



FOR MORE INFORMATION

Hazardous Waste Disposal and
Certified Uniform Program Agency (CUPA) Information
California Department of Toxic Substances Control
1 (800) 72TOXIC

Clean Boating Information and Locations of Used Oil
and Hazardous Waste Disposal Facilities
1 (800) CLEANUP

Boating Clean and Green Campaign
and California Clean Boating Network
California Coastal Commission
1 (800) COAST4U

General Boating Information
and Sewage Pump-out Facilities Program
California Department of Boating and Waterways
1 (888) 326-2822

Reporting Spills of Oil or Chemicals
1 (800) OILS911 AND 1 (800) 424-8802

Waste Transportation Regulations
California Department of Transportation
1 (916) 654-2852

Promotes use of Best Management Practices in Hull Cleaning
California Professional Divers Association
1 (619) 222-4147

CLEAN BOATING WEBSITES

National Clean Boating Campaign
www.cleanboating.org

**National Management Measures to Control
Nonpoint Source Pollution from Marinas
and Recreational Boating**
Click on: Marinas
www.epa.gov/owow/nps/marinas.html

**California Coastal Commission
The Boating Clean and Green Campaign
and the CA Clean Boating Network**
www.coastal.ca.gov

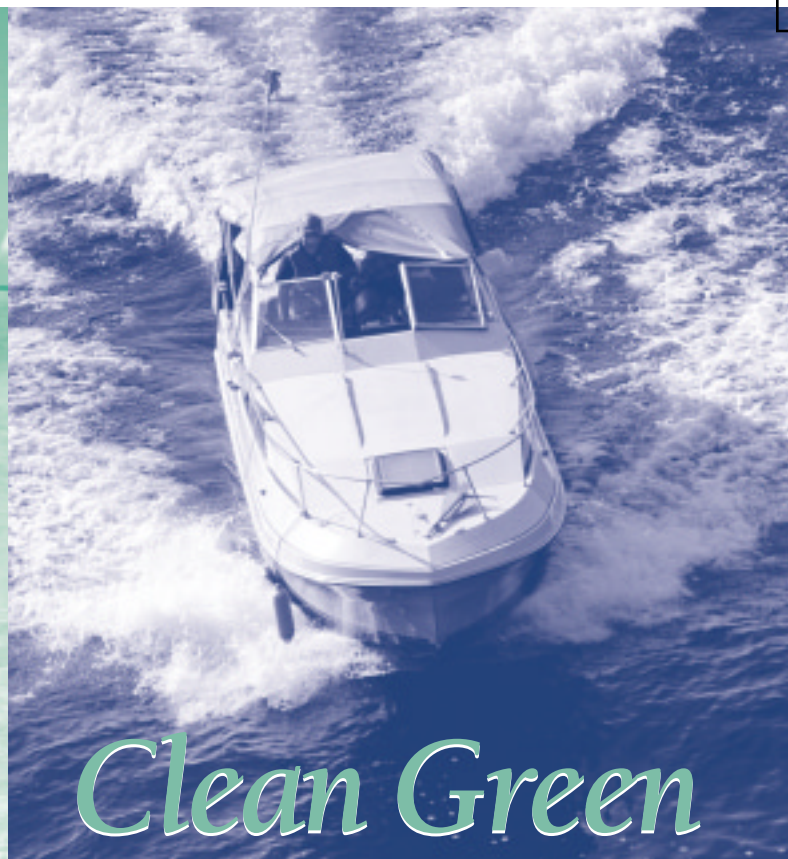
**California Department of Boating and Waterways
Vessel Pumpout Information**
www.dbw.ca.gov/pumpout.htm

**San Diego County
Sea Grant Extension—Clean Boating**
commserv.ucdavis.edu/cesandiego/seagrant/boating.htm

**Santa Monica Bay Restoration Projects
Boats and Marina**
www.smbay.org/human/67.htm



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Clean Green

BOAT MAINTENANCE

*Pollution minimization checklist
for boat maintenance contractors
and the do-it-yourself boater*



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DISCLAIