41
Protection of Waters . . . 41
Typical Marina Projects Requiring DEC Permits . . . 41
DEC Permit Application Requirements . . . 41
Other Agencies That May Be Involved With Regulations of Marinas . . . 42
Solid Waste Regulations . . . 43
Bulk Storage Regulations . . . 45
Storage Requirements . . . 45
Hazardous Substances . . . 45
Regulatory Deadlines and Facility Upgrade . . . 46
Secondary Containment and Transfer Stations . . . 46
Spill Prevention Report . . . 46
Petroleum Products . . . 46
When To Report A Spill . . . 48
Pesticides Management Regulations . . . 49
What Are Pesticides? . . . 49
Pesticide Product Registration . . . 49
Pesticide Applicator Certification and Business Registration . . . 49
Boat Owners . . . 50
Pesticide Use Safety And Personal Protection . . . 50
Aquatic Permits . . . 50
Integrated Pest Management . . . 51
Pesticide Reporting Law And Record Keeping . . . 51

Waste Stream Management . . . 52
Abrasive and Alkaline Cleaners . . . 52
Regulatory Requirement . . . 52
Best Management Practices . . . 52
Absorbents and Floor Dry . . . 52
Regulatory Requirements . . . 52
Best Management Practices . . . 52
Burn Barrels and Open Burning . . . 53
Regulatory Requirements . . . 53
Coating Operations . . . 53
Regulatory Requirement . . . 53
Best Management Practices . . . 53
Floor Drains and Wastewater . . . 54
Regulatory Requirements . . . 54
Best Management Practices . . . 55

Fluorescent Bulbs and Other Hazardous Lamps . . . 55
Regulatory Requirements . . . 55
Fuel Filters . . . 56
Regulatory Requirements . . . 56
Gasoline . . . 56
Regulatory Requirements . . . 56
Lead Acid Batteries . . . 56
Regulatory Requirements . . . 56
Best Management Practices . . . 57
Paint Scrapings and Abrasive Blast Wastes . . . 57
Regulatory Requirements . . . 57
Parts Cleaning and Degreasing . . . 57
Regulatory Requirements . . . 57
Types of Parts Washers . . . 58
Solvent Cleaners . . . 59
Aqueous Cleaners . . . 59
Semi-Aqueous Cleaners . . . 60
Ultrasonic Cleaners . . . 60
Electrocleaning . . . 61
Solvent Distillation . . . 61
Best Management Practices . . . 61
Shop Towels . . . 62
Regulatory Requirements . . . 62
Best Management Practices . . . 62
Spray Painting . . . 62
Best Management Practices . . . 62
Used Electronics . . . 63
Regulatory Requirements . . . 63
Used Oil . . . 63
Regulatory Requirements . . . 63
Used Oil Storage Tanks . . . 63
Transporting Used Oil . . . 64
Best Management Practices . . . 64
Used Oil Filters . . . 65
Regulatory Requirements . . . 65
Best Management Practices . . . 65
Used Oil Space Heaters . . . 65
Regulatory Requirements . . . 65
Some Commonly Asked Questions . . . 67

Resource Guide . . . 69
New York State Department of Environmental Conservation . . . 69
NYSDEC Regional Offices . . . 70
State and Local Assistance . . . 71
Federal Assistance . . . 72
New York State Permitted Household Hazardous Waste Facilities . . . 73

Trade Associations 74
Resources on the Internet 75

Green Products 77
Green Products Websites 77
Products 78
Best Management Practices 79
Non-Toxic Cleaning Alternatives 80

INTRODUCTION

This environmental compliance guide (may also be referred to as a manual) is the fifth in a series of industry-specific guides that has been developed by DEC's Pollution Prevention Unit to assist businesses in New York State with environmental regulations, better waste management and waste minimization methods. It was developed as a supplement to the *Environmental Compliance and Pollution Prevention Guide for Small Quantity Generators* (SQG) manual, which is intended for any small and medium-size business that generates hazardous waste.

The purpose of this document is to provide guidance to marina operators regarding the proper management of wastes that are generated at marinas and yacht clubs. This guide describes some of the environmental issues that affect the marina industry. For the purposes of this manual, the marina industry shall include marinas and yacht clubs.

This guide specifically addresses waste generated by marinas and includes a self-assessment checklist that is intended to help your business achieve the maximum performance from your day-to-day operation as well as prevent pollution and identify opportunities for additional pollution prevention measures.

For the most part, smaller businesses try to comply with applicable regulations and are willing to implement pollution prevention measures. In an effort to assist the marina industry, this guide provides information on how to properly manage wastes that are generated at these facilities. This guide is divided into sections:

- An overview of the marina industry, self-assessment, and general best management practices.
- A summary of DEC regulations as they pertain to the marina industry.
- Pollution prevention options for the marina industry
- Identification and management of waste streams generated by the marina industry and best management practice for each waste stream mentioned.
- Resource guides and references that will assist the marina industry with names and addresses of technical assistance providers.

Preventing waste is better than having to manage it. If your facility generates less waste, you will have less waste to manage and dispose of, resulting in lower disposal costs. If your business generates less waste, you reduce your risk of spills and discharges that can contaminate the environment and reduce your liability risk.

When you and your employees familiarize yourselves with this compliance guide, your marina should have a competitive advantage by knowing the regulations and the latest pollution prevention techniques. Keep this manual where your employees can refer to it as needed.

Pollution Prevention and the Marina Industry

New York State has over 800 public and private commercial marinas located along its 697 miles of coastline, 52,000 miles of rivers and 790,782 acres of lakes. Recreational boating has become an increasingly popular use of New York's waterways. Approximately 458,100 boats are registered in New York State (based on New York State Office of Parks, Recreation and Historic Preservation 1996 data).

Marinas, yacht/boat clubs, and private dockage areas can have significant impacts on the concentrations of pollutants that enter the surface waters within the general vicinity of the docking facilities. Many of these substances settle in the bottom sediments, or accumulate in the tissues of aquatic organisms, degrade water quality, are toxic to aquatic life and pose a threat to human health.

With over 800 marinas in New York, there is the potential to cause a significant impact on water quality during the operation and maintenance of these marinas. Major pollutants of concern include petroleum hydrocarbons, lead, arsenic, zinc, iron, chromium, copper, tin, and wood preservatives. These pollutants are generated during the operation and maintenance of marinas during boat painting, pesticide application, wood preservation, and fueling. Other pollutants can be generated through activities such as boat washing, storm water runoff, sewage runoff, dredging, and solid waste disposal.

Marinas, yacht/boat clubs, and private docking areas are located adjacent to the water where there may be only minimal buffering during the release of chemicals or pollutants to the waterways. Therefore, it is important for marina operators and boat owners to take steps to prevent or minimize the introduction of these pollutants to the waterways. Adverse environmental impacts may result from pollutants discharged from boats, transported by storm water generated from boat maintenance activities and from the physical alteration of habitat during construction activities.

The waste products generated by marinas can pose significant environmental concerns during routine boat maintenance and normal operation of motorized boats or crafts. Air contaminants, wastewater, and hazardous waste issues must be observed and understood by the marina industry, since some of the operations generate corrosive, ignitable, toxic, or listed hazardous wastes. Operations that can generate air emissions, water pollution, and hazardous wastes include:

- Degreasing
- De-rusting
- Painting
- Scraping
- Fueling
- Pump out
- Boat maintenance
- Grounds maintenance

There is a growing need for New York's marina industry to understand and comply with environmental regulations in order to avoid enforcement actions and/or fines as well as potential harm to human health and the environment. We should all do our part to properly manage the wastes that are generated so that our air, water, and land can remain clean.

DEC is promoting pollution prevention because it is often the most cost-effective option to reduce pollution, as well as the environmental and health risks associated with pollution. The term pollution prevention (P2) refers to the elimination or reduction in volume or toxicity of waste prior to generation or prior to recycling, treatment or release to the environment. Even businesses that do a good job of managing their materials and wastes can end up spending large amounts of money, time, and other resources on environmental compliance. Pollution prevention provides a means of meeting, and possibly reducing a business's environmental compliance requirements, while also saving money and improving its economic competitiveness. It is a proactive, "common-sense" approach to environmental management. By reducing, or eliminating, the generation of pollution in the first place, a business can save itself valuable resources. Pollution prevention can also be referred to as waste reduction, waste minimization, or source reduction. An effective pollution prevention program can:

- Reduce the risk of criminal and civil liability;
- Reduce your operating costs;
- Improve employee morale, participation, and safety;
- Enhance your company's image in the community;
- Protect the public health and the environment.

In most cases, pollution prevention does not involve expensive and "high-tech" process changes. Many pollution prevention options for marinas are simple and of minimal cost.

The best way to reduce pollution is to prevent it in the first place. Some companies have implemented pollution prevention techniques that improve efficiency and increase profits while at the same time minimize environmental impacts. This can be done in many ways, such as reducing material inputs, improving management practices, and employing substitutes for toxic chemicals. Some smaller facilities are able to actually get below regulatory thresholds just by practicing some simple pollution prevention strategies.

Waste segregation (separation or preparation) involves avoiding the mixture of different types of wastes and avoiding the mixture of hazardous wastes with nonhazardous wastes.

The following is a list of some general pollution prevention methods can use to minimize waste at your facility.

Best Management Practices

Implementing a successful housekeeping program, as a rule, requires little or no capital investment. Keep in mind that substantial savings will not be achieved if routine surveillance procedures are not implemented. Here are some housekeeping methods you can try at your facility:

- Always obtain the material safety data sheets (MSDS) from your supplier or vendor for any chemical you use in your shop. They provide specific information about the material.
- Inspect all shipments and return all unacceptable or damaged materials; especially those items that could become hazardous wastes once they are signed for.
- Practice preventive maintenance of equipment.
- Cover solvent tanks when not in use to reduce evaporation.

- Improve your purchasing and inventory methods to ensure that materials do not exceed shelf life. Date all raw materials and chemicals and use the first-in, first-out method of inventory control. Expired and outdated materials that can't be used create waste.
- Turn off electrical equipment, such as lights and copiers, when not in use.
- Train employees in all areas, especially in chemical handling and spill response.
- Segregate hazardous from nonhazardous wastes.
- Use high efficiency fans, blowers, and filters (about 50 percent efficient) at your facility. Most fan filters in use are only 10-20 percent energy efficient. A centrifugal blower/motor can be up to 25 to 30 percent efficient, and some other units are higher.
- Repair leaks around processing equipment (e.g., tanks, valves, pump seals, transfer lines, heating coils). Losses of two gallons per hour can occur through leaking pump seals alone.
- Install anti-siphon devices equipped with self-closing valves on inlet water lines where warranted.
- Inspect tank and tank liners periodically to avoid failures that might severely overload the waste treatment system.
- Use dry clean-up, where possible, instead of flooding with water.
- Install drip trays and splash guards where required.

Remember, the first step in establishing a pollution prevention program at your facility is to implement employee awareness. One way this can be achieved is by offering training sessions on regulatory compliance and waste minimization so that your employees can familiarize themselves with the proper waste management strategies.

Even though your business may generate a small amount of waste, keep in mind that there are thousands of businesses that generate a small amount. Together these businesses generate a large amount of waste that must be managed properly.

All hazardous waste generators, except conditionally exempt small quantity generators (CESQGs), are required to manifest their hazardous waste as required under the Environmental Conservation Law (ECL) 27-0907. These generators must sign a certification on the manifest form that, "the generator of hazardous waste has in place a program to reduce the volume or quantity of toxicity of such waste to the degree determined by the generator to be economically practical." A good source of guidance is the Hazardous Waste Reduction Plan - Guidance Document, available by contacting the Bureau of Hazardous Waste Management in DEC's Division of Solid and Hazardous Materials.

Figure 8 *Employees at this facility know that labeling and record keeping of hazardous materials are important steps in maintaining a good pollution prevention program.*

Invasive Species

Although there are no statewide regulations that require marinas to clean recreational water vehicles, DEC would like to see marina operators and owners of water craft use good management practices to prevent the spread of invasive species.

Aquatic Nuisance Species (ANS) are defined as: "nonindigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural, or recreational activities dependent upon such waters." An invasive species is a plant or animal that, when introduced into a new habitat, expands rapidly to the extent that it crowds out the existing native community.

Many invasive ANS have the potential to impact both boats and marinas that support them. Two excellent examples of invasive ANS are Eurasian watermilfoil and water chestnut. Both plants have the capability of growing in thick, dense beds that can interfere with boating and related activities such as fishing and waterskiing. These plants should be important to marinas for two reasons. First, if the water body on which a marina is located becomes infested with either or both of the plants, the quality of the boating experience will be diminished, and as a result, the number of boaters on the water using the marina is likely to decrease. Secondly, boats and boat launch sites are a primary means and location for introducing these plants into a water body.

Eurasian Watermilfoil

(From www.protectyourwaters.net)

Eurasian watermilfoil is spread primarily by fragmentation. As boats go through the water milfoil beds, fragments break off and many become attached to the boat and motor. Also, floating fragments can get caught on trailers as boats are launched or taken out of the water. If those loose fragments are not removed before the boat is launched in a different water body, they can be deposited in an uninfested water where the fragments could grow into a new plant, thereby introducing the plant into a new water and spreading the problem.

Water chestnut is not as easy to spread, but can also be transported into new waters by boats.

Water Chestnut

The seeds, or nuts of the water chestnut contain four spikes that can get caught on boats or on motors, particularly if the boat had run into soft, shallow muddy sediments. Like the water milfoil fragments, the nuts can similarly be dropped off into an uninfested water.

Zebra Mussel

Recent studies have shown that zebra mussels are also commonly spread by "hitchhiking" on clumps of vegetation that get caught on boats and/or boat trailers. Zebra mussels can cause several problems for marinas. They can accumulate on docks, piers and pilings; block water intakes used by the marina; accumulate on buoys in such numbers that they cause buoys to sink; and their sharp shells can cut and injure the feet of anyone who walks on them.

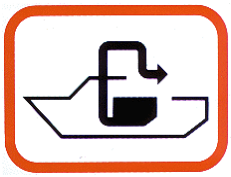
TIPS FOR REDUCING THE SPREAD OF INVASIVE SPECIES

- Inspect boats before they are launched to insure that all clumps of vegetation have been removed and disposed of where they cannot be washed into the water before launching.
- Encourage boaters to clean all vegetation off of boats when leaving the water.
- Provide trash cans and dumpsters for the disposal of aquatic vegetation.
- Set up boat washing stations to spray boats either before washing or upon removal from the water. The wash water should not be allowed to run off into the lake or river. Remove all trapped water (even small quantities) in livewells, bilges and engines and allow equipment to completely dry.
- Flush engine cooling system with tap water to remove zebra mussel larvae. If shells are allowed to grow inside, the motor will have to be taken apart to remove them.
- There are other invasive aquatic nuisance species other than the zebra mussel and plants mentioned. Some ANS fish, like the round goby and the river ruffe can cause significant problems if released into new waters.
- Encourage fishermen to know their bait species, and to dispose of any unknown baitfish away from the lake or river.
- Provide a place where leftover live bait can be dumped, and encourage anglers not to release unused bait into the water.
- Become familiar with exotic species present in your area. You may see them often and not realize it. Learn to know what they look like, where they may be found, and report any sightings to your local or state environmental conservation office. Check and see if there are any known exotic species in lakes or rivers that you might visit.
- Report any fish that you can't identify to your local or state environmental conservation office.

Check out the website: www.protectyourwaters.net for more ideas about what you or a marina owner/operator should know about aquatic nuisance species.

Marine Vessel Waste Pump Out and Dump Stations

Currently, there are no statewide mandates or regulations requiring that marinas install a pump out or dump station at their facility, but there may be local laws which require such installation. Many municipalities also require permits for the installation and/or operation of a pump out and/or dump station. Marina operators should contact their local governing agencies to determine all pertinent requirements.



TECHNICAL GUIDELINES FOR CONSTRUCTION

Pump out and dump stations should:

- provide an efficient means of removing sewage from boats and a means of disposing of that sewage in a safe and sanitary manner.
- include all the equipment, structures and disposal facilities necessary to ultimately discharge or dispose of boat sewage in an efficient, safe and sanitary manner without causing an actual or potential health hazard.
- include equipment for rinsing boat holding tanks.
- be operated and maintained to provide adequate service and be maintained to function as intended.
- be reliable, corrosion resistant, easy to use, neat, tidy and low maintenance.
- be conveniently located and easy to use to encourage boaters to use the facility.

All pumps should be:

- specifically designed for handling sewage.
- safe, functional and efficient.
- able to pump against the maximum head developed by elevation changes and line losses.
- able to transport flows out of the holding tank.
- properly sized. Pumps exceeding 45 gallons per minute may cause tanks to collapse.
- designed with a suction connection to the boat which shall be a tight fit and adjustable by adapters to service boat discharge connections.

Holding tanks:

- capacity should be determined based on several factors, including boat size and use patterns.
- should be sized on a case-by-case basis.
- should be designed and installed to meet local regulations.

APPROPRIATE METHODS FOR DISPOSAL OF VESSEL SEWAGE

Vessel sewage, know as sanitary waste, contains bacteria and viruses that can cause a variety of diseases such as hepatitus, typhoid, cholera, and acute gastroenteritis. In addition to bacteria and viruses, vessel sewage may contain harmful nutrients and biological oxygen demand (BOD) loadings on the waters of the state.

Publicly Owned Treatment Works

The preferred method of disposal, whenever available, is to discharge to a publicly owned treatment works (POTW). All approvals and permits involved in this type of connection are the responsibility of the applicant.

Holding Tank

In the case of a stationary facility, the pumpout will be directly connected to the holding tank. In the case of a portable unit, there must be a connection provided for sanitary disposal of the waste. Discharge to a holding tank involves removal and transport of the waste by a person licensed to haul septage waste to a municipal receiving/treatment facility. The name of the person contracted to do this must be provided at the time of the final inspection of the facility. All approvals and permits are the responsibility of the applicant. Sizing of the holding tank is dependent on the boat size and use patterns at each facility and the anticipated frequency of waste removal from the tank.

On-site Treatment

This includes discharge to a septic system or an on-site treatment plant. The marina owner must be aware that the unique nature of pumpout waste can often adversely affect the proper functioning of an on-site system and the services of an engineer will be required to determine if on-site treatment is feasible. (Septic systems and on-site systems are designed to handle only sewage and not industrial or hazardous wastes.)

NOTE: New York State is a participant in the Clean Vessel Act funding program that provides marina operators assistance with costs of installing and renovating recreational marine vessel pumpout and dump stations. For further information on the Clean Vessel Assistance Program, contact the New York State Environmental Facilities Corporation at 1-800-882-9721, or visit the website at www.nysefc.org.

Environmental Self-Assessment

The following checklists are guides designed to provide useful information and can be used by anyone involved in the day-to-day operations associated with the marina industry. These checklists can be used to conduct routine self-assessments to identify pollution prevention opportunities.

Each section of the self-assessment that is relevant to your business should be reviewed with the plant operator or facility manager who is most familiar with that particular part of the operation. Responses to the questions should show whether or not certain operations at your facility are in compliance with DEC regulations. In some instances, methods such an operational change, product substitution or better housekeeping can help correct a violation.

This self-assessment is only one in a series of steps that your business should take to determine its regulatory compliance and to identify suitable methods of waste reduction. For many small facilities, the self-assessment will likely be as useful as a thermometer would be for a person with a fever: the symptoms may be measured, but an expert opinion may be needed to diagnose the problem and develop corrective measures.

Progressive facilities will use the environmental self-assessment to achieve two goals: to evaluate current business practices and to develop an ongoing program in pollution prevention.

Don't be discouraged by the sometimes difficult process of identifying and addressing environmental problems. Over the long haul, the measurable benefits of conducting and responding to regular environmental self-assessments may include reductions for your company in the following areas: environmental hazards, enforcement actions, fines, insurance rates, waste handling costs and accidents. Other benefits may also include improved worker health, a better work environment, better relations with regulatory agencies, improved employee morale, favorable publicity, and a stronger community reputation for integrity.

You can use these checklists as guides to develop your own checklists based on your specific facility needs and organization. Review each question carefully and check the appropriate box. A ***"Yes"*** answer indicates that your business or facility has incorporated pollution prevention, waste reduction and/or recycling measures into its day-to-day activities. A "***No"* or *"Can't Determine"*** answer indicates that an opportunity to prevent or reduce pollution may exist. Further review is needed on the questions that receive a ***"No"* or *"Can't Determine"*** response.

Use this self-assessment to create a working list of pollution prevention and recycling opportunities that should be explored in greater detail. You are encouraged to consult with the DEC's Pollution Prevention Unit located in Albany, the regional DEC Multimedia Pollution Prevention (M2P2) coordinator, trade associations, vendors or environmental consultants for additional information and assistance. See the "Resource Guide" of this manual for a list of agencies and organizations that provide technical assistance on pollution prevention.

GENERAL BEST MANAGEMENT PRACTICES

Pollution prevention is defined as reducing or eliminating the generation of waste. The following general pollution prevention measures and practices are intended to improve efficiency, increase profits, and minimize environmental impacts at your facility. Remember that pollution prevention is a continuous process, so it should be included in your regular day-to-day operations.

	Yes	No	Not Applicable	Can't Determine
Does your facility have a formal pollution prevention policy and program?	☐	☐	☐	☐
Does your facility provide pollution prevention training for employees and encourage them to share their ideas on how to reduce pollution?	☐	☐	☐	☐
Does your facility evaluate ways to reduce wastes produced?	☐	☐	☐	☐
Does your facility consider alternative processes and chemicals to reduce toxic chemical use?	☐	☐	☐	☐
Does your facility take measures to reduce energy consumption?	☐	☐	☐	☐
Does your facility have an environmental assessment program to review design of new processes or tools for the purpose of identifying and incorporating pollution prevention techniques?	☐	☐	☐	☐
Do you work with your supply vendor to find non-toxic or less toxic alternative products that work for your processes?	☐	☐	☐	☐
Do you re-evaluate your operation on a regular basis to find new ways to reduce pollution?	☐	☐	☐	☐
Does your facility have methods to track the effectiveness of your pollution prevention program?	☐	☐	☐	☐

GENERAL OPERATING PROCEDURES

Boat maintenance, gas pumping, waste handling and storage, and the release of chemicals into surface waters should all be part of your marina's day-to-day general operating procedures. Your boat maintenance and gas pumping operations can generate a significant amount of hazardous waste and can create potential environmental and health risks. By reviewing your operations on a routine basis you can sometimes result in operational changes that can result in pollution prevention and savings at your facility.

	Yes	No	Not Applicable	Can't Determine
Have your employees been trained to handle all wastes generated at your facility?	☐	☐	☐	☐
Have you designated any employee to supervise your waste management program?	☐	☐	☐	☐
Does your facility maintain material safety data sheets (MSDS)?	☐	☐	☐	☐
Has your facility replaced hazardous solvent cleaning processes with aqueous or less toxic cleaning processes?	☐	☐	☐	☐
Does your facility practice a preventative inspection and maintenance program for all equipment?	☐	☐	☐	☐
Are all your floor drains connected to a public sewer system or a holding tank?	☐	☐	☐	☐
Is your marina located near any wetlands?	☐	☐	☐	☐
Have you obtained all the necessary DEC permits necessary to operate and/or to do any construction (especially near streams) at your marina.	☐	☐	☐	☐
If any employee is applying a pesticide or herbicide, are they licensed by DEC?	☐	☐	☐	☐
Has your marina initiated a program to prevent vessel sewage from entering the waters?	☐	☐	☐	☐
Has your marina initiated a program to prevent the spread of invasive species?	☐	☐	☐	☐

MATERIAL HANDLING, INVENTORY CONTROL & STORAGE

To reduce waste and disposal costs, facility managers should insure there is a system in place to keep track of the purchase, handling, storage and inventory of materials. The over purchasing and improper storage of chemicals can result in significant waste generation.

	Yes	No	Not Applicable	Can't Determine
Have the employees responsible for purchasing supplies at your facility been trained to manage inventory and keep accurate records of all chemicals used?	☐	☐	☐	☐
Does your facility keep chemical inventories to a minimum (keep only as much chemical supply on site as needed for current production) and purchase chemicals in the smallest quantities practical?	☐	☐	☐	☐
Does your facility use materials based on product and receipt dates (first in, first out)?	☐	☐	☐	☐
Have your employees been trained to handle all types of packages and chemicals received?	☐	☐	☐	☐
Does your facility limit access to chemical supplies?	☐	☐	☐	☐
Do you store all hazardous waste in an area labeled as "hazardous waste storage area"?	☐	☐	☐	☐
Do you date all drums or containers storing wastes to properly identify the date of generation? (Not required by CESQG's)	☐	☐	☐	☐
Do you store all materials and wastes within the building or in a covered storage building at your facility?	☐	☐	☐	☐
Does your facility store each of its wastes (oil, antifreeze, solvents, paints, gasoline) in separate containers?	☐	☐	☐	☐
Does your shop store used oil in tanks or closed containers that are clearly marked "Used Oil"?	☐	☐	☐	☐

SPILL AND LEAK PREVENTION

Spills and leaks can be reduced by making routine inspections of the areas that have the potential to cause leaks or spills. A reduction in spills and leaks can save your facility money in lost supplies and clean-up expenses.

	Yes	No	Not Applicable	Can't Determine
Does your materials storage area have a spill containment and collection system?	☐	☐	☐	☐
Does your facility have a leak detection system for any aboveground/underground tanks?	☐	☐	☐	☐
Has your facility installed overflow alarms to keep tank contents from spilling over?	☐	☐	☐	☐
Does your facility use a "no-spill" fuel catcher when pumping gasoline into boats?	☐	☐	☐	☐
Do you cover all supply and waste containers when not in use to reduce the opportunity for spills and evaporation?	☐	☐	☐	☐
Does your facility use spouts, funnels and drip pans to catch spills during the transfer of materials?	☐	☐	☐	☐
Have your employees been trained in spill prevention and reporting requirements?	☐	☐	☐	☐
Is there a spill kit available near your gas pumps or in other important areas of your marina?	☐	☐	☐	☐
Have you checked to see if any of your tanks need to be registered?	☐	☐	☐	☐

WASTE MANAGEMENT

Maintenance and repair can generate waste such as: oil and filters, antifreeze, batteries, refrigerants, gasoline and diesel, solvents, paints and brushes, sand blast material, shop towels, speedy dry, absorbents, contaminated soil, pesticides, tires, sludges, fluorescent bulbs, wastewater, plastic shrink wrap, glue, epoxies, polyester resins, fish waste, used electronics, and air emissions.

	Yes	No	Not Applicable	Can't Determine
Do you require oil filters to hot drain for a minimum of 12 hours to collect all residual oil prior to disposal or recycling?	☐	☐	☐	☐
Are your oil filters crushed and sent for recycling?	☐	☐	☐	☐
Does your shop dispose of transmission fluid, non-PCB dielectric fluid, gear oil, hydraulic fluid and cutting oil with its used oil?	☐	☐	☐	☐
Does your shop drain and save good antifreeze for reuse into other boats?	☐	☐	☐	☐
Do you store waste lead acid batteries on pallets in a well ventilated area that has an impermeable floor and a berm to allow for spill collection and containment? If the area does not have a berm, are the batteries stored on pallets that have built-in spill containment or in closed containers?	☐	☐	☐	☐
Do you keep a neutralizing agent, such as baking soda, near the battery storage area in case of leaks or spills?	☐	☐	☐	☐
Does your shop use CFC refrigerant recycling or recovery equipment operated by certified technicians when servicing automobile air conditioning systems?	☐	☐	☐	☐
Are all of your employees aware that it is illegal to vent refrigerants to the atmosphere?	☐	☐	☐	☐
Is all painting done in an enclosed spray booth?	☐	☐	☐	☐

Has your shop investigated the use of paints with lower volatility, lower metal concentrations and a higher solids content?	☐	☐	☐	☐
Do you require that the spray guns be calibrated on a regular basis?	☐	☐	☐	☐
Does your shop use more efficient paint transfer equipment such as high-volume/ low-pressure or low-volume/low-pressure spray guns?	☐	☐	☐	☐
Does your shop have fully enclosed stations for cleaning spray guns?	☐	☐	☐	☐
Do you use small diameter hoses when dispensing solvents for cleaning spray guns?	☐	☐	☐	☐
Has your shop calculated its VOC emissions from your spray painting operation?	☐	☐	☐	☐
Does your shop have a policy of reusing clean-up solvent in the next compatible batch of paint?	☐	☐	☐	☐
Are your shop towels stored in a closed metal container and free of excess liquids?	☐	☐	☐	☐
Do you recycle your shrink wrap material?	☐	☐	☐	☐
Do you recycle your fluorescent or other mercury containing lamps?	☐	☐	☐	☐
Do you recycle your used computers and other outdated electronic equipment?	☐	☐	☐	☐
Do you recycle your shrink wrap?	☐	☐	☐	☐
Do you need an air permit for your spray painting operations?	☐	☐	☐	☐
Do you or your customers drain antifreeze (including biodegradable types) into the water after the winter season?	☐	☐	☐	☐
Do you or your customers wash their boats with anything other than plain water?	☐	☐	☐	☐
If you have a boat washing system, is it permitted?	☐	☐	☐	☐

PARTS CLEANING AND DEGREASING

	Yes	No	Not Applicable	Can't Determine
Have you explored the use of citrus-based, detergent-based or a hot soap parts cleaning system to replace a solvent or caustic-based system?	☐	☐	☐	☐
Are your employees encouraged/required to brush dirty parts to remove caked-on solids and to improve cleaning efficiency?	☐	☐	☐	☐
Do your cleaning solvents have a flash point of **more than** 140 degrees F?	☐	☐	☐	☐
Do you require solvent cleaning tanks to be covered when not in use?	☐	☐	☐	☐
If you use nonhazardous parts washers have you taken steps to prevent contamination and have you tested the liquid, sludge and filter for hazardous characteristics?	☐	☐	☐	☐
Do you use a parts washer with a built-in distillation unit?	☐	☐	☐	☐
Do you discharge used parts washer solvent into sink, drain, or the ground?	☐	☐	☐	☐

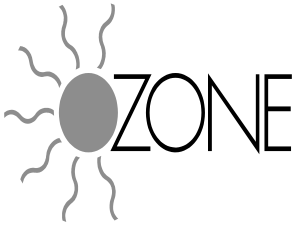
SHOP CLEANUP

	Yes	No	Not Applicable	Can't Determine
Is all maintenance performed in areas with no floor drains, or where the floor drains have been sealed?	☐	☐	☐	☐
If your shop has floor drains are they connected to an oil/water separator that discharges to a municipal sewer system or a holding tank?	☐	☐	☐	☐
Are discharges into the sanitary sewers within limits established by the sewage treatment plant?	☐	☐	☐	☐
Does your shop use brooms or other dry methods as the primary means of cleaning the shop floors?	☐	☐	☐	☐
If you clean the shop floors using water, do you use a biodegradable detergent?	☐	☐	☐	☐
Are your employees required to wipe up small spills as soon as they occur?	☐	☐	☐	☐
Does your shop send its dirty shop towels to a commercial laundry service for cleaning?	☐	☐	☐	☐
Does your shop periodically clean its floor drains and test the sludge to determine if it is a hazardous waste prior to disposal?	☐	☐	☐	☐
Is your shop's oil/water separator serviced on a regular basis?	☐	☐	☐	☐

Regulations

Air Regulations

If your marina has boilers, emergency generators, a spray painting booth, or a degreasing operation, you will probably have to comply with some state and federal air regulations. The Clean Air Act (CAA) requires the phase-out of the production of chlorofluorocarbons (CFCs) and several other ozone depleting chemicals. It also imposes controls on CFC-containing compounds. This section of the manual summarizes these air regulations as they deal specifically with the marina industry.



As part of marina operations, volatile organic compounds (VOCs) are emitted from certain solvents, adhesives, paint mixing, paint spraying, surface preparation, and equipment clean-up. Volatile chemicals produce vapors readily at room temperatures and normal atmospheric pressure, and these vapors escape easily from volatile liquid chemicals. All liquid organic chemicals are considered to be VOCs unless they are specifically exempted from the definition by the EPA. Common examples of VOCs include benzene, toluene, and xylene.

Ground-level ozone, a major component of "smog," is formed in the atmosphere by reactions between VOC and oxides of nitrogen (NOx) in the presence of sunlight. High levels of ground-level ozone can endanger public health and damage crops and forests. As a means to protect the public health and environment, both DEC and EPA regulate VOC emissions. Marina processes such as paint spraying and fuel burning are likely to emit VOCs and nitrogen dioxide.

In addition to VOCs, acid fumes, particulates, ammonia fumes, chlorinated fluorocarbons (CFCs), organic vapors, and vapors from laquer areas may also be emitted. Many of these air emissions may be hazardous air pollutants (HAPs), which are often subject to additional controls. To obtain a list of HAPs, contact DEC's Division of Air listed in the resource section of this guide. To reduce the level of HAPs, EPA sets Maximum Achievable Control Technology (MACT) standards that control emissions of one or more air toxics from a specific air pollutant source such as chromium electroplating or anodizing operations.

EPA has also established national ambient air quality standards to limit levels of "criteria pollutants." The criteria pollutants are: carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide. Even though this industry is not a major source of ozone, it is a major source of VOC emissions that mix in the atmosphere to form ozone and smog.

If you suspect that your marina may have any air emissions, you should be familiar with both the state and federal regulations that apply to the marina industry. Under Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) the marina industry may have to comply with:

- Part 201 (Permits and Registration),
- Part 212 (General Process Emission Sources),

- Part 226 (Solvent Metal Cleaning Processes) also known as vapor degreasing, and
- Part 228 (Surface Coating Processes)

The following are some of the most common chemicals that may be released in the marina industry:

Acetone
Ammonia
Carbon Dioxide
Carbon Monoxide
Chlorine
Ethylene Glycol
Glycol Ethers
Hazardous Air Pollutants
Hydrochloric Acid
Hydrogen Chloride
Hydrogen Fluoride
Hydrogen Peroxide
Isopropyl Alcohol
Methanol
Methylene Chloride
Methyl Ethyl Ketone
Nitric Acid
Particulates
Phosphoric Acid
Sulfur Dioxide
Sulfuric Acid
Toluene
Trichloroethylene
Volatile Organic Compounds
Xylene

Permits and Registration - Part 201

The information in this section will help you determine if your marina will require an air permit or registration. The air permit program is regulated under Title 6 New York Codes, Rules, and Regulations, Part 201 (6 NYCRR Part 201).

Your marina should identify all emission sources and then calculate the potential emissions from each source. After you have totaled your potential emissions for each pollutant from all sources, you will then be able to determine whether or not your marina needs a Title V Permit, State Facility Permit, or Facility Registration.

EXEMPTIONS

Your marina will need to obtain a Minor Facility Registration, State Facility Permit, or a Title V Permit unless every process at the marina is specifically exempt from Part 201. Some common exemptions that may apply to the marina industry are:

- Surface coating and related operations outside the New York Metropolitan Area and Lower Orange County Area which use less than 25 gallons of coating materials and solvents per month, and performs all abrasive cleaning and surface coating operations in an enclosed building with emissions that are exhausted to emission control devices. These would include a baghouse for abrasive cleaning operations and a spray booth and dry filters for surface coating operations.
- Powder coating operations.
- Thermal packaging operations including, but not limited to, therimage labeling, blister packing, shrink wrapping, shrink banding, and carton gluing.
- Many degreasing operations are exempt if they don't use HAPs.
- Venting and exhaust systems for laboratory operations.

Regulations Information
Air permit requirements can be found in 6 NYCRR Part 201, while the VOC limitations are provided in 6 NYCRR Parts 226 and 228. Facilities should also address the federal requirements of 40 CFR Part 63, Subparts N and T.

- Exhaust systems for paint mixing, filling or sampling, and/or paint storage rooms or cabinets, provided the paints stored in these locations are stored in closed containers when not in use.
- Exhaust systems for solvent transfer, filling or sampling, and/or paint storage rooms or cabinets, provided the solvents stored in these locations are stored in closed containers when not in use.
- Degreasing units which exclusively use non-hazardous air pollutant acids.
- Degreasing units which exclusively use caustics (e.g., potassium hydroxide and sodium hydroxide).
- Solvent cleaning of parts and equipment performed exclusively by hand wiping or hand cleaning.
- Manual surface coating/painting processes which exclusively use brushes, rollers, or aerosol cans.
- Hand-held or manually operated welding, brazing, and soldering equipment.

If you need assistance in determining whether or not your facility is exempt from Part 201 permitting, call the regional DEC air engineer located in your area. (See resource guide section for phone numbers)

MINOR FACILITY REGISTRATION

Minor Facility Registration is determined, in part, by proximity to New York City. The following conditions apply to minor facility registration.

Facilities in the New York City Metropolitan Area

The New York City Metropolitan Area consists of New York City, and the counties of Westchester, Rockland, Nassau, and Suffolk.

To be eligible to register, a facility located in the New York City Metropolitan Area must meet all of the following condition:

- Total actual annual VOC emissions must be less than 12.5 tons.
- Total actual annual emissions of any individual HAP must be less than 5 tons.
- Total actual annual HAP emissions must be less than 12.5 tons.
- Total actual emissions of all contaminants must be less than half of all “Major Source” thresholds.

Please note that these “actual annual emissions” limits apply to the rolling 12-month sum of emissions for all periods. The Major Source thresholds are found in 6 NYCRR Part 201-2.1(b)(21).

Facilities Outside of the New York City Metropolitan Area

To be eligible to register, a facility located outside of the New York City Metropolitan Area must meet all of the following conditions:

- Total actual annual VOC emissions must be less than 25 tons.
- Total actual annual emissions of any individual HAP must be less than 5 tons.
- Total actual annual HAP emissions must be less than 12.5 tons.
- Total actual emissions of all contaminants must be less than all "Major Source" thresholds.

Please note that "annual" emissions are computed on a rolling 12 month basis at the end of each month of operation. The Major Source thresholds are found in 6 NYCRR Part 201-2.1(b)(21).

STATE FACILITY PERMIT

State Facility Permits are determined, in part, by proximity to New York City. The following conditions apply to state facility permits.

Facilities in the New York City Metropolitan Area

- Total actual annual VOC emissions are greater than 12.5 tons, but less than 25 tons.
- Total actual annual emissions of any individual HAP are less than 10 tons.
- Total actual HAP emissions are less than 25 tons.
- Total actual emissions of all contaminants are less than the "Major Source" threshold.

Please note that "annual" emissions are computed on a rolling 12 month basis at the end of each month of operation. The Major Source thresholds are found in 6 NYCRR Part 201-2.1(b)(21).

Facilities Outside of the New York City Metropolitan Area

- Total actual annual VOC emissions are greater than 25 tons, but less than 50 tons.
- Total actual annual emissions of any individual HAP are less than 10 tons.
- Total actual HAP emissions are less than 25 tons.

Please note that "annual" emissions are computed on a rolling 12 month basis at the end of each month of operation. The Major Source thresholds are found in 6NYCRR Part 201-2.1(b)(21).

TITLE V FACILITY PERMIT

Title V Facility permits are required for all "Major Sources" in New York State. The definition of Major Source is found in 6 NYCRR Part 201-2.1(b)(21).

"Non-Major" sources subject to 40 CFR Part 63 Subpart N (halogenated solvent cleaning machines) can obtain a registration and may be deferred from Title V permitting in the future. These sources must submit a Title V permit by December 9, 2005. For more information on 40 CFR Part 63 Subpart N, see section on NESHAP, page 15, or call DEC, Division of Air, or the Small Business Assistance Program listed in Section V.

**The following rules override the conditions listed above for Minor Facility Registrations, State Facility Permits, and Title V Permits*:

- Any new facility that is in an industrial category to which a Federal New Source Performance Standard (NSPS) applies and which has a potential to emit that is below the major source thresholds must obtain a State Facility Permit, regardless of location or quantity of emissions from that facility.
- Any new facility that emits a contaminant listed as a hazardous air pollutant, excluding those facilities

subject to VOC Reasonably Available Control Technology (RACT) requirements under Parts 226, 228, 229, 230, or 233, must obtain a State Facility Permit, regardless of location or quantity of emissions from that facility.

- Any facility that is subject to a DEC-approved variance from the requirements of a State VOC RACT regulation must obtain a State Facility Permit, regardless of location or quantity of emissions from that facility.
- Any facility that is subject to a National Emission Standard for Hazardous Air Pollutant (40 CFR Part 63) must obtain a Title V Permit, regardless of location or quantity of emissions from that facility. However, "Non-Major" facilities that are subject to 40 CFR Part 63 Subpart N have been deferred from the requirement to obtain a Title V permit. Such sources are not required to file for a Title V Permit until December 9, 2005. Please call the DEC Division of Air Resources or the Small Business Assistance Program for more details. (See Resource Guide for phone numbers).

GENERAL PROCESS EMISSION SOURCES - PART 212

This is the DEC regulation that covers air toxics and determines how much control is needed on your facility's toxic air emissions. Before a permit is written, you must establish your **emission rate potential**. This is the maximum rate at which a specified air contaminant from an emission source would be emitted to the outdoor atmosphere in the absence of any control equipment. After your Emission Rate Potential is established, then DEC will apply a rating of A, B, C, or D to each contaminant that is emitted at your facility. This rating (A being the most toxic) is assigned to each contaminant in order to consider the potential environmental effects of an air contamination source on its surroundings.

It should be noted that the Part 212 system for using Emission Rate Potential and Environmental Ratings to determine control requirements is likely to be changed in an upcoming amendment to Part 212.

SOLVENT METAL CLEANING PROCESSES - PART 226

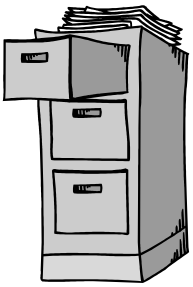
When cleaning or degreasing with a VOC solvent in a solvent cleaning machine, you are subject to Part 226 if your facility uses a conveyorized degreaser greater than 22 square feet of air/vapor interface; or an open-top vapor degreaser greater than 11 square feet of open area; or cold cleaning degreasing.

Chlorofluorocarbons (CFCs) were commonly used as a cleaning solvent, but Title VI of the federal regulations prohibits the production and importation of CFCs after January 1, 1996, except for some essential uses. As long as your facility still has an existing supply of CFCs, it can still use them. Many marinas are now using mineral spirits or other solvents that contain no CFCs.

Solvent cleaning processes utilizing 1,1,1 trichloroethane (methyl chloroform), and methylene chloride are specifically exempt from Part 226. However, these solvents are still regulated by the National Emissions Standards for Hazardous Air Pollutants (NESHAP) federal standard for solvent cleaning machines. Perchloroethylene is also exempt from Part 226 because EPA delisted it as a VOC.

Your facility can <u>not</u> conduct solvent cleaning operations unless:

- Solvent is stored in covered containers and waste solvent is transferred or disposed of in such a manner that less than 20 percent of the waste solvent (by weight) can evaporate into the atmosphere.
- Equipment used in solvent metal cleaning is maintained to minimize leaks and fugitive emissions.
- Equipment used in solvent metal cleaning displays a conspicuous summary of proper operating procedures consistent with minimizing emissions of VOCs.
- Equipment covers are closed when the solvent metal cleaning unit is not in service.
- A record of solvent consumption is maintained for each year and made available to DEC upon request.



SURFACE COATING PROCESS, INCLUDING METAL PAINTING OPERATIONS - PART 228

If your facility has a surface coating process (metal painting and coating operations), then your facility must limit VOC emissions from all subject surface coating processes in order to comply with the VOC limits found in Part 228. Compliance strategies include high solids coating, ultraviolet coating, waterborne coating, and powder coating systems.

If low VOC coatings are not available to your facility, you can comply with Part 228 by installing VOC control equipment, such as thermal oxidizers or carbon adsorption units.

The location of your facility and the amount of your VOC emissions will determine if you are subject to Part 228:

- If your facility is located in the New York City Metropolitan Area, regardless of its annual potential to emit (PTE) VOCs, you must comply with Part 228. A facility's PTE is the maximum capacity to emit any regulated air pollutant under its physical operational design. Physical operational limits, such as air pollution control equipment and/or restrictions on the hours of operation, or on the type or amount of material processed, can be included in the design only if the limitation is part of a federally enforceable permit condition.
- If your facility is located in the Lower Orange County Area and coats products included in Table 1 of Part 228 and has a PTE $10 tons VOC/year, or coats products included in Table 2 of Part 228 and has a PTE $25 tons VOC/year, you are subject to Part 228.
- If your facility is outside the New York City Metropolitan Area or the Lower Orange County Metropolitan Area and coats products included in Table 1 of Part 228 and has a PTE $10 tons VOC/year, or coats products included in Table 2 of Part 228 and has a PTE $50 tons VOC/year, you are subject to Part 228.

RECORD KEEPING

Even if your facility is exempt from minor facility registration or air permitting requirements, you should still maintain records of your VOC emission rates, even if you use fewer than 25 gallons per month. By keeping these records, you will:

- Show proof of compliance with applicable DEC air requirements.
- Be able to determine if your facility needs any registrations or permits.

- Be prepared to provide information to any Regional DEC inspectors if, and when, they call to visit your shop.
- Help your facility toward implementing a pollution prevention program.

One of the easiest ways to keep records of your VOC emissions is by keeping your purchase order invoices for all the paints, lacquers, solvents, or additives used by your facility. Don't forget to obtain a copy of the MSDS for each of the materials that you purchase. If requested, most manufacturers will fax or mail copies of MSDSs within a day or two.

How To Calculate Your VOC Emissions

In order to determine what type of registration or permit your facility requires, you will need to know your total VOC emissions. To calculate your VOC emissions, you need to know your total annual usage of materials (e.g., paints, lacquers, makeup solvents, cleanup solvents, etc.). As discussed in the previous section, this information can be obtained from your purchase orders. Also, if any other additives or solvents are used in your shop that contain VOCs, such as isopropyl alcohol, the emissions from these materials should be accounted for in your calculations.

VOC emissions are equal to the annual usage rate of the materials applied, times the VOC content at the time of application. To calculate your VOC emissions,

Multiply your annual usage rate (gallons) of paints, lacquers, makeup solvents, and cleanup solvents by the density in pounds per gallon (from MSDS or technical data sheet) of paints, lacquers, makeup solvents, and cleanup solvents by the weight fraction of VOCs in paints, lacquers, makeup solvents, and cleanup solvents.

Note: Density = specific gravity X 8.34 pounds/gallon. Weight fraction is the percent by weight divided by 100, which can be obtained from the MSDS or technical data sheet.

Example: Mike's Marina uses 130 gallons a year of coatings and lacquers, 52 gallons/year of thinners, and 20 gallons/year of cleanup solvents. The Material Safety Data Sheets (MSDSs) list the VOC content at: coatings and lacquers, 5.0 pounds/gallon; thinners, 6.5 pounds/gallon; and cleanup solvents, 7.0 pounds/gallon.

VOC = Annual Usage x VOC Content at Application

Paints and Lacquers
Annual Usage = 130 gallons
VOC Content = 5.0 pounds/gallon
VOC = (130 gallons/year) (5.0 pounds/gallon)
VOC = 650 pounds/year

Thinners
Annual Usage = 52 gallons
VOC Content = 6.5 pounds/gallon
VOC = (52 gallons/year) (6.5 pounds/gallon)
VOC = 338 pounds/year

Cleanup Solvents
Annual Usage = 20 gallons
VOC Content = 7.0 pounds/gallon
VOC = (20 gallons/year) (7.0 pounds/gallon)
VOC = 140 pounds/year

Total VOC Emissions

Mike's Marina's total annual VOC emissions is 650 + 338 + 140 = 1,128 pounds.

In addition to the coatings, lacquers, thinners, and cleanup solvents, your marina may use primers, multi-coating, pre-coat, and specialty coatings. You should check the MSDS for the VOC content of these materials. Call the product manufacturer or your distributor if you need copies of these MSDSs.

If you are a marina with fewer than 100 employees and need assistance in computing your VOC emissions, finding out what registration/permits you need, or whether 6 NYCRR Parts 212, 226, or 228 applies to your facility, call the Small Business Assistance Program (SBAP) at (800) 780-7227. This non-regulatory program provides *free* confidential technical assistance to help small businesses achieve voluntary compliance under the Clean Air Act.

PART 230 - GAS DISPENSING FACILITIES

Air emissions from refueling operations are addressed in 6 NYCRR Part 230 and EPA's AP-42 Section 5.2.2.2 emission factors for service stations. The factors in Table 5.2-7 can be used to calculate emissions from the filling of the marina's tank as well as the emissions from boat refueling. A storage tank without a drop tube would use the 11.5 lb/1000 gallon throughput factor shown for "Splash filling". A storage tank with a drop tube would use the lower 7.3 lb/1000 gallon throughput factor shown for "Submerged filling". If a station had a Stage I connection on the tank, which allows the vapors to return to the tank truck during delivery rather than blowing out the vents, the 0.3 lb/1000 gallon throughput factor would be appropriate. Since Stage II is a vehicle refueling control strategy that is not used for marinas, the "uncontrolled displacement losses" factor of 11.0 lb/1000 gallons throughput would be the refueling factor. We could also add in the 1.0 lb/1000 gallons throughput "breathing and emptying factor" and the .7 lb/1000 gallon throughput "spillage" factor. We would end up with a total emission factor of 7.3 + 11.0 + 1.0 +0 .7 = 20.0 pounds of VOC emitted for each multiple of 1000 gallons of gasoline pumped at a typical marina. The larger facilities may find that their gasoline refueling emissions are significant in comparison to their painting operations.

Does My Marina Need A Part 230 Permit?

Part 230 does not apply as long as no vehicles are refueled from the marina gasoline pumps. This means that the drop tube would not be required in the storage tank under the air regulation, but most new tanks would be equipped with them as a pollution prevention and fuel conservation measure. In addition, neither Stage I or II would be required if no vehicles are refueled at the facility.

Water Regulations

Most marinas are located on or near a body of water which means that there is always the potential for contaminants to spill or leak into the waters of the State. Since gas pumping operations are often located on docks, spills of petroleum products can occur if care is not taken during the dispensing of gas into vessels. Wastes from marinas may contain inorganic dissolved solids in the form of phosphates and sulfates, and organic wastes in the form of oils and greases.

Accidental spills, leaks, and drips of petroleum products can also contribute significantly to effluent contamination. Usually tanks do not spring a leak that would allow the entire solution to leak away undetected. However, a slow leak amounting to a solution loss of 10 to 20 gal/day could go undetected for weeks at some marinas.

CAN YOU TREAT OR RECYCLE YOUR WASTEWATER?

Wastewater treatment and recovery processes can be considered treatment of a hazardous waste if the wastewater is a listed or characteristic hazardous waste. In order to avoid obtaining a permit under the hazardous waste regulations, your process must meet one of the exemptions found in 6 NYCRR Section 373-1.1(d)(1). Processes that comply with certain conditions are eligible for exemptions such as the wastewater treatment unit and the recycling exemptions. The wastewater itself could be excluded from being a hazardous waste, such as the closed-loop exclusion.

WASTEWATER DISCHARGE REQUIREMENTS

Under the federal Clean Water Act, a marina operator can not discharge any pollutant to surface or ground waters of the State without a state pollutant discharge elimination system (SPDES) permit. If your facility performs boat washing or has any storm water runoff, you may be required to obtain either a general or a specific SPDES permit. If your facility discharges process or non-process wastewater *directly to surface waters*, you may be required to obtain a State Pollutant Discharge Elimination System (SPDES) permit. You are considered a **direct discharger**. If your facility discharges its process wastewater to a sewer that flows to a *publicly owned treatment works* (POTW), you may be required to meet pretreatment standards. You are considered an **indirect discharger**.

Both direct and indirect dischargers must meet effluent limits and conduct periodic monitoring and reporting. Also, both direct and indirect dischargers will be required to pre-treat their wastewater to meet their applicable effluent limits.

PERMITTING REQUIREMENTS

If your facility discharges wastewater directly into surface or groundwaters, then you are required to obtain a SPDES Permit. These permits are regulated under 6 NYCRR Parts 750-758.

A SPDES permit will list all pollutants your facility is discharging into surface or groundwater that DEC determines necessary to address. It may contain limits, action levels or monitoring for each pollutant. Limits applied to your discharge will be the more stringent of either technology-based limits (sometimes referred to as best available technology or BAT limits), water quality limits, or groundwater effluent standards. Water quality limits are calculated according to the classification and ambient standards assigned to the specific water body receiving the discharge. All surface waters and groundwaters in NYS are classified according to the best usage, e.g., drinking water or fish propagation.

To make certain you are complying with your permit limits, you may be required to sample your discharge and submit monitoring reports. Contact your regional DEC office for information on obtaining a SPDES permit. A list of DEC regional offices can be found in resource guide section of this manual.

Remember

Before discharging oil and grease, solvents, acids, alkalides, or any other wastes generated at your facility to a municipal sewer system, check with your local POTW.

NONPOINT SOURCE POLLUTION

Pollutants that enter the water in storm water runoff are referred to as nonpoint source (NPS) pollution. Even though recreational boating and marinas are not considered by DEC to be a significant source of NPS pollutants, DEC does recognize that in some areas the increased number and size of marinas does cause the potential for adverse impacts to water quality.

Sources of non-point source pollution include:

- construction activities
- septic system infiltration
- agricultural runoff
- marinas and recreational boating
- highway and parking lot runoff

These sources of pollution could introduce contaminants such as nutrients, petroleum products, biological oxygen demand (BOD) loading, suspended solids, and bacteria into lakes, rivers, and other water bodies of the state. Since marinas generate pollutants like heavy metals, hydrocarbons, solvents, antifreeze, acids/alkalis, nutrients, sediments, and bacteria, they should use best management practices to reduce or eliminate nonpoint source pollution.

For more information on nonpoint source management, you can obtain a copy of the manual, “Marina Operations for Existing Facilities” from DEC’s Division of Water by calling 518-402-8243.

Stormwater Management

Stormwater begins as rain or melting snow that runs off fields or hard surfaces such as paved roads, roofs and parking lots. As it flows through culverts, ditches or drains, the stormwater often picks up oils, litter, animal wastes, fertilizer, pesticides and eroded soils, sediment, heavy metals, or other materials causing it to become polluted. When this untreated stormwater eventually flows into waterways, it can impact water quality, leading to the closing of beaches and shellfish beds, nuisance weed growth in lakes, the destruction of aquatic habitats, and possible flooding.

In 1987, under the Clean Water Act, EPA established a program to address storm water discharges associated with industrial activity. The term "storm water discharge associated with industrial activity" refers to a storm water discharge from one of 11 categories of industrial activity defined in 40 CFR 122.26(a)(9)(b)(14). Five of the categories are defined by SIC codes, while the other six are identified through narrative descriptions of the regulated industrial activity.

All marinas that are subject to the general storm water permit will fall into Category (xi) because they have a standard industrial code of 34, and may fall into Category (i) because this category includes any facility, regardless of size, that is subject to toxic pollutant effluent guidelines.

Storm water permits are required when water from your facility is conveyed to a surface water body. If your facility's storm water discharge goes directly into a combined storm sewer and sanitary sewer system that conveys the storm water to a POTW, then your facility may not need a general storm water permit. Check with your regional DEC office to determine if your facility is exempt from obtaining a storm water permit.

Storm water permits will help DEC recognize what wastes may eventually end up in the state's waterways. To this end, DEC issues storm water permits that cover discharges from roads with drainage systems, catch basins, curbs, gutters, ditches, man-made channels, or storm drains, which are used for collecting and conveying storm water directly related to manufacturing, processing, or raw material storage areas at industrial facilities.

DEC issues two types of storm water permits: individual permits or general permits. An individual permit is more complex and requires substantial data collection and reporting as compared to a general permit. Your facility can apply for a general permit by the following procedure:

- First, develop and implement a "**Storm Water Pollution Prevention Plan**." To do this, you must obtain a copy of the *SPDES General Permit for Storm Water Discharges*. You can get a copy by calling your DEC regional office (see resource guide). You can write the Storm Water Pollution Prevention Plan or have a consultant prepare it. This plan does not have to be submitted to DEC, but must remain on the premises in case a DEC inspector needs to review it.
- Second, submit a "Notice of Intent, Transfer, Termination" (NOITT) to: DEC, 625 Broadway, Albany, NY 12233, Attention: Joe DiMura. To download a copy of the NOITT go to: www.dec.state.ny.us/website/dcs/permits/olpermits/noitt.pdf

General permits may require some type of monitoring, depending on the type of facility. Usually, marina may only be required to do visual monitoring.

Information on storm water management can be found on DEC's website at: www.dec.state.ny.us/website/dow/mainpage.htm

BEST MANAGEMENT PRACTICES

Here are some tips that could help you reduce the contaminants in your storm water runoff:

- Install water bars to divert off-site storm water away from your marina, especially from maintenance and repair

areas. Water bars are essentially speed bumps positioned to divert stormwater.

- Construct grass areas between the marina and the nearby surface water to filter out any contaminants before they are discharge to waters of the State.
- Other types of vegetation can effectively remove contaminants from stormwater. Even wetlands act as filter that remove nutrients, hydrocarbons, and sediments from runoff.
- Perform all boat maintenance and painting in an enclosed, roofed area. If any scrapings or boat maintenance has to be performed outside, use a plastic tarp to catch the contaminants. Please be aware that paint scrapings can not be thrown in the dumpster if they fail the toxicity test. See section IV for regulatory requirements of paint scrapings.
- Don't pour fluids into your septic system, into a dry well, on the ground, or in the trash.
- Cover all containers that are stored outside to prevent any spillage onto the ground.
- Install sand filters, holding tanks, oil-grit separators, or vortex concentrator chambers to improve storm water quality before it is discharged.
- Try to do all your washing over a drain that is connected to a sanitary sewer.
- Prohibit the use of soaps and detergents by boat owners during boat washing. Instruct them to use plain water when washing their boats.
- When removing antifreeze from the boat's engine or water system for the summer season, **do not** empty the antifreeze on the ground or in the water.
- Try to have marina employees do all fueling. Make sure the pump's automatic shut-off is working properly.
- Always have a spill kit located close by the fueling operations and make sure all employees are trained in the use of spill containment and clean-up. The kit should include: absorbent socks or booms, absorbent pillows and pads, oil dry, broom and shovel, disposal bags or other containers, safety goggles, plastic gloves.
- It is important to clean up spills promptly and thoroughly.

Call DEC at (518) 402-8117 if you have questions on the storm water management program.

Hazardous Waste Regulations

The New York State hazardous waste regulations are covered under 6 NYCRR Parts 370-374 and 376 and apply to any marina that generates hazardous waste. This includes, but is not limited to, facilities that conduct some type of degreasing, fueling operations, boat maintenance, or painting operations.

Reminder

If you do not have a copy of the manual *Environmental Compliance and Pollution Prevention Guide for Small Quantity Generators*, you can get your copy by calling DEC at 1 - 800 - 462-6553.

No matter what waste you dispose of, it is your responsibility to determine the type and quantity of hazardous waste you generate and properly manage it. Since disposal fees for hazardous waste can be very expensive, it is in your best interest to practice good hazardous waste management. Call the DEC Pollution Prevention Hotline toll free at 1-800-462-6553 for assistance with managing your hazardous waste. Refer to Section V for more information on technical assistance providers.

Don't Forget
Always keep good records of all the hazardous waste your facility generates.

Here are some hazardous wastes commonly generated by the marina industry:

- Heavy metal wastes
- Ignitable wastes
- Solvent wastes
- Toxic wastes
- Still bottoms
- Reactive wastes
- Acids/bases
- Sludges
- Rags

HAZARDOUS WASTE DETERMINATION

If you generate wastes at your facility, you should determine which are hazardous. As a good management practice, always keep non-hazardous waste separate from your hazardous waste. This will reduce or eliminate the mixing and/or contamination of wastes, that could increase your disposal costs.

One way to make a hazardous waste determination is to see if your waste is listed in the New York State regulations, 6 NYCRR Part 371. If your waste is listed, it is hazardous. If your waste is listed in Part 371, it is automatically hazardous waste. Even if your waste is not listed, it would still be a hazardous waste if it exhibits one of the hazardous waste characteristic of ignitability, corrosivity, reactivity, or toxicity found in 6 NYCRR Parts 371 and described further below.

You can also apply your knowledge of the waste to determine if it exhibits a hazardous characteristic. You must have a basis for making this determination, such as material safety data sheets (MSDSs) or past

analytical results. MSDSs may contain important information, such as ignitability (flashpoint), corrosivity, or reactivity for substances or chemicals you may use at your facility. Please note that MSDSs only describe the new product. During use, a non-hazardous product could become hazardous, e.g., by mixing or contamination.

As mentioned previously, if your waste is listed in 6 NYCRR 371.4 (Hazardous Waste Regulations), then you know you must manage it as a hazardous waste. If, however, it is not listed, then your facility must make a hazardous waste determination on that waste. If your business generates hazardous waste, you should understand the term since it may apply to some of the waste streams mentioned in Section III. You should read the DEC manual, *Environmental Compliance and Pollution Prevention Guide for Small Quantity Generators*, to familiarize yourself with the requirements and conditions for hazardous waste generators.

If you generate a waste at your facility that is not listed in 6 NYCRR Section 371.4, you must still determine if that waste is hazardous by any of the following four characteristics: ignitability, corrosivity, reactivity, and toxicity.

Ignitability

If your liquid waste has a flashpoint of less than 140E F, it is hazardous. Examples include: parts cleaners, paint solvents, waste kerosene, and waste gasoline.

Corrosivity

If your waste has a pH of 2.0 or lower, or a pH of 12.5 or higher, it is hazardous. Examples include: lead-acid batteries, certain rust removers, caustic parts degreaser, and acid or alkaline baths or solutions.

Reactivity

If your waste is unstable and undergoes violent chemical reaction spontaneously or reacts violently with air or water, it is hazardous.

Toxicity

If your waste is not ignitable, corrosive or reactive, then it might have to be tested for toxicity according to the methods explained in 6 NYCRR 371.3(e), or in the federal regulations, 40 CFR Part 261. Examples include: certain painting wastes, paint booth filters, used shop towels or rags, oily wastes other than used oil, oil absorbents, wastewater treatment sludges, and rinse water.

A toxicity test is done by having a representative sample of the waste tested by a certified lab, where it is analyzed using a toxicity characteristic leaching procedure (TCLP). If the test exceeds any of the allowable standards listed in Table 1, page 33, then the waste is hazardous. For a copy of certified labs in New York State, call 1-800-462-6553.

A waste that exhibits one or more of the above traits is a hazardous.

Did You Know?

As a CESQG, you can transport up to 220 pounds per month of your own waste to a State approved facility.

HAZARDOUS WASTE CATEGORIES

Once you have determined that your business generates hazardous waste, then it is necessary to determine your hazardous waste category status. Depending on the quantity and type of waste generated, and the amount of waste stored, you will be in one of the following categories: Conditionally Exempt Small Quantity Generator **(CESQG),** Small Quantity Generator **(SQG)**, or Large Quantity Generator **(LQG).**

This section does not discuss in detail the requirements for the LQGs. Large Quantity Generators are fully regulated under 6 NYCRR Parts 370-374 and 376. Large Quantity Generators can obtain a copy of the regulations by calling (518) 402-8730.

Conditionally Exempt Small Quantity Generator

A conditionally exempt small quantity generator (CESQG):

- Generates no more than 220 pounds (approximately 26 gallons) of hazardous waste per calendar month,
- Generates no more than 2.2 pounds of acute hazardous waste per calendar month, and
- Stores no more than 2,200 pounds of hazardous waste or 2.2 pounds of acute hazardous waste on site at any time.

If You Qualify as a CESQG, You Must:

- Identify your hazardous waste.
- Comply with storage quantity limits.
- Ensure proper treatment and/or disposal of your waste.

CESQG's can deliver up to 220 pounds (per month) of their hazardous waste to an offsite treatment or disposal facility as long as they transport it to:

- A state or federally regulated hazardous waste management treatment, storage or disposal facility.
- A facility permitted by NYS to manage municipal or industrial solid waste and authorized to receive CESQG hazardous waste.
- A facility that uses, reuses or legitimately recycles the waste.
- A permitted household hazardous waste collection facility that accepts CESQG waste. See resource guide section of this manual for a list of participating municipalities.

If you elect not to deliver your own hazardous waste, you must use a 6 NYCRR part 364 permitted transporter.

Small Quantity Generator

A small quantity generator (SQG):

- Generates between 220 pounds and 2,200 pounds of hazardous waste per calendar month,
- Generates less than 2.2 pounds of acute hazardous waste per calendar month, and
- Stores less than 13,200 pounds of hazardous waste or 2.2 pounds of acute hazardous waste on site at any time.

Table 1

Toxicity Characteristic Leaching Procedure (TCLP)

The following are substances covered by the TCLP. The concentrations are not total amounts of the chemical in the waste, but concentrations in the TCLP leachate after the specific test is carried out.

Waste Code	Substance	CAS Number	TCLP Concentration Limit (mg/l)
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D006	Cadmium	7440-43-9	1.0
D007	Chromium	7440-47-3	5.0
D008	Lead	7439-92-1	5.0
D009	Mercury	7439-97-6	0.2
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D012	Endrin	72-20-8	0.02
D013	Lindane	58-89-9	0.4
D014	Methoxychlor	72-43-5	10.0
D015	Toxaphene	8001-35-2	0.5
D016	2,4-Dichlorophenoxyacetic acid	94-75-7	10.0
D017	2,4,5-Trichlorophenoxypro pionic acid	93-72-1	1.0
D018	Benzene	71-43-2	0.50
D019	Carbon Tetrachloride	56-23-5	0.50
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D023	o-Cresol	95-48-7	200.0*
D024	m-Cresol	108-39-4	200.0*

D025	p-Cresol	106-44-5	200.0*
D026	Cresol	.....	200.0*
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.50
D029	1,1-Dichloroethylene	75-35-4	0.70
D030	2,4-Dinitrotoluene	121-14-2	0.13**
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	0.13**
D033	Hexachloro-1,3-Butadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	5.0**
D039	Tetrachloroethylene	127-18-4	0.7
D040	Trichloroethylene	79-01-06	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D043	Vinyl Chloride	75-01-4	0.20

* If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200.0 mg/l.

** Quantitation limit is greater than the calculated regulatory level. The quantitation limit, therefore, becomes the regulatory level.

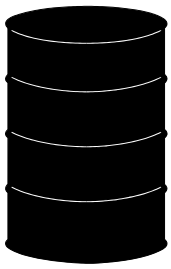
A SQG Must Do The Following:

- Obtain an EPA Identification Number by calling EPA at (212) 637-4106.
- Submit a completed hazardous waste manifest form.
- Use a 6 NYCRR Part 364 permitted hazardous waste transporter.
- Limit on-site storage. Waste must be shipped within 180 days of accumulation (or 270 days, if the treatment, storage, or disposal facility is greater than 200 miles away).
- Follow emergency preparedness and response requirements.
- Adhere to land disposal restrictions.

Did You Know?

As a Small Quantity Generator, you **cannot** transport your own waste. You must use a 6 NYCRR Part 364 permitted transporter.

Storing Your Hazardous Waste



- Keep the waste in a separate storage area which is labeled "**Hazardous Waste Storage Area**."
- Label all containers.
- Mark each container with the date you began collecting waste in that container.
- Use proper containment (pallets with built-in spill containment or berms) in case of leaks.
- Keep containers closed when not in use.
- Keep containers in good condition and periodically inspect for leaks, cracks or rust.
-

For more information on small quantity generators, request a copy of the manual, *Environmental Compliance and Pollution Prevention Guide for Small Quantity Generators* by calling 1-800-462-6553.

Large Quantity Generator

If you meet **any** of the following conditions, you are a large quantity generator:

- Generate more than 2,200 pounds of hazardous waste per calendar month.
- Generate more than 2.2 pounds of acute hazardous waste per calendar month.
- Store more than 13,200 pounds of hazardous waste on site at any time.
- Store more than 2.2 pounds of acute hazardous waste at any time.

By using good waste management and pollution prevention methods mentioned in this manual, most marinas should **not** be a large quantity generator. However, if your marina is a large quantity generator, you should call the Division of Solid and Hazardous Materials at (518) 402-8730 to obtain a copy of the regulations, or go the DEC website at: http://www.dec.state.ny.us/website/dshm/regs/370parts.htm

Large quantity generators must obtain an EPA ID number, store hazardous waste no more than 90 days on site, manifest their waste, submit biennial reports to DEC, keep records at your site for 3 years, comply with land disposal restrictions, and comply with export/import requirements when shipping waste out of the country.

UNIVERSAL WASTE

To streamline the hazardous waste regulations for wastes that are generated by large numbers of sources in relatively small

quantities, USEPA issued the Universal Waste Rule in 1995. The universal waste regulations govern the collection and management of widely generated wastes. In NYS, these currently include hazardous batteries, pesticides, thermostats, and lamps. Theses regulations were designed to reduce the amount of hazardous waste items in the municipal solid waste stream; encourage the recycling and proper disposal of some common hazardous wastes; and reduce the regulatory burden on the regulated community. Universal wastes are generated in a wide variety of settings including households, schools, office buildings, and medical facilities, in addition to the industrial settings usually associated with hazardous wastes. Universal wastes include such items as hazardous batteries, hazardous mercury-containing thermostats, certain pesticides, and hazardous lamps. Although handlers of universal wastes must meet less stringent standards for storing, transporting, and collecting wastes, the wastes must comply with full hazardous waste requirements for final recycling, treatment, or disposal. This approach removes these wastes from municipal landfills and incinerators, which provides stronger safeguards for public health and the environment.

Batteries

Batteries included are nickel-cadmium (Ni-Cd), lithium, small sealed lead-acid batteries, and batteries that exhibit hazardous waste characteristics. These may be found in many common items in the business and home, including electronic equipment, mobile telephones, portable computers, and emergency backup lighting.

Mercury Thermostats

Mercury thermostats are located in many buildings including offices, schools, industrial facilities, and homes.

Pesticides

Agricultural pesticides that are recalled under certain conditions and unused pesticides that are collected and managed as part of a waste pesticide collection program. Pesticides may be unwanted for a number of reasons, such as being banned, obsolete, damaged or no longer needed due to changes in cropping patterns or other factors.

Hazardous Lamps

Examples of common universal waste hazardous lamps include, but are not limited to, fluorescent lights, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps. Many used lamps are considered hazardous wastes under the Resource Conservation and Recovery Act (RCRA) because of the presence of mercury or occasionally lead.

REQUIREMENTS

If your waste includes hazardous batteries, pesticides, thermostats, or lamps, you must decide whether or not you will manage them as universal waste. You may choose between traditional hazardous waste regulations or universal waste rule standards. However, flip-flopping between the two sets in order to avoid meeting requirements of one or both sets of regulations is not allowed. For example, storage time limits exist for both management scenarios. Flip-flopping between regulations will not extend storage time.

If you decide to manage these wastes under the traditional hazardous waste regulations, you must count them in determining whether you are a conditionally

exempt small quantity generator (CESQG), a small quantity generator (SQG) or a large quantity generator (LQG). They must also be reported on the generator annual report if you are required to file an annual report. Universal wastes are not counted for the purpose of determining generator category, and need not be reported on your hazardous waste report.

PROPER HANDLING AND STORAGE

If your facility manages any of the above mentioned universal wastes at your site, then you are either a small quantity handler or a large quantity handler of universal waste. A small quantity handler of universal waste is any facility that handles less than 5,000 kg (11,000 lbs) of total universal wastes on site at any time. Requirements include packaging in a way to minimize breakage; immediately cleaning up any leaks or spills; employee training, and properly labeling containers. A large quantity handler of universal waste handles 5,000 kg (11,000 lbs) or more of total universal wastes on site at any time. Requirements include EPA notification; packaging in a way to minimize breakage; immediately cleaning up any leaks or spills; employee training, and properly labeling containers; and complying with record keeping and reporting requirements. **Both handlers can store universal waste up to one year on site.**

Universal waste transporters must meet applicable DOT standards; comply with record keeping and reporting requirements; and comply with applicable requirements of 6 NYCRR Part 364 if transporting more than 500 lbs of total universal waste in any shipment. Common carriers can transport up to 500 lbs of universal waste in any shipment.

Destination facilities must comply with all applicable requirements of 6 NYCRR Parts 370 through 374-3 and 376, including notification of hazardous waste activity and obtaining a Part 373 hazardous waste permit, if applicable.

LAMP CRUSHERS

Lamps being managed under the universal waste rule may not be crushed. If you wish to crush your lamps, you will need to manage the lamps under the traditional hazardous waste regulations. This will require that you count the weight of the lamps toward determining hazardous waste generator category, and you will be required to meet applicable generator, transporter and transfer facility standards. Crushing is considered a form of hazardous waste treatment, and under ordinary hazardous waste generator regulations, hazardous waste lamps may only be crushed if the process is exempt from hazardous waste treatment regulations (6 NYCRR 373-1.1(d)(1)). The common exemptions that might be used are the on-site treatment by a conditionally exempt small quantity generator; the first step of a recycling process, if the lamps will be directed to a mercury recycler; or the treatment in the tank or container in which the lamps are being stored. Generators who wish to use one of the latter two exemptions should seek specific guidance from the Technical Determination Section at (518) 402-8633. The crushed lamps are usually considered hazardous waste for mercury, and sometimes for lead, and must be handled and disposed of via normal hazardous waste requirements.

Freshwater Wetlands Regulations

Wetlands are known by names such as marshes, swamps, bogs, and wet meadows. The Freshwater Wetlands Act identifies wetlands on the basis of vegetation because certain plants are good indicators of wet soils over time. Typical wetland vegetation may include wetland trees and shrubs, such as willows and alders; emergent plants, such as cattails and sedges; aquatic plants, such as water-lily; and bog mat vegetation, such as sphagnum moss.

Wetlands are valuable to the people and to the health of the environment. Some functions and benefits that wetlands perform are:

- Flood and storm water control. They absorb, store, and slow down the movement of rain and melt water, minimizing flooding and stabilizing water flow.
- Surface and groundwater protection. They often serve as groundwater discharge sites, maintaining base flow in streams and rivers and supporting ponds and lakes.
- Erosion control. They slow water velocity and filter sediments, protecting reservoirs and navigational channels.
- Pollution treatment and nutrient. They cleanse water by filtering out natural and many man-made pollutants.
- Fish and wildlife habitat. They are one of the most productive habitats for feeding, nesting, spawning, resting and cover for fish and wildlife, including many rare and endangered species.
- Public enjoyment. They provide areas for recreation, education, and research.

PERMIT EXEMPTIONS

The following activities either have been exempted from regulation or are not regulated because they will not substantially impair any of the functions and benefits of freshwater wetlands:

- Continuing with all existing activities directly associated with such use, except for those activities covered by items 38-41 in 6 NYCRR Part 663, that does not involve expansion or significant alteration of existing use and does not affect the wetland area.
- Establishing scenic, historic, wildlife, and scientific preserves, where no significant impairment of the wetland or its benefits is involved.
- Boating, hiking, swimming, camping, picnicking, and other similar non-motorized forms of outdoor activity, where no significant impairment of the wetland or its benefits is involved.
- Depositing or removing the natural products of wetlands in the process of recreational or commercial fishing, shell fishing, agriculture, hunting or trapping, including the erection and maintenance of temporary hides or blinds.
- Conducting educational or scientific research activities where no significant impairment of the wetland or benefits is involved.
- Establishing walking trails where no significant impairment of the wetland or benefits is involved.
- Establishing an individual recreational mooring.
- Gathering fuel wood, except as covered by items 22-24 of 6 NYCRR Part 663.

- Conducting an agriculture activity as defined in 6 NYCRR section 663.2.

PERMITTING

If your marina is a commercial facility located within 100 feet of a designated wetland that is 12.4 acres (5 hectares) or larger, and performs construction (docks, boat stacking), dredging, gas storage, or pump-out, you may be required to obtain a Part 663 wetlands permit. Below is a brief overview for some of the activities that may require a permit. If your marina is involved with any of the following activities, you should contact your DEC regional office to see if a permit is required.

Existing Structures and Facilities

Normally, maintenance, repair, or restoration of existing facilities will not cause adverse impacts to wetlands. This is not always true for construction activities that are associated with such maintenance, repair, and restoration, such as placing of access roads, staging areas, and utilities.

Operating Motor Vehicles

Intense use of motor vehicles may impair any of the several functions and benefits of wetlands by introducing or increasing contaminants, noise, or other forms of pollution, or by removing or reducing vegetation and exposing soil and increasing erosion. Occasional use generally does not require permitting.

Draining, Filling, Grading, Clear-cutting, and Dredging

The draining of wetlands may lower groundwater levels, may increase downstream peak flows, and may decrease water storage capacity and downstream base flow. It may also cause changes in vegetation and water temperature, increase stream bed scouring, and sediment deposition.

Filling decreases the number and size of wetlands, thereby decreasing their ability to collect runoff and prevent erosion and sediment deposition downstream.

Grading a wetland or adjacent area can substantially alter surface water drainage and flow patterns, may temporarily increase erosion, and may eliminate fish and wildlife habitat.

Clear-cutting removes the vegetative cover of wetlands and may reduce their ability to absorb water and serve as habitat. It can also cause soil erosion.

Dredging or excavation may increase water depth and remove wetland vegetation, thus altering the basic characteristics of the wetland. Fish and wildlife feeding or reproductive capacities may be altered.

Dams, Locks, and Bulkheads

Structures of this type are usually indicative of some form of development which may disrupt human use or occupancy of the wetlands area. Generally speaking, docks built on piles are more compatible with the functions and benefits of wetlands than are docks built on fill.

Dams alter normal flow patterns and often increase water levels, thus eliminating or altering the natural vegetation.

Utilities

Installing utilities in or adjacent to wetlands may cause problems when extensive clearing and construction of access or maintenance roads occur.

Installing overhead lines could result in permanent adverse aesthetic impact on the wetlands. Overhead power lines may also result in higher bird mortality rates, either through collision or electrocution.

Pollution and Pesticides

The introduction of sewage effluent, runoff of pesticides, or disposal of toxic substances into wetlands or adjacent areas may contaminate ground and surface water with undesirable chemicals, nutrients, and organisms. The presence of pollutants or pesticides in wetlands or adjacent areas may increase mortality rate among fish and wildlife, alter their behavior or reproductive capability, and adversely affect their value as a food source. Excessive nutrients alter vegetative cover, fish and wildlife distribution, and water potability.

Buildings

The construction of buildings, accessory roads, and parking areas can have several effects on wetlands. Roofs and paved areas shed rain which could result in more turbulent stream flow, more erosion and sedimentation, and higher water levels in surrounding areas, including nearby wetlands.

For a complete list of activities associated with each of the categories listed above, please refer to subdivision 663.4(d) of the Freshwater Wetlands Permit Requirements.

Protection of Waters - Article 15, Title 5 of the ECL

- Protection of Waters (Article 15, Title 5 of the ECL)
- State 401 Water Quality Certification
- Freshwater Wetlands (Article 24 of the ECL) and
- State Pollution Discharge Elimination System (SPDES) (Article 17 of the ECL)

PROTECTION OF WATERS

- Docks and Moorings
- Excavation and Fill in Navigable Waters
- Disturbance of Protected Streams

Docks and Moorings

Examples of exempt activities include:

- Docks and other structures on State owned lands for which a lease has been obtained from the NYS Department of General Services.
- A docking facility for five or fewer boats and a perimeter area of less than 4,000 square feet.
- Mooring area for fewer than 10 boats.
- Seasonal installation and removal of floating docks.
- Relocation, replacement, rearrangement of floating docks and walkways within the established perimeter.
- Ordinary maintenance and repair of dock and mooring structures.

Excavation and Fill in Navigable Waters

- Applies to navigable waters inundated at mean high water.
- Applies to marshes, estuaries and wetlands that are adjacent to or contiguous with navigable waters.

Disturbance of Protected Streams

- Applies to water bodies protected by water quality standards

TYPICAL MARINA PROJECTS REQUIRING DEC PERMITS

- Bulkhead and breakwater installations, replacements and repairs
- Dredging
- Shoreline stabilization
- New dock construction

DEC PERMIT APPLICATION REQUIREMENTS

- Joint Application for Permit
- Location Map
- SEQR Environmental Assessment Form
- Coastal Consistency Assessment Form
- Project Plans and Narrative Description of the Work
- Photographs of the work site

When submitting your permit application, it is important to include as much information as possible about the project with your initial submission. There may be a requirement to publish a Notice of Complete Application in the local newspaper.

Project Planning Guidance

- Try to apply early for permits.
- Contact our office for information and application forms.
- There are Seasonal Environmental Windows for work to be conducted in the water.
- Avoid filling in the water to create more land area.
- Bulkheads and shore protection structures should be designed to follow the existing shoreline or the existing bulkhead line.

Dredging Disposal Options

- Upland disposal
- Corps of Engineers confined disposal areas, usually used for contaminated sediment disposal
- Upland disposal with beneficial use determination
- Do you have permission from the land owners where you wish to dispose of sediment?

OTHER AGENCIES THAT MAY BE INVOLVED WITH THE REGULATION OF MARINAS

- U.S. Army Corps of Engineers
- New York State Department of State
- New York State Canal Corporation
- New York State Office of Parks, Recreation and Historic Preservation
- U.S. Coast Guard.

Solid Waste Regulations

In 1988, the Solid Waste Management Act put emphasis on waste reduction, reuse and recycling as primary solid waste management methods.

Every marina facility should be aware of what items they are discarding and how they are disposing of them. The best way to do this is to develop a solid waste management disposal plan for your shop. The first step in developing your plan is to conduct a waste audit of your business. A waste audit will show where you can improve your purchasing practices and help identify potential waste reduction and recycling options. Also, a waste audit will help you get accurate information on the nature and quantity of your waste. Businesses that implement waste reduction, reuse and recycling have benefitted by reducing costs.

Here are some waste reduction and recycling strategies your business can adopt:

- Use reusable shipping containers and pallets.
- Purchase reusable products and supplies.
- Recycle your office paper, plastics, glass, metal and other materials.
- Make sure your employees practice waste reduction and recycling methods.
- Purchase products with recycled content.
- Turn off computers, lights, and other electrical equipment when you leave for the day, or turn them off when not using them.
- Place trash receptacles in convenient locations for marina patrons, and at boat launch sites.
- Utilize 2-sided copying whenever possible, and use waste paper as scrap or draft paper.
- Use e-mail and automated forms whenever possible.
- Consolidate files and functions in order to reduce duplication.
- Use paper and other materials with recycled content.
- Encourage the use of coffee mugs and real spoons versus styrofoam and plastic.
- When purchasing print jobs, specify environmentally friendly options such as recycled paper, no extra packaging, and soy-based inks.
- Consider the total costs of energy, supplies, and waste pick-up and assign responsibility for waste reduction to the proper staff.
- Send copier and printer toner cartridges back to the supplier for refurbishing.
- Purchase products with less packaging.
- Purchase products made from recycled or post-consumer materials.
- Purchase only as much of a chemical as you can use and follow all label instructions.
- Try to find alternative products without hazardous contents that will accomplish the same task.
- By in bulk, when practical, but do not by more than you can use before the product expires.
- Take batteries to recycling facilities.
- Mulch or compost your yard waste and vegetable scraps from your cafeteria.
- If necessary, caulk windows and doors and install storm windows, doors, and insulation to conserve energy.
- Use energy-efficient bulbs and fixtures and install light sensors in rooms.
- Use baking soda as a cleaner instead of more toxic solutions.
- When painting, use latex paints whenever possible.
- When using paint thinner for cleanup, save the used thinner is a covered bucket; the paint solids will settle to the bottom,

and the thinner can be poured off and reused.

- Conserve energy by using energy-efficient heating and air conditioning systems that use solar power or natural gas.
- Install low-flow water faucets and low capacity toilets.
- Eliminate all leaks and take measures to minimize the potential for spills.
- Use non-toxic and recycled materials whenever possible.
- Improve the operating efficiency of equipment.
- Improve material receiving, storage, and handling practices and policies to reduce wasted product.
- Conduct a review of the use of raw materials and generation of wastes and consider the full cost of wasting.
- Recycle whatever wastes cannot be avoided.
-

In addition, you may want to identify the materials that comprise the largest portion of your waste stream and establish a separate recycling program targeting the materials identified.

To obtain a copy of the *Waste Audit Reference Manual*, call the DEC Bureau of Waste Reduction and Recycling at (518) 402-8705.

Bulk Storage Regulations

If your facility utilizes solvents, corrosives, degreasers, petroleum products, etc., you may have to comply with State and federal bulk storage regulations. These bulk storage regulations pertain to tank registration, upgrades, and inspections for the safe handling of petroleum products, and the storage of over 1,000 different hazardous substances as well as stringent design standards for new construction.

The bulk storage regulations consist of petroleum bulk storage and chemical bulk storage regulations. The storage of hazardous substances are regulated under the Chemical Bulk Storage (CBS) program. Both programs are outlined below.

STORAGE REQUIREMENTS FOR USED OIL

Any tank storing used oil, no matter what the size, is subject to petroleum bulk storage requirements, including registration with DEC. Drums do not have to be registered. There are two product categories, i.e., used oil (collection for reprocessing or disposal off site), and use oil fuel which is burned onsite to provide heat. You can obtain a copy of the registration form from our website at: http://www.dec.state.ny.us/website/der/bulkstor/forms/index.html

HAZARDOUS SUBSTANCES

New York's chemical bulk storage (CBS) program regulates facilities with underground storage tanks (USTs) of any capacity and aboveground storage tanks (ASTs) of 185 gallons or greater capacity. To be regulated under the CBS program, tank must store a hazardous substance on the list of hazardous substances in Part 597 of the regulations. The substance must be present in concentrations of one (1) % or more by weight or volume either singly or in combination. The CBS regulations are found in 6 NYCRR Part 612-614. All part of these regulations became fully effective in 1994. The CBS regulations establish requirements for facility registration and spill reporting as well as requirements for design, construction, installation, operation, maintenance, repair, monitoring, testing, and inspection of storage facilities. The registration requirements and fee schedules are found in Part 596.

Storage Requirements for Used Antifreeze

If you are accumulating used antifreeze (ethylene glycol) and temporarily storing it in a stationary tank, the tank may be subject to the CBS regulations. The collection tank is subject to the CBS regulations if both of the following conditions are met: 1) The tank is underground of any capacity, or 185 gallons or greater aboveground; 2) The product is not a RCRA hazardous waste*, will not be recycled, but will be sent off site for disposal as a solid waste.

* To determine if used ethylene glycol is a RCRA hazardous waste, the product would have to be tested to determine whether threshold concentrations of certain heavy metals or organic chemicals are exceeded. If these threshold concentrations are exceed, the used ethylene glycol becomes a RCRA hazardous waste and is exempt under the CBS program.

Regulatory Deadlines and Requirements for Facility Upgrade

Part 598 establishes the upgrade requirements for USTs with a deadline of December 22, 1998 (the same as EPA's UST program) and for ASTs with a deadline of December 22, 1999. Facilities constructed after February 11, 1995 must meet the standards for all new or substantially modified facilities (Part 599). Substantial facility modification occurs when a tank is added or permanently closed or an existing tank is replaced. Repairs and replacements to ancillary piping, vents, gauges, pumps, etc., are not considered substantial modifications.

New and replacement USTs must have corrosion resistant tanks and piping systems, secondary containment, a leak monitoring system, spill and over fill prevention devices, and have the required valves, gauges and alarms.

The deadline for upgrading ASTs was December 22, 1999. After that date, steel tanks in contact with soil must be cathodically protected. Also, tanks constructed of materials which could melt when exposed to fire must be protected from fire. All ASTs must have secondary containment and be equipped with a product level gauge and an overfill protection device. Storage tanks must be equipped with valves to control the flow of product for each tank connection.

Secondary Containment at Transfer Stations

A transfer station is an area where pipes or hoses are connected and disconnected to empty or fill a storage tank. This includes railways, roads, containment basins, curbs, collection sumps, and impervious pads where a vehicle or container is located to off-load or to receive a hazardous substance, where a coupling to a transfer line is made for the purpose of hazardous substance transfer, or where a system to collect and contain spills resulting from transfer is located. As of December 22, 1999, all transfers of hazardous substances at a registered facility must occur within a transfer station equipped with permanently installed secondary containment. The goal of the program is to control any release from bulk storage systems and transfer operations and to reduce or eliminate releases to soil, surface water, and groundwater.

Spill Prevention Report (SPR)

The SPR is one of the cornerstones of the CBS regulations and every CBS facility was required to have one by August 11, 1996. The major elements of the SPR require a listing of all spills over the previous five-year period, an assessment of the causes of those spills, a compliance assessment of bulk storage operations, records of inspections, a spill response plan, and management's signature indicating acceptance and approval of the report. A proper SPR can minimize and eliminate injury, loss of life, hospitalization, subsequent remediation, and reduce overall liability.

PETROLEUM PRODUCTS

The Petroleum Bulk Storage (PBS) regulations became effective on December 22, 1985. The regulations apply to Underground Storage Tanks (USTs) and Aboveground Storage Tanks (ASTs) at PBS facilities with a combined storage capacity of over 1,100 gallons.

The PBS regulations are contained in 6 NYCRR 612-614. Under these regulations, owners were required to register existing facilities with DEC by December 27, 1986. Facilities must re-register every five years. Registration fees vary from $50 to $250 per facility, depending on combined storage capacity of the facility. New facilities must be registered before being placed into service. DEC must be notified within 30 days prior to

substantial facility modification (adding, permanently closing or replacing a tank).

Nassau, Suffolk, Rockland, Westchester, and Cortland Counties administer the program in these localities, pursuant a delegation agreement with DEC. Because these counties may have more stringent requirements than those of the State, owners and operators should contact the county to learn of specific local requirements.

All facilities regulated under PBS program must meet certain storage and handing requirements established by DEC. These include color coding of fill ports, spill and over fill prevention devices, and secondary containment for aboveground tanks. Aboveground tanks must be inspected monthly visually and operators of USTs must keep, reconcile and maintain daily inventory records. In the event of an unexplained inventory loss, DEC and the tank owner must be notified within 48 hours. Substandard tanks and piping systems must be tested every five years and leak detection devices must be monitored weekly. Ten-year structural inspections are required ASTs which are 10,000 or more in capacity and rest directly on the ground.

Tanks that are temporarily out-of-service (30 days or more) must be drained of product to the lowest draw off point. Fill lines and gauge openings must be capped or plugged. Inspection and registration must continue. Tanks which are permanently out-of-service must be emptied of liquid, sludge and rendered vapor free and must either be removed or filled with solid inert material, such as sand or concrete slurry. DEC must be notified within 30 days of filling or removal.

Part 614 applies to all new and substantially modified facilities. New USTs must corrosion resistant and have secondary containment. Although there are several options for secondary containment listed in the regulations, a double-walled tank with monitoring in the interstitial space is is the most effective and is recommended. Although interstitial space monitoring must be used with a double-walled tank, other leak detection options which may be used include an automatic tank gauging (ATG) system, or one or more observation wells are available within secondary containment. New ASTs must be constructed of steel. If their bottom rests on the ground, the tank must have cathodic protection. An impermeable barrier must be installed under the tank bottom, with monitoring between the barrier and the tank bottom. New underground piping systems must be corrosion resistant and designed with a 30-year life expectancy. Piping systems must be constructed of fiberglass-reinforced plastic or other non-corrodible materials.

Secondary Containment

Secondary containment defines any structure that is designed to prevent leaks and spills from reaching the land or water outside the containment area. All aboveground tanks with a capacity of 10,000 gallons or more must be equipped with secondary containment. All aboveground tanks smaller than 10,000 gallons are required to be equipped with secondary containment if the facility is within close proximity to ground or surface waters of the state. Facilities within 500 feet of the following resources may be considered in close proximity to ground or surface waters:

- perennial or intermittent stream;
- public or private well;
- primary or principal aquifer;
- wetlands as defined in 6 NYCRR 664;
- lake, pond, estuary, etc.; or
- storm drain.

FEDERAL UST REGULATIONS

If you store motor fuels, used oil, or lubricating oil in USTs that are over 110 gallons in capacity, these storage systems my

be subject to the federal Underground Storage Tank (UST) regulations (40 CFR 280). These regulations are similar to the State PBS regulations, but exceed requirements of the State regulations in several areas. These include the December 22, 1998 deadline for upgrading, replacing or permanently closing an UST system. Upgraded systems are required to have corrosion resistant tanks and piping, leak detection, and spill and overfill prevention devices.

When an UST system is permanently closed, a site assessment must be preformed to check for contamination. DEC guidance for performing a site assessment is found in SPOTS #14. For more information on the federal UST program, go to EPA's web site: www.epa.gov/OUST, or call the RCRA/Super Fund Hotline at 1-800-424-9346.

WHEN TO REPORT A SPILL?

Reporting spills is a crucial first step in the response process. There may be several different state, local, and federal laws and regulations that require spillers to report petroleum and hazardous materials spills.

Hazardous Substances

Associated with each regulated hazardous substance under Part 597 is a Reportable Quantity (RQ); one for a release to air and one for a release to land or water. Appropriate parties are required to take prompt remedial action to protect human health and the environment in the event of a spill. A spill that exceeds the RQ but is contained by effective secondary containment, and which is cleaned up within 24 hours, is not reportable unless it could result in a fire or explosion or pose a health risk to adjacent parties. When a spill cannot be contained, it is considered a release to the environment. When a release exceeds the RQ for that substance, the facility must report the release to the DEC Spill Hotline (800) 457-7362 within two hours of discovery. Part 595 applies to all releases, including those from chemical process tanks, chemical fires, explosions, and non-registered facilities.

Petroleum Products

Petroleum spills must be reported to DEC unless they meet **all** of the following criteria:

- The spill is known to be < 5 gallons.
- The spill is contained and under the control of the spiller.
- The spill has not and will not reach the State's water or any land.
- The spill is cleaned up within two hours of discovery.

All reportable spills must be reported to the DEC spills Hotline at 1-800-457-7362.

Pesticides Management Regulations

WHAT ARE PESTICIDES?

A pesticide is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects, rodents, fungi, weeds, or other forms of plant or animal life or viruses. Marinas may require the use of pesticides to control a variety of plant or insect pests in and around their facility, but the most visible use of pesticides may be the application of antifouling paints to boat bottoms or marine structures to control aquatic organisms, such as barnacles and algae. These products, which may contain compounds with tin or copper, are toxic to the aquatic environment and must be used carefully. The New York State regulations pertaining to these and other pesticides are found under 6 NYCRR Parts 320-329. For more specific information regarding the use of pesticides, please call the Bureau of Pesticides Management at (518) 402-8781.

PESTICIDE PRODUCT REGISTRATION

The Environmental Conservation Law (ECL) §33-0701 requires every pesticide product which is used, distributed, sold or offered for sale in New York State to be registered with DEC. Pesticides are registered as either **general-use pesticides (or unclassified)**, which may be sold by anyone or used by anyone on their own property, or **restricted-use pesticides**, which may be sold, distributed, purchased, possessed and used only by the holder of a written permit and/or pesticide applicator certification issued by DEC. Pesticides classified as restricted-use may pose a significant risk to the applicator, the public health or the environment if stored, handled or applied improperly. A **commercial permit,** issued by DEC, is required to sell, offer for sale, or possess for the purpose of resale any restricted-use pesticide.

Businesses may check if the products they use are registered in NYS or if they are classified as general or restricted-use by going to the Cornell Pesticide Management Education Program (PMEP) website at **pmep.cce.cornell.edu/plms** ,or you can go to the DEC website at **www.dec.state.ny.us/website/dshm/pesticid/pestreg.htm.**

PESTICIDE APPLICATOR CERTIFICATION AND BUSINESS REGISTRATION

The pesticide applicator requirements are explained in detail in Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 325, Application of Pesticides.

Marina owners, or their employees, who apply antifouling paints, as a service to boat owners, must register annually as a business with DEC and must employ at least one commercial pesticide applicator, fully certified in subcategory 5D - Aquatic Antifouling Paints. This certified applicator may directly supervise pesticide apprentices or technicians, employed by the marina, who apply antifouling paints. An apprentice is required to receive training and application experience, according to 6 NYCRR Part 325.10 before the apprentice can apply unclassified antifouling paints under the off-site direct supervision of a certified applicator.

BOAT OWNERS

The application of unclassified antifouling paints by boat owners, on marina property, is prohibited unless the boat owner personally owns the drydocked boat being painted and leases a specific area, from the marina owner, to do such work. These boat painting areas must be located away from the water's edge and designed to prevent runoff. DEC recommends that marina owners monitor such applications to assure that paint chips or other wastes are collected and prevented from contaminating the surrounding area. In addition, DEC recommends that lease agreements state that boat painters must follow label directions and to notify the marina owner immediately if a spill occurs.

Applications made by boat owners in this manner occur on marina property so any contamination or other environmental problems resulting from the customer applying antifouling paints are still the responsibility of the marina owner. Following these recommendations will greatly reduce potential liabilities related to these activities.

PESTICIDE USE SAFETY AND PERSONAL PROTECTION

Pesticides must be used in such a manner and under such wind and other conditions as to prevent contamination of people, pets, fish, wildlife, crops, property, structures, lands, pasturage or waters adjacent to the area of use. Pesticides must always be used only in accordance with label and labeling directions.

Prior to any pesticide application, the certified pesticide applicator must provide safety training to individuals using pesticides under the certified pesticide applicator's direct supervision. The training shall include, but is not limited to, the following topics: site-typical detailed guidance for pesticide use, pesticide safety, and the use of personal protective equipment including selection of appropriate respirators.

Certified pesticide applicators must provide relevant safety information, restricted entry intervals and personal protective equipment and other safety equipment beyond normal work attire, as specified by the pesticide label, to individuals using pesticides under the certified pesticide applicator's direct supervision. However, if the certified pesticide applicator is not the owner or manager of a registered pesticide business, the owner or manager of the marina must provide such information and equipment.

All equipment containing pesticides and drawing water from any water source shall have an effective anti-siphon device to prevent backflow. Empty noncombustible pesticide containers, such as plastic or metal containers, must be cleansed before disposal, using the three-rinse technique as defined in 6 NYCRR 325.1, or other methods approved by the Department, except that containers of ready-to-use pesticides that do not require dilution must be drained only for one 30-second period.

AQUATICS PERMITS

Section 15-0313 of the ECL provides NYSDEC with the authority to require an aquatic permit for the application of pesticides to water bodies of New York State that are greater than one acre in size or with an outlet to surface waters. These standards are further defined in regulation, specifically 6 NYCRR Parts 327, 328 and 329, which list specific requirements for the control of aquatic vegetation, undesirable fish and aquatic insects, respectively.

In addition, aquatic pesticides are also regulated under Part 326 which, since April 1, 1993, has classified all aquatic pesticides as restricted. This means they can only be purchased and used by individuals who either

possess pesticide applicator certification, or possess a special permit for the purchase and use of a restricted pesticide. An aquatic permit or a special permit for the purchase and use of a restricted pesticide may be obtained from the Department's Regional Office that covers your area.

INTEGRATED PEST MANAGEMENT

In an effort to reduce to the greatest extent possible the use of chemical pesticides, your facility should institute an integrated pest management plan (IPM). An IPM plan is a systematic approach to managing pests, including but not limited to identifying needed repairs and keeping storage areas within the facility clean. The plan should focus on long-term prevention or suppression of pest populations with minimal impact on human health, the environment, and non-target organisms. IPM incorporates all reasonable measures to prevent pest problems by properly identifying pests, monitoring population dynamics, and utilizing cultural, physical, biological or chemical pest population control methods to reduce pests to acceptable levels.

PESTICIDE REPORTING LAW AND RECORD KEEPING

The Pesticide Reporting Law (PRL) requires the annual submission of reports, by February 1 of each year, detailing pesticide sales and use activities. All commercial applicators shall maintain pesticide use records for each pesticide application containing the following:

a. EPA registration number;
b. product name;
c. quantity of each pesticide used;
d. date applied;
e. location of application by address (including five-digit zip code).

Such records shall be maintained for a period of not less than three years. All commercial applicators shall also maintain corresponding records of the dosage rates, methods of application and target organisms for each pesticide application. These records shall be maintained on an annual basis and retained for a period of not less than three years and shall be available for inspection upon request by the department. For more information you may e-mail DEC at **prl@gw.dec.state.ny.us**, or call toll-free at 1-888-457-0110.

Waste Stream Management

To assist the marina industry in complying with environmental regulations, this section discusses some best management practices for waste streams typically generated by this industry. The list of waste streams that follows includes an interpretation of the DEC regulatory requirement and the preferred waste management techniques.

Abrasive and Alkaline Cleaning Compounds

REGULATORY REQUIREMENTS

If your facility uses alkaline or acidic cleaning solutions, you must make a hazardous waste determination on the spent solution before disposing of it. If the pH of this waste is 2.0 or less; or 12.5 or greater, prior to any waste treatment, then these are hazardous wastes. In addition, these wastes could be hazardous if they fail the TCLP test for metals.

BEST MANAGEMENT PRACTICES

Chemical substitution is one of the best ways to reduce your hazardous waste generation during your cleaning process. Another tip is to use mild alkaline and acidic cleaners. Mild alkaline detergent solutions, such as sodium hydroxide, sodium carbonate, sodium phosphate, and borax, are used to clean many substrates because no hydrogen gas is formed during the process. These cleaners also remove rust, scale, and oxides from metal surfaces. Generally, the stronger the solution, the faster it cleans. However, mild solutions are used in the process line for thorough rinsing.

For more information on abrasive and alkaline cleaning compounds, refer to the parts cleaning and degreasing information.

Absorbents and Floor Dry

REGULATORY REQUIREMENTS

You must make a hazardous waste determination on all absorbent pads or floor dry material that is used to clean up spills. If your facility has a spill that could be harmful to public health or the environment, you must contact DEC immediately at 1-800-457-7362.

Alert

Before you discharge absorbents or floor dry into dumpsters, make sure you comply with all the necessary DEC regulations.

BEST MANAGEMENT PRACTICES

Good housekeeping practices are the best way to minimize spills. The fewer spills that occur, the less absorbents, floor dry or other absorbent material will be needed to clean up these spills. Here are some tips to help you prevent spills at your facility:

- Train your employees. Since employees are the first line defense against spills, make sure that each employee is taught the importance of spill prevention.
- If you must use absorbents, make sure to purchase absorbent material that can be reused. Absorbent “socks,” for example, can be used about 10 times.
- Make sure all of your tanks or drums that contain liquids have some kind of

containment in case of a leak or spill.

- After wiping up a spill with absorbents or a mop, drain excess liquids into the waste container for that particular waste. For example, if you are cleaning up an oil spill, squeeze the excess oil in the container marked *USED OIL*.
- Use shop towels to wipe up small spills, then send your shop towels to be laundered.
- Consider an award program for employees that keep their work areas clean or for workers who come up with good pollution prevention ideas.

Burn Barrels and Open Burning

REGULATORY REQUIREMENTS

Burn barrels and all other types of open fires are specifically prohibited by NYSDEC air regulations under 6 NYCRR Part 215. New York State law prohibits the burning for disposal of rubbish generated on site by commercial activities. Burning solid waste generated by your business would constitute violations of both air regulations and solid waste regulations.

Coating Operations

REGULATORY REQUIREMENTS

If your marina performs any painting or coating operations, a hazardous waste determination must be made on waste paint, solvents/thinners, paint sludge, primer waste, and spray booth filters. The paints and paint sludges may be hazardous if they contain heavy metals, such as arsenic, lead and chromium. The solvents may be characteristically hazardous due to their ignitability or they could be a listed hazardous waste. Also, many primers, lacquers, and enamels are flammable.

During metal coating operations, volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) are released into the environment. These pollutants are regulated under the Clean Air Act. To learn more about these requirements, refer to the section on air regulations.

BEST MANAGEMENT PRACTICES

Here are some tips on minimizing the waste from coating operations:

- Train employees in paint application techniques. Proper training in correctly applying paint can reduce your waste and VOC emissions.
- Make sure your facility uses high-volume/low-pressure (HVLP) spray guns. These spray guns have transfer efficiencies of about 60 to 80 percent compared to standard spray guns with less than 50% efficiency.
- Train employees in the proper cleaning and maintenance of equipment. This is essential for achieving a high quality finish, especially in the new spray guns.
- Perform all spray painting in an enclosed spray booth equipped with filters.
- When cleaning spray guns with solvents, use smaller diameter tubing so that you will use less solvent.
- The solvent used to clean spray guns can be reused to thin paint of the same color.
- If possible, switch to water-based paints and primers.
- Switch from lacquer to enamel-based paints. Lacquer paints may contain 70 to 90 percent solvent by volume, while enamels contain 55 to 75 percent solvent by volume.

- Use solvents with low or no VOC content.
- Purchase a small solvent distillation unit to recycle your paint thinners and solvents.

Floor Drains and Wastewater

The wastewater discussed in this section refers to all the wastewater generated at your facility that is not treated before it is discharged. This can include wastewater from spills, clean-up, leaks, or any other industrial wastewater that does not get treated.

Regulatory Alert

Do not discharge wastewater to your floor drains unless they are connected to either a public sewer or a holding tank.

Wastewater from marinas may contain heavy metals, toxics, solvents, oil and grease, gasoline, and other materials that could be hazardous. Care should be taken not to discharge these items, or other contaminants into floor drains unless you have approval from your local wastewater treatment facility, or are permitted by DEC.

REGULATORY REQUIREMENTS

The Environmental Conservation Law prohibits the discharge of pollutants into surface or groundwaters without a State Pollutant Discharge Elimination System (SPDES) Permit. The Safe Drinking Water Act, under the Underground Injection Control program administered by EPA was designed to prevent contamination of groundwater resulting from the operation of injection wells. In addition, the disposal of hazardous waste into floor drains may be a violation of the federal Resource Conservation and Recovery Act (RCRA).

If you have floor drains at your facility, you must do one of the following:

- Make sure they are connected to a public sewer system. In most cases, floor drains are connected to a publicly owned treatment works (POTW). However, the owner should refer to the Local Codes Enforcement Officer and the Sewer Use Ordinance before making any new connections. Some municipalities restrict floor drains from being connected to the sewer system, depending on the type of operation. Also, you may be required by your POTW to connect an oil/water separator between the floor drains and the sewer system. Oil/water separators should be checked on a regular basis to make sure they are working properly. This includes cleaning out the sludge annually, testing it for toxicity and then disposing of it properly. If you are a conditionally exempt small quantity generator (CESQG), you can transport this sludge to an approved facility. This includes transporting dried sludge to your local landfill, but prior approval is needed. See the resource guide section for locations of the household hazardous waste collection facilities.
- If no POTW is located in your area, make sure your floor drains are connected to some kind of holding tank, where the wastewater can be pumped out and treated or disposed of properly. All wastewater should be hauled away by a 6 NYCRR Part 364 DEC permitted waste transporter to avoid any liability.

BEST MANAGEMENT PRACTICES

Wastewater can be generated at your facility from washing floors or other cleaning operations. By minimizing the amount of wastewater, you reduce the amount of wastewater and sludge that must be managed or discharged. Here are some tips to help you minimize your generation of wastewater:

- Use dry floor cleaning methods. This includes sweeping and vacuuming.
- Train employees to use water efficiently.
- Use only nontoxic soaps to clean floors and marina craft.
- Prevent drips and spills from reaching the floor.
- If a small spill does occur, clean it immediately with shop towels or mops. This was discussed in the shop towel section. Never clean spills by hosing them down with water.
- Maintain marina craft only in areas where there are no floor drains. If floor drains are present, seal them off during work to prevent spills from entering the drains.
- Never have floor drains where hazardous materials are stored.
- If you collect your wastewater in a holding tank, try to reuse it whenever possible.
- Consider buying a water recycling unit to treat your wastewater on site.
- If your wastewater is nonhazardous, purchase equipment to evaporate your wastewater. Note that evaporators may require an air permit or registration. Evaporator bottoms may be hazardous waste.
- Wash your marina craft at an off-site commercial car wash.
- If you service vehicles at your facility, brush snow and ice off before bringing them into the service shop.

Fluorescent Bulbs and Other Hazardous Lamps

REGULATORY REQUIREMENTS

Currently, most waste fluorescent bulbs (referred to hereafter as "fluorescent lamps") are hazardous wastes due to their mercury content. Other examples of lamps that, when spent, are commonly classified as hazardous waste include high-intensity discharge (HID), neon, mercury vapor, high pressure sodium and metal halide lamps. The U.S. Environmental Protection Agency (USEPA) added hazardous waste lamps to the Universal Waste Rule (64 FR 36465 - 36490) in 1999, and DEC adopted these regulations on March 15, 2002. Handlers of hazardous waste lamps are able to choose between handling their lamps under the traditional regulatory scheme or as universal wastes. However, once you declare your lamps universal wastes, you must continue to handle them as universal wastes. Jumping back and forth between the traditional RCRA approach and the Universal Waste Rule in order to avoid any requirements is prohibited. If a handler of hazardous waste lamps fails to comply with the Universal Waste standards, they may be considered to be in violation of existing hazardous waste laws and regulations.

Most marinas are considered Small Quantity Handlers of Universal Waste defined as handlers of less than 5,000 kg or 11,000 lbs. of total universal wastes (hazardous batteries, certain hazardous pesticides, hazardous thermostats, or hazardous lamps, calculated collectively) on site at any time.

The requirements for Small Quantity Handlers of Universal Waste (including fluorescent lamps) require that lamps be packaged in a way to minimize breakage, that any broken lamps are immediately cleaned up, and that containers are properly labeled.

More information on handling of fluorescent lamps and universal wastes can be found on the DEC web site at: www.dec.state.ny.us/website/dshm/hzwstman/bulbs2.htm.You can also contact the Waste Management Section of the Division of Solid and Hazardous Materials at (518) 402-8633.

Fuel Filters

REGULATORY REQUIREMENTS

Metal fuel filters that are drained of all free liquids and taken to scrap metal yards for recycling are exempt from hazardous waste regulations. Otherwise, fuel filters must be managed as hazardous waste due to the ignitability characteristic of the gasoline. Fuel filters cannot be discarded in dumpsters or in the trash even when properly drained, since they may contain benzene or lead which is may be considered hazardous when a TCLP test is performed.

Gasoline

REGULATORY REQUIREMENT

Waste gasoline is regulated as a hazardous waste if it is sent for disposal. For more information on the hazardous waste regulations, please request a copy of the manual *Environmental Compliance and Pollution Prevention Guide for Small Quantity Generators* by calling (800) 462-6553 or from the DEC web site at: http://www.dec.state.ny.us/website/ppu/p2pub.html.

Waste gasoline is not considered a hazardous waste if it is recycled or burned as a fuel. Waste gasoline should be stored in properly grounded, labeled and closed containers on an impermeable surface with spill controls.

Lead Acid Batteries

REGULATORY REQUIREMENTS

If your lead-acid batteries are recycled, they do not have to be counted as hazardous waste, but are still subject to limited hazardous waste regulations, such as storage requirements. Lead acid batteries should be properly stored off the ground and should have proper containment in case of leaks. These batteries should be covered if stored outside to prevent the corrosive battery acid (which is usually hazardous) from being washed in the ground during rain or snow storms.

If your lead acid batteries are not recycled, they must managed under the traditional regulatory scheme as non-exempt hazardous waste.

BEST MANAGEMENT PRACTICES

Follow these tips for good management of lead acid batteries:

- Use an authorized recycler.
- Indoor storage is recommended for lead-acid batteries.
- Store batteries on an acid-resistant rack or tub.

- Batteries stored outside should be stored on impermeable surfaces and should have secondary containment. Also, it is recommended that batteries be covered to prevent acid run off.
- Keep a neutralizing agent, such as baking soda nearby in case of leaks or spills. If a spill does occur, the waste must be treated as a hazardous waste.
- When stacking batteries, make sure they are stored so that any fluid from leaking batteries will not be released to the environment.
- Electrolyte fluid in spent batteries contains a sufficient quantity of lead to make it a hazardous waste. This fluid, if discharged onto the ground, will frequently make the soil which absorbs it a hazardous waste.

Paint Scrapings and Abrasive Blast Wastes

REGULATORY REQUIREMENTS

Due to the metals contained in many of the paints used for the painting of boats and other water vessels, a hazardous waste determination should be made before you decide to discard paint scrapings as a solid waste. (See commonly asked questions, page 65). Paint scrapings should not be disposed of in a dumpster unless a proper hazardous waste determination has been made showing them to be nonhazardous waste. If chemical paint strippers are used, such as methylene chloride, you should be aware that the scrapings will become hazardous due to the listed waste introduced into the paint chips.

Abrasive blasting is often preferred to chemical stripping for removing paints. This process does not eliminate wastes since the most commonly used blasting media is sand or grit with a large volume of water. Blast waste water can constitute the largest single waste stream from many boat repair yards. The different types of abrasive blasting include: plastic media blasting, water jet stripping, thermal stripping, dry ice pellets, laser paint stripping, and cryogenic stripping.

Parts Cleaning and Degreasing

REGULATORY REQUIREMENTS

Spent solvents are dangerous to workers because they are toxic and emit harmful vapors. If your facility still uses a parts washing system that contains a hazardous solvent, you may be generating wastes that have EPA Hazardous Waste Codes F001-F005. Also, many solvents may be hazardous because of ignitability, which have an EPA Hazardous Waste Code of D001.

When using hazardous solvents in your parts washing system, you are required to keep track of the amount of spent solvent generated each month and must dispose of the spent solvent as hazardous waste. The following are some of the common spent halogenated and nonhalogenated solvents used in degreasing operations which are considered hazardous:

*Tetrachloroethylene (Perchloroethylene)
Methyl isobutyl ketone (MIBK)
Methyl ethyl ketone (MEK)
Chlorinated fluorocarbons
Trichlorofluoromethane
Carbon tetrachloride
Ortho-dichlorobenzene
*Methylene chloride
1,1,1-trichloroethane
Methanol

Isobutanol
Toluene
Acetone
Xylene
Benzene

*Methylene chloride and perchloroethylene are not VOCs and they have strict emission standards because of their **toxic** emissions.

If your facility uses any of the above parts washing solvents or degreasers, or any other hazardous solvent not listed above, you should make every effort to look for a reliable substitute that is nonhazardous or less hazardous. If you do choose to use a hazardous solvent, you must following the hazardous waste regulations.

TYPES OF PARTS WASHERS

There are many opportunities available to minimize or eliminate your generation of hazardous solvents. One of your first choices should be to use a nonhazardous or less hazardous parts cleaning system. Here are some tips you should follow before purchasing or leasing your parts washer:

- Buy a parts washer with a lid rather than an open bucket or pan. This reduces evaporation and spillage of solvent.
- Instead of leasing, purchase your own parts washer. Service agreements tend to change your solvents more often, which generates more waste. Also, if you are a conditionally exempt small quantity generator, you can transport your spent solvent and sludge to an approved facility.
- Talk to other facilities to find out which system works best. This will save you time and money trying to decide which system is best for you.
- When a supplier or vendor demonstrates a parts washer, make sure you specify that he take away the whole unit, including any still-useable solvent, if you decide not to buy it.
- Buy a parts washer with a drain shelf that fits inside the basin. This allows solvent to drain from parts prior to removing them from the washer.
- Buy a parts washer with a filtering unit that will extend the life of the solvent by filtering out contaminants. Remember, when discarding the filters, a hazardous waste determination must be made prior to disposal.
- Parts washers that are heated seem to work better than unheated units.

Marinas can choose from several different cleaning options including halogenated solvents, aqueous cleaners, ultrasonic cleaners, and electrocleaning. The following is a brief description of some types of cleaning systems.

Solvent Cleaners

Considered one of the best parts cleaners, chlorinated solvent vapor degreasers have strict air emissions standards because of VOC emissions (see air regulations section). The main advantage of chlorinated solvents, such as trichloroethylene, perchloroethylene, or methylene chloride is their cleaning effectiveness, especially in vapor degreasers. Handling or disposal of hazardous solvents is more involved and expensive than other cleaners. Because of these costs, marinas are investigating alternative cleaning methods. More than likely, your marina will not be using a vapor degreaser. If you do choose to use this degreasing process, below is a list of some methods to improve the efficiency:

- Install refrigeration coils in addition to water coils. Coils can help reduce vapors by approximately 40%.
- Cover the degreasing unit whenever possible. The best type of cover is a motor-controlled cover that closes automatically.
- Keep the tip of the spray wand below the vapor level during spraying operations.
- Remove parts from the degreaser slowly. Also, raise and lower the basket of soiled parts gently.
- Rack the parts so that the solvent drains out of the holes, joints, and crevices.

Aqueous Cleaners

Aqueous cleaning refers to the use of water, detergents, acids, and alkaline compounds rather than organic solvents. These cleaners are also made up of builders, surfactants, inhibitors, and chelators.

Builders are a basic ingredient of aqueous cleaners. The most common builders are sodium hydroxide, potassium hydroxide, and sodium silicates. These are all alkalines and are difficult to rinse.

Surfactants, also known as wetting agents, are used to reduce the surface tension of the cleaning solution. **Emulsifiers** take oils into the solution and keep them from re-contaminating the workpiece. Unfortunately, most surfactants are also emulsifiers. Aqueous cleaners work by breaking down the organic soils with builders and solubilizing them with emulsifiers. This tends to leave a large amount of spent wastewater. Weak emulsifiers, however, tend to keep the oils in suspension as long as the solution is agitated, but the emulsion breaks when the agitation stops. The soils can be removed and the solution can be reused.

Inhibitors reduce the effect of highly alkaline or acidic cleaners on sensitive substrates. Inhibitors prevent rusting or oxidation of parts after cleaning. Chromates and silicates are common pH inhibitors, but chromates have environmental disadvantages. Also, inhibitors can make rinsing more difficult and adversely affect subsequent plating operations.

Chelating agents are designed to keep the metal ions in solution. This, however, can cause problems with wastewater treatment.

Aqueous cleaners are among the most popular for degreasing parts and offer a good alternative to petroleum-based and halogenated solvents. The most common aqueous processes are: immersion with ultrasonic agitation, immersion with mechanical agitation, or spray washing. Aqueous cleaners can generally be used instead of solvent cleaners to remove soils and particulate matter. However, when soils and greases are part of the contamination, other steps might be needed to provide adequate cleaning. Rinsing and drying are of great concern because water can remain on the parts and cause rust. Therefore, aqueous systems require more elaborate rinsing and drying process.

In many cases, wastewater from aqueous cleaners or semi-aqueous processes may need to be treated before discharging to a publicly owned treatment works (POTW). Contaminants include organic matter (oil and grease), metals, and alkaline cleaners that may raise the pH to unacceptable levels. Pretreatment technologies include gravity separators, ultrafiltration, chemical treatment, precipitation, and carbon adsorption. If your facility is treating wastewater from aqueous or semi-aqueous processes, see “Can You Treat

Or Recycle Your Wastewater?" on page 17.

Some benefits of aqueous cleaners include:

- Less risk of hazardous exposure for workers and more environmentally friendly.
- Not flammable or explosive.
- Oils and greases can be removed more effectively.
- Potential savings in disposal costs.

The sludge from oil, grease, dirt and other contaminants should be cleaned out frequently. Prior to disposal, you must make a hazardous waste determination on the sludge. Nonhazardous sludge can be hauled by a septic tank company or, if dry, taken to a landfill. If you are a conditionally exempt small quantity generator (CESQG), dried sludge that is considered hazardous can be taken to an approved DEC facility as long as you get prior approval from the facility operator. Check with your local landfill operator for requirements.

Semi-Aqueous Cleaners

These cleaners are also called: less-toxic solvents, less-hazardous solvents, non-halogenated solvents, petroleum-based solvents or terpene solvents.

Semi-aqueous cleaners can be dissolved in water or applied in a concentrated form. They are called semi-aqueous because they can be applied either way. Terpenes are hydrocarbons derived from wood or citrus fruits, usually orange or lemon peel oils. Most of the semi-aqueous cleaners are not ozone depleters, but they are highly toxic to aquatic life, and they may still be a hazardous waste when spent. A hazardous waste determination should be made prior to disposal.

Ultrasonic Cleaners

This method uses high frequency sound waves to improve the cleaning efficiency of aqueous or semi-aqueous cleaners. The sound waves create microscopic sound bubbles that implode when the sound wave moves and the zone changes from negative to positive pressure. This process exerts enormous pressure (approximately 10,000 psi) and temperatures that loosen the contaminants and actually scrub the workpiece. Ultrasonic cleaning allows nonchlorinated degreasing to be practiced in applications where solvents had formerly been the only effective degreasing tool. Ultrasonic cleaning can be used on ceramics, glass, aluminum, and plastic, as well as electronic parts, wire, cables, rods, and detailed items that might be difficult to clean by other processes.

Electrocleaning

Electrocleaners are basically heavy-duty alkaline cleaners that are used with an electric current, either reverse, direct, or periodic reverse. These systems are designed for soil removal and metal activation where the work is immersed in the solution and current is applied. The objective of electrocleaning is to remove all the soils and activate the metals surface. The gas scrubbing of the oxygen assists in the removal of soils, while the reverse current aids in soil removal and prevents the deposition of any metallic film or non-adherent metal particles. A dilute mineral acid dip usually follows the final cleaner to neutralize the alkaline film on the metal surface.

SOLVENT DISTILLATION

If hazardous solvents must be used at your facility, consider purchasing a solvent distillation unit to recycle your solvents. For example, if your facility generates five gallons

of solvent waste, you may be able to reclaim four and a half gallons of solvent. This would leave you with only one half gallon of sludge to dispose of as hazardous waste. This sludge is called "still bottoms." Solvent is reclaimed by heating spent solvent to its boiling point in a "still", and then cooled, which produces nearly pure liquid solvent that can be reused. Spent solvent need only be counted the first time it is generated in a calendar month if it is reclaimed and reused on site. If spent solvents are counted, then still bottoms don't need to be counted for the purpose of determining generator category, but do need to be managed as a hazardous waste. **If, however, the solvent is recycled without prior storage or accumulation, then you don't have to count that quantity, but you must count the sludge for determining generator category.**

BEST MANAGEMENT PRACTICES

Here are some pollution prevention tips on managing your degreasing operations:

- Wipe off parts with a rag or wire brush before soaking in parts washer.
- Do not clean parts unnecessarily.
- If possible, try to maintain two parts washers so that you can use one for pre-rinsing.
- If your parts washer doesn't have a drip shelf inside the tub, use a drip tray to drain cleaned parts.
- Turn off solvent stream and cover the unit when not in use. If your unit is equipped with a heating element, turn it off at the end of the day.
- Store solvent waste in closed containers.
- Do not fill cleaning machine above fill line.
- Clean up spills immediately.
- Store wipe rags in closed metal containers.
- Do not agitate solvent to the point of splashing.
- When cover is open, control room drafts.
- Do not clean absorbent materials.
- Use aqueous or semi-aqueous cleaning systems.

Note: CFCs are prohibited for use in solvent cleaning machines.

Shop Towels

REGULATORY REQUIREMENTS

Industrial rags (also known as shop towels) or soiled clothing contaminated with listed or characteristic hazardous wastes do not have to be managed as hazardous wastes when they are sent to a commercial or noncommercial laundry or dry cleaner. The following conditions must be met:

- There is no exemption for rags or soiled clothing contaminated beyond saturation (containing free liquids). Any rags or soiled clothing containing free liquids are subject to full DEC regulation.
- Rags and soiled clothing must be managed in accordance with 6 NYCRR Part 372 and Subpart 373-1 until the materials are sent for laundering and counted as wastes generated and accumulated for the purpose of determining generator category. If you are required to submit an annual report to DEC, you must report all rags as hazardous rags in this report.
- All rags and soiled clothing that contain flammable materials must be stored and transported in fireproof containers.

BEST MANAGEMENT PRACTICES

Here are some tips on managing your shop towels:

- Send your shop towels to a laundry or dry cleaning service. You only have to manage your shop towels in accordance with the hazardous waste regulations until they leave your shop.

- If your facility is large enough, you may consider purchasing a centrifuge to collect and recycle excess solvent from your shop towels. Most laundries will not accept saturated shop towels. Centrifuges may be costly, which would **not** make this a cost-effective purchase for small businesses.
- Store your shop towels in metal safety cans to reduce the risk of fire. If your shop towels contain solvents, they should be stored in a double-bottom drum to allow the solvent to drip where it can be collected.

Spray Painting

See section on air regulations" for regulatory requirements.

BEST MANAGEMENT PRACTICES

- All spray painting and abrasive blasting operations should be performed in spray booths or tarp enclosures to prevent airborne residues from entering the air or surface waters.
- Eliminate airborne dust particles by using a dustless sander. These sanders use a vacuum collection system connected to a special housing on the sander that collects the sanding dust.
- Whenever possible, use low VOC paints.
- When spray painting indoors, vent fumes to outside.

Used Electronics

REGULATORY REQUIREMENTS

Most discarded electronics that would qualify as hazardous waste (e.g., computer monitors) are considered to contain sufficient quantities of scrap metal parts that they can be regarded as scrap metal themselves, and, thus, would be exempted from regulation (scrap metal exemption) as hazardous waste. The following conditions must be met:

- Prior Notification [6 NYCRR 371.1(c)(7)]: If the generator is not a Conditionally Exempt Small Quantity Generator (CESQG), both the generator and subsequent handlers in the recycling process in New York State are required to submit a "c7" notification to DEC. The "c7" notification gives certain basic information, such as the locations of generating and receiving facilities. Although written concurrence from DEC is not required, DEC will provide one upon request (provided the electronics item, in fact, qualifies for the exemption). Sample "c7" notification form can be found at www.dec.state.ny.us/website/dshm/hzwstman/c7notifi.pdf
- Scrap metal must ultimately be recycled. The scrap metal exemption requires that scrap metal pieces actually be reclaimed

from the hazardous electronics and that they be recycled.

Note that the scrap metal exemption cannot apply to a part separated from the whole component unless that separated part independently contains scrap metal pieces that will ultimately be reclaimed. For example, an all-plastic case that was separated from a computer monitor could no longer qualify for the scrap metal exemption, nor could broken cathode ray tube (CRT) glass. Note that an item which qualifies as hazardous scrap metal is still a hazardous waste if it will be recycled; but it is exempted from regulation.

Used Oil

REGULATORY REQUIREMENTS

Used oil is not regulated as a hazardous waste if it is recycled or burned for energy recovery. This means that your used oil, if not mixed or contaminated with hazardous waste, can be managed under the used oil regulations, 6 NYCRR Subparts 360-14 and 374-2. Used oil includes used crankcase oil, metal working oils, gear oil, transmission fluid, brake fluid, hydraulic fluid, dielectric fluid (excluding PCBs), and tank bottoms from used oil tanks.

If you are disposing of any used oil rather than recycling or burning for energy recovery (i.e., spills, soil contamination, or cleanup), or your used oil is mixed with other wastes, then you must make a hazardous waste determination and comply with any applicable hazardous waste regulations.

Remember
All retention tanks for storing used oil must be registered with DEC.

Used Oil Storage

Used oil must be stored in sturdy, leakproof drums or tanks in compliance with State or local building and fire codes, and they must be clearly labeled "USED OIL". In addition, the label for tanks must include the capacity of the tank. Underground tanks must be labeled at the fill port. All used oil tanks, regardless of size, are subject to petroleum bulk storage (Parts 612-614) requirements, including registration with DEC. However, registration fees are required only if the storage capacity of the used oil tank is greater than 1,1000 gallons, and the used oil is burned on site for heating. Also, petroleum bulk storage requires more than just registration. See the section in this manual on Bulk Storage regulations for further information.

Accepting Used Oil

If your marina's operations include servicing engines, it may be subject to regulation as a *service establishment*. Service establishments are entities that have on-premise oil changing facilities and that sell at least 500 gallons of lubricating oil per year in the course of their repair or oil-changing activities. Service establishments must, by law, accept from the public at no charge up to 5 gallons of used oil per person per day. Any marina subject to service establishment requirements must also post a sign, in full public view, stating "WE ACCEPT USED OIL FOR RECYCLING AT NO CHARGE." The law also prohibits service establishments from charging a separate fee for used oil recycling on their oil change customers.

Did You Know?

- It takes 42 gallons of crude oil to yield 2.5 quarts of lubricating oil.

- When used oil is recycled, it takes about one gallon to yield 2.5 quarts of lubricating oil.
- Used oil from a single oil change can contaminate a million gallon water supply for 10,000 people.
- Used oil is the largest single source of pollution in our nation's waterways.
- Used oil can contain toxic substances, such as arsenic, benzene, cadmium, lead, and zinc.
- There are 1.2 billion gallons of waste oil generated annually in the United States.

Transporting Used Oil

Your marina must contract with a Part 364 permitted waste hauler to pick up your used oil for recycling or disposal, however, your marina can self-transport up to 500 pounds (approximately 55 gallons) of used oil, without a Part 364 permit, but only to:

- A facility that is owned by your company, or,
- A facility permitted by DEC to accept used oil directly from the generators of that oil.

BEST MANAGEMENT PRACTICES

Here are some tips on managing your used oil:

- Store used oil in tanks or closed containers labeled "USED OIL." This is also a requirement under the used oil regulations.
- Do not mix hazardous waste with used oil. This can contaminate your used oil with hazardous waste, and therefore, prohibit you from managing it as used oil.
- Make sure your used oil storage tanks or drums have proper containment in case there is a leak or spill.
- Inspect your used oil storage tanks or drums on a regular basis for leaks or spills. This is a regulatory requirement.
- Use large drum funnels or fill tubes when filling used oil drums.
- If you have to service a boat or other water craft on-site, try to prevent spills. Do all servicing on impervious surface. If spills do occur, clean up oil spills with rags. After wringing out the saturated rag into the used oil drum, have the rags laundered with an industrial or commercial laundry service. See section entitled Shop Towels for requirements.

Used Oil Filters

REGULATORY REQUIREMENTS

Terne plated oil filters are no longer manufactured in the United States for use in private vehicles. Terne which consist of an alloy of lead and tin, is typically a hazardous waste when disposed. However, non-terne plated used oil filters are not considered a hazardous waste if used oil is removed from the filter by one of the following methods:

- Puncturing the filter and hot draining for at least 12 hours at or near engine-operating temperature.
- Hot draining for at least 12 hours at or near engine-operating temperature and then crushing the filter.
- Hot draining at or near engine-operating temperature and dismantling the filter.
- Any other equivalent method that will remove used oil.

Used oil filters that are not drained by one of the above methods are subject to regulation as used oil.

If one of the above methods has been performed, these used oil filters can be disposed of as nonhazardous solid waste, subject to town and county requirements. However, the most environmentally preferred method of disposal is to recycle these filters. Opportunities exist for recycling properly drained filters and the Department encourages the recycling of used oil filters wherever possible. Check with your local scrap metal yard for more recycling information.

BEST MANAGEMENT PRACTICES

- Crush or puncture the dome or anti-drain valve and hot drain the filter.
- Collect oil from filter crushing and manage it the same way as engine used oils.
- Store drained and crushed filters in a leak-proof container until recycled or disposed.
- Recycle drained or crushed filters with your scrap metals.

Used Oil Space Heaters

REGULATORY REQUIREMENTS

Operations can burn their own used oil and used oil from do-it-yourself oil changers in specially designed used oil-fired space heaters as long as the following requirements are met:

- The used oil originates from vehicles, including used oil generated from boats, at your facility or by accepting it from individuals (non-commercial) who generate the used oil by draining the lubricating oil out of their own motorized equipment.
- The heater is designed to have a maximum capacity of no more than 0.5 million BTU per hour (Note: You can use a higher capacity heater, but you will need a permit).
- Exhaust gases from the heater are vented to the outside air.
- The used oil has not been mixed with any hazardous waste.
- You comply with 6 NYCRR Subpart 225-2 (Fuel Composition and Use - Waste Fuel). Also, the tanks and/or containers used to store used oil must comply with the NYSDEC "Used Oil Requirements."

Many maintenance operations purchase used oil-fired space heaters and then find out that they don't generate enough used oil to keep the space heater operating throughout the winter. Although it may seem desirable to receive used oil from other sites that generate used oil, both the used oil and air regulations impose significant restrictions, such as record keeping and analytical testing, on this practice. If you wish to explore the possibility of burning used oil from other than your own or do-it yourself oil changers, please contact the DEC's Technical Determination and Analysis Section of the Division of Solid and Hazardous Materials at (518) 402-8612, or call your DEC's regional office.

Due to the harmful effects of used oil on the environment, do not burn used oil in an unapproved boiler, space heater or furnace.

Some Commonly Asked Questions

Q I just cleaned up an oil spill with absorbents and speedy dry. Can I throw this waste in the dumpster?

A Not without a hazardous waste determination. Used oil that is not destined for recycling or burning for energy recovery must have a hazardous waste determination done before disposing of the waste. Generally speaking, if absorbents or speedy dry have any free liquids they should not go in the dumpster, even if they are not a hazardous waste. Most oil spills can be avoided. Have your employees use care when handling containers that have the potential to spill. Other spilled chemicals may be a hazardous waste as well. If you are in doubt, check with your DEC office.

Q I just purchased a facility but there are no public sewers in my town. There is a floor drain in the middle of my shop, but I am not sure where it empties into. The only water that empties into this drain is from my operations floor area. Are there any special regulations that I have to comply with?

A If your discharge from this floor drain does not end up in a public sewer or some type of holding tank, then there is a good chance you are in violation of the Environmental Conservation Law (ECL) for an illegal discharge to surface or groundwaters. You should determine where the floor drains discharge by using some environmentally safe dye or food coloring. Any discharge of wastewater from an industrial operation into the ground or surface waters of the state is illegal.

Q I am a marina owner and before we paint our boats, the old paint is scraped off and collected in a tarp. Can I discard my paint chips in the dumpster? Would it make it difference if I discard them in a tarp?

A Paint chips can be discarded in the dumpster **only** after you have determined that the paint chips are **not** a hazardous waste. This means that you must make a hazardous waste determination from your knowledge, or by performing a toxicity test on the paint chips (see page 31 of this manual). Under no circumstances can hazardous waste be discarded in a dumpster. Wrapping paint chips in a tarp has no affect on disposal options.

Q I generate a wide variety of wastes at my marina. Are there any hazardous wastes I do not have to count in order to determine my generator status?

A In order to count your waste, you must first determine which wastes are hazardous. Secondly, you must determine if any of your hazardous wastes are exempt from counting. Note: Do not count nonhazardous waste. When determining your generator category, you do not have to count such wastes as universal wastes, spent lead-acid batteries that are reclaimed, used oil managed under 6 NYCRR part 360-14 and 374-2, solvents that are taken

directly from an operating machine and put directly into a still for recycling, spent fluorescent bulbs managed under the universal waste rule, computer monitors or other electronic equipment if sent to an authorized recycler, or other wastes that are specifically exempted from counting.

Q I frequently hire several different contractors to do work at my marina. Most of the time they leave solvents, paints, and other toxic materials at my facility when they complete their work. Who is responsible for these materials?

A Any waste materials that are generated at your marina are essentially your obligation. You are responsible for the safe handling and disposal of these items.

Q I own a good-sized marina with a maintenance shop that performs oil changes on my customer's boats. I usually give my used oil to another marina located in the same town, and it is burned in their space heater. How much oil can I transport at one time to this other marina?

A None, unless he is permitted by DEC to accept used oil. Assuming this other marina does not have a permit, (which is a good assumption), both marinas are in violation of the DEC used oil regulations. You are in violation for illegally transporting to an unauthorized recycler, and he is in violation for accepting used oil without a DEC permit. You *can* transport up to 500 pounds (approximately 1 drum) of used oil at one time to an *authorized* used oil recycling facility.

Resource Guide

The following organizations provide technical assistance; publish information; conduct or speak at workshops and conferences; and provide telephone, written and on-site information to generators on pollution prevention and better management of air, water, solid and hazardous waste issues.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, NY 12233

Division of Environmental Permits
(518) 402-9167
Responsible for outreach and compliance assistance by offering workshops/training,and publications.

Division of Solid & Hazardous Materials
Bureau of Hazardous Waste Management
(518) 402-8633
Responsible for making hazardous waste determinations, reviewing hazardous waste reduction plans, hazardous waste permitting, and used oil.

Waste Transporter Program
(518) 402-8705
Responsible for issuing permits to waste haulers that transport solid and hazardous, industrial/commercial, sewage and septage waste.

Bureau of Waste Reduction & Recycling
(518) 402-8705
Responsible for solid waste recycling and waste reduction issues.

Division of Air Resources
Bureau of Stationary Sources
(518) 402-8403

Responsible for source review, permitting, MACT, NESHAP implementation, and air toxics assessments.

Division of Water
Bureau of Water Permits
(518) 402-8111
Responsible for managing the State Pollutant Discharge Elimination System (SPDES) permits, the water resources programs, and the municipal water supply permits.

Spill Response Hotline
(800) 457-7362
To report releases of petroleum products or hazardous substances to air, land or water. Regulations require reporting within 2 hours if certain conditions are not met. Also, the National Response Center should be notified.

Division of Environmental Remediation
Petroleum and Chemical Bulk Storage
(518) 402-9549
Responsible for the registration of above/underground tanks, conducting workshops and training, and developing publications for the petroleum and chemical bulk storage program.

Bureau of Watershed Management
Nonpoint source management section
(518) 402-8250
Responsible for nonpoint source management, amending water quality standards regulations, provide water quality evaluations for SPDES permits, and develop total maximum daily loads for priority waters.

NYSDEC Regional Offices

REGION 1
Nassau & Suffolk Counties
Building 40 SUNY at Stony Brook
Stony Brook, NY 11790
(631) 444-0375

REGION 2
Bronx, Kings, New York, Queens and Richmond Counties
1 Hunters Point Plaza
47-40 21st Street
Long Island City, NY 11101
(718) 482-4900

REGION 3
Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester Counties
21 South Putt Corners Road
New Paltz, NY 12561-1696
(845) 256-3000

REGION 4
Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie Counties
1150 North Westcott Road
Schenectady, NY 12306-2014
(518) 357-2234

REGION 5
Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington Counties
Route 86
Ray Brook, NY 12977
(518) 897-1200

REGION 6
Herkimer, Jefferson, Lewis, Oneida and St. Lawrence Counties
317 Washington Street
Watertown, NY 13601
(315) 785-2238

REGION 7
Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga and Tompkins Counties
615 Erie Boulevard West
Syracuse, NY 13204-2400
(315) 426-7400

REGION 8
Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne and Yates Counties
6274 East Avon-Lima Road
Avon, NY 14414
(585) 226-2466

REGION 9
Allegany, Cattaraugus, Chautauqua, Erie, Niagara and Wyoming Counties
270 Michigan Avenue
Buffalo, NY 14203-2999
(716) 851-7000

State and Local Assistance

Erie County Office of Pollution Prevention
Department of Environment and Planning
95 Franklin Street, Room 1077
Buffalo, NY 14202-3973
(716) 858-7674
Provides confidential assistance to businesses and the private sector in Erie County.

NYC Department of Environmental Protection, Environmental Economic Development Assistance Unit
59-17 Junction Boulevard
Corona, NY 11368
(718) 595-4359
Provides assistance to small businesses in New York City.

The Center for Business and Industry
SUNY at Fredonia, Lagrasso Hall
Fredonia, NY 14063
(716) 673-3177
Provides assistance for businesses located in Chautauqua, Cattaraugus, and Allegany counties.

SUNY Buffalo
Center for Integrated Waste Management
Jarvis Hall, Room 207
Buffalo, NY 14260-4400
(716) 645-3446
Provides R&D support to industries, businesses, and governmental agencies.

Finger Lakes Water Resources Board
307 Lake Street
Penn Yan, NY 14527
(315) 536-7488
Technical assistance

Broome County Division of Solid Waste Management
Edwin Crawford County Office Building
44 Hawley Street
Binghamton, NY 13901
(607) 778-2250
Provides assistance to residents and businesses in Broome County.

NYS Environmental Facilities Corporation
Small Business Assistance Program
625 Broadway
Albany, NY 12207
(800) 780-7227
(518) 402-7462
Provides confidential technical assistance to small businesses in New York State on issues regarding the Clean Air Act.

Clean Air Act Small Business Ombudsman
Empire State Development
Small Business Division
633 3rd Avenue, 32nd Floor
New York, NY 10017 or
30 South Pearl Street
Albany, NY 12245
(800) STATENY or (800) 782-8369
Provides confidential assistance to small businesses in New York State on issues regarding the Clean Air Act.

Lake George Park Commission
P.O. Box 749
Lake George, NY 12845
(518) 668-9347
Technical assistance

Federal Assistance

Asbestos and Small Business Ombudsman
401 M Street SW
Washington, DC 20460
Phone: (800) 368-5888
Helps citizens, small businesses, and communities with questions on all program aspects with EPA.

RCRA/Superfund/EPCRA Hotline
401 M Street SW
Washington, D.C. 20460
(800) 424-9346
(202) 557-1938
Answer questions on matters related to solid waste, hazardous waste, or underground storage tanks. Also, can be used to order EPA publications.

EPA Region II Office
Compliance Assistance & Program Support
290 Broadway, 21st Floor
New York, NY 10007-1866
(212) 637-3268
Provides compliance and pollution prevention assistance to EPA Region II area businesses.

EPA Region II Office
Division of Enforcement and Compliance Assistance - RCRA Compliance Branch
290 Broadway, 22nd Floor
New York, NY 10007-1866
Phone: (212) 637-4145
In addition to conducting RCRA inspections on small businesses, this office provides technical assistance on RCRA related issues.

EPA Headquarters
Office of Compliance (2224A)
401 M St., SW
Washington, DC 20460
Phone: (202) 564-7076
Fax: (202) 564-0009
Regulatory, technical, compliance and pollution prevention assistance.

U.S. Department of Transportation
Hazardous Materials Information Center
Office of Hazardous Materials Standards
Research & Special Programs Administration
400 7th Street, SW
Washington, DC 20590-0001
Phone: (202) 366-4488
Phone: (202) 366-4000 (Main Number)
Technical assistance on matters related to DOT's hazardous materials transportation regulations.

Pollution Protection Information Clearinghouse (PPIC)
PPIC-EPA
1200 Pennsylvania Avenue NW
Washington, DC 20460
Phone: (202) 566-0799
E-mail: ppic@epamail.epa.gov
Provides a library and an electronic bulletin board dedicated to information on pollution prevention.

National Response Center
(800) 424-8802
In Washington, D.C. (202) 426-2675
To report oil and chemical spills to the Federal Government. This hotline is manned by the U.S. Coast Guard.

New York State Permitted Household Hazardous Waste Facilities

If you are a Conditionally Exempt Small Quantity Generator and located in one of the following counties, you can call the number listed to make arrangements to bring your hazardous waste for disposal. Appointments are usually required. Some counties are opening their facilities to neighboring counties. If your shop is not located in any of these counties, you may want to call the closest household hazardous waste collection facility for more details.

Broome County
Division of Solid Waste Management
P.O. Box 1766, Government Plaza
Binghamton, NY 13902
(607) 778-2250

Oneida-Herkimer Solid Waste Management Authority
311 Turner Street
Utica, NY 13501
(315) 733-1224

Monroe County
444 East Henrietta Road
Rochester, NY 14620
(716) 760-7600 (option 3)

Rockland County
50 Sanitorium Road
P.O. Box 350
Pomona, NY 10970
(845) 364-2086

Tompkins County Solid Waste Management
122 Commercial Avenue
Ithaca, NY 14850
(607) 273-6632
(607) 273-HHWM (4496)

Ulster County Resource Recovery Agency
1266 Ulster Avenue
Kingston, NY 12401
(845) 336-0600

Trade Associations

Empire State Trades Association. Inc.
718 South Shore Road
Edinburg, NY 12134-5929
888-I-BOAT-NYS
E-mail: edcapable@aol.com

New York Sea Grant
62B Makin Hall
SUNY College at Oswego
Oswego, NY 13126-3599
315-312-3042
E-mail: dgw9@cornell.edu

New York Sea Grant
146 Suffolk Hall
SUNY at Stony Brook
Stony Brook, NY 11794-5002

Empire State Marine Trade Association
Albany Communications
518-465-7085
E-mail: esmta@adgcommunications.com

National Marine Manufactures Association
200 East Randolph Drive
Suite 5100
Chicago , IL 60601
312-946-6200
E-mail: webmaster@nmma.org

Resources on the Internet

Organization	Internet Address
New York Marine Trade Association	www.nymta.com
NYS Department of Environmental Conservation (NYSDEC)	www.dec.state.ny.us
NYSDEC-Pollution Prevention Unit	www.dec.state.ny.us/website/ppu
NYS Empire State Development Business Assistance Services	www.empire.state.ny.us
NYS Environmental Facilities Corp. - Clean Vessels Assistance Program	www.nysefc.org/newweb9/cvaphome.htm
NYS Energy Research and Development Authority	www.nyserda.org
U.S. Department of Energy Pollution Prevention Information Clearinghouse	www.epic.er.doe.gov/epic
USEPA-Common Sense Initiative	www.epa.gov/commonsense
USEPA-Design for the Environment	www.earth2.epa.gov/dfore
USEPA-Enviroene	www.es.epa.gov
USEPA- Industry Sector Notebooks	www.epa.gov/oeca/sector
USEPA-Office of Underground Storage Tanks	www.epa.gov/unix0008/water/muni/under.html
USEPA-Small Business Assistance Program	www.epa.gov/sbo
USEPA- Technology Transfer Network	www.epa.gov/ttn
Tellus Institute	www.tellus.org
Waste Reduction Resource Center	www.p2pays.org
NY Marine Trades Association	www.nymta.com
USEPA- Office of Wetlands, Oceans, and Watersheds	www.epa.gov/owow/oceans/

NYS Department of State Coastal Resources	www.dos.state.ny.us/estl/estlwww.html
New York Sea Grant	www.nyseagrant.org
U.S. Fish & Wildlife Service	www.fws.gov
NYSDEC Storm Water Phase II Program	www.dec.state.ny.us/website/dow/phaseII.html

Green Products

The NYSDEC does not endorse any vendors or services mentioned in this section.

Green Products Websites

www.procara.ca

Welcome to Procara, a powerful database designed for procurement professionals, purchasers or individuals seeking to lessen the environmental impacts of their purchasing decisions. The Database is accessible to all users free of charge over the Internet via this Database Search page.

www.greenpurchasing.ca

Welcome to GreenPurchasing.ca. This web site, a service of the Centre for Indigenous Environmental Resources (CIER), is here to provide general information about green purchasing.

www.buygreen.com

Recycling, Energy Efficiency, Water Conservation, Pollution Prevention. These are all objectives of environmentally preferred, environmentally responsible or environmentally sound procurement or purchasing. This home page is dedicated to providing information on "green" products and services, and tips on how you can set up a green procurement program.

www.oecenvironmental.com/index.html

Eliminate Dangerous Chemicals! Reduce Employee Risk! OEC Environmental, Inc. is a leader in the field for supplying SAFER and more ENVIRONMENTALLY friendly cleaners, degreasers, parts washers, lubricants, and many other products for use in industry. OEC has been recognized for its' commitment to providing industry with safer alternatives to the many hazardous and toxic substances typically found in the industrial workplace.

www.biocleannj.com

BIOCLEAN, Ltd. is an authorized distributor of Spillaway bio-remedial products formulated by the EnviroLogic corporation - a world leader in the field of bio-remedial technology. EnviroLogic produces the widest range of products in this field. Bio-remediation will remediate hydrocarbons on any surface: concrete, fiberglass, wood, asphalt, soil, water...any surface!!!

Bioremediation is an amazing technology that eliminates hydrocarbon contamination with a natural process utilizing nature's own micro-organisms to digest and degrade the hydrocarbon,. This process transforms the hydrocarbon into harmless carbon dioxide and water with little or no disruption of surrounding areas. Because no volatile chemicals are used, there is no air pollution and no health or safety risks. BIOCLEAN, Ltd., 628 Wishing Well Road, Wyckoff, NJ 07481, toll free 866-232-3996; phone 732-774-6770; fax 732-774-6699.

www.swmcb.org/publications/index.html

Environmentally Preferable Purchasing Guide (2000). The Environmentally Preferable Purchasing Guide provides government purchasers with information on purchasing environmentally preferable

products. Over thirty types of products are addressed in the Guide. Information about environmental and health issues, cost, availability, performance and specifications for each product is provided. Toll free 800-657-3843.

Products

ALGAE/MILDEW RETARDANT

A fluid applied coating that cleans and removes algae, mildew, mold and spores. When reapplied to surfaces forms a shield to reduce and retard growth of algae and mildew. Section II Ingredients: Non ionic Biodegradable Surfactant Proprietary Ingredients (Non Hazardous) Sodium Hypochlorite. ENVIROSAFE MFG.CORP., 1900 Academy Street N.E., Palm Bay, FL 32905 Phone (321) 733-0703 ? Fax (321) 733-0255; 800-800-5737.

NIGHTSTAR

NO batteries - Shake to recharge; NO bulbs - uses a bright white LED; NO breakable or replaceable parts; Lightweight weighs less than 1 pound. Waterproof - **excellent for use on boats** - has been taken Scuba diving down to 180 feet. Totally sealed - the non-metallic, polycarbonate housing, will not produce sparks that could ignite hazardous materials. J&K Enterprises, P.O. Box 17431, Seattle, WA 98107; US toll free 877.879.1669 phone/fax; Outside the US or in the Seattle area 206.784.0965 phone/fax. www.shakelight.com

SIMPLE GREEN

Non-Hazardous Cleaning Products Safer Alternative To Hazardous Chemicals and solvents. For years, Simple Green has championed the cause of meaningful standards for the testing and labeling of "environmentally safer" products. Because when the focus is shifted from competitive advertising hype and hoopla to meaningful independent research and testing, the benefits of using Simple Green become even more compelling.

PAINT STRIPPER

The **AmeriStrip** ® paint stripper is a biodegradable, water washable non-caustic and methylene chloride free gel that is effective in removing lead-based paints, latex, alkyd, varnish, polyurethane and epoxy resin coating from structural metal, cement, fiberglass, wood, mica, and plaster. In short, if you need to remove almost any kind of paint from almost any type of material, AmeriStrip will do the job. Additional Applications include: marine applications and refurbishing: hull stripping, detail and trim, wood, fiberglass, gelcoat. www.ameristrip.com/benefits.html

ENVIRO-BOND HYDROCARBON POLYMER

Forms a permanent bond with diesel fuel, gasoline, engine oil and many other liquid hydrocarbon products, encapsulates all liquid hydrocarbons. Use on water, in engine room, at fueling platform, on dry land, in soil, or on hard surfaces. Lakefront Enterprises, Inc. - www.enviro-bond.com/ebond403

SHRINK WRAP RECYCLERS

- Buffalo Shrink Wrap, 11342 Main Street, East Amherst, NY 14051, (800) 792-8819.
- Dr. Shrink, 1606 State Street, Manistee, MI 49660-1855, (800) 968-5147.

- Dockside Boat Reconditioning, Inc., Rhode Island, (401) 351-7130 and 800-898-7206 - For $9.95, they will sell you a large plastic bag to put the shrinkwrap in, and cover the cost of having Roadway Package Systems pick it up and take it to Ecologix in Holland, Mich., to be recycled into other products.

DURABOARD (TM)

A virtually indestructible and completely non-toxic construction material that can be use for decking. It's made from discarded automobile tires and contains no harmful chemicals or heavy metals such as copper, chromium and arsenic. Tire Conversion Technologies, Inc., 605 Corporations Park, Scotia, NY 12302; (518) 372-1300; Fax (518) 372-5505; email: tct@duraboard.com

PlasTEAK

Recycled plastic lumber and products. PlasTEAK Inc., 3563 Copley Road, PO Box 4290, Akron, OH 44321; 1-800-320-1841; website: www.plasteak.com.

Best Management Practices

Using Environmentally Friendly Products

- use propylene glycol antifreeze to winterize all systems except "closed," or freshwater cooling systems. It's much less toxic than ethylene glycol antifreeze.
- use water-based, non-VOC cleaners that are less hazardous than solvent-based degreasers. They are less toxic and non-flammable.
- use phosphate free, biodegradable and non-toxic soap when prepping a hull.
- use low-VOC, high solids content and water-based paints and surface preparation products instead of traditional paints and primers.
- use of non-toxic, high bonding, and easily cleaned hull coatings is encouraged.
- use paint strippers which are soy-based or water-based products, which are less hazardous.
- use long-lasting, low-toxicity antifouling paint.
- use dustless or vacuum sanders when sanding, which can collect over 98% of dust generated instead of releasing it into the air.
- use mild, phosphate-free detergent with bronze wool to clean teak instead of caustic or acidic teak cleaners.
- use an oil/water separator to remove oil from bilge water.
- use biodegradable and non-toxic holding tank deodorant.

NON-TOXIC CLEANING ALTERNATIVES

The following provides non-toxic alternatives to typical cleaning products. It should be noted that even non-toxic substances can cause temporary harm to the environment and is recommended they be use sparingly.

All Purpose Cleaner	Mix one cup white vinegar with two gallons water
Air Freshener	Leave out an open box of baking soda
Ammonia-based cleaners	Vinegar, salt, and water
Brass Cleaner	Worcestershire sauce; or paste made with equal amounts of salt, vinegar, and water
Copper Cleaner	Lemon juice and water; or paste of lemon juice, salt, and flour
Chlorine Bleach	Baking soda and water; or borax
Chrome Cleaner/Polish	Apple cider vinegar to clean; baby oil to polish
Disinfectants	One half a cup borax in one gallon of water
Drain Opener	Dissemble and use a plumber's snake; or flush with boiling water mixed with one quarter cup baking soda and one quarter cup vinegar
Fiberglass stain remover	Baking soda paste
Floor Cleaner	One-cup vinegar plus two gallons of water
Paints	Use latex or water-based paints
Paint Remover/Stripper	Use heat gun to peel off paint
Paints Thinners	Use water (effective for water-based paints)
Stainless Steel Cleaner	Baking soda or mineral oil for polishing, vinegar to remove spots
Toilet Bowl Cleaner	Use toilet brush and baking soda
Wood Polish	Olive or almond oil (interior walls only)
Window Cleaner	Mix two tablespoons vinegar in one quart of water or rub glass with newspaper

Source: Buller, Pat (1995) Clean Marina + Clean Boating + Clean Water Partnership. Seattle, WA; and MA Department of Environmental Management, Environmental Hazards Management Institute.

NOTES

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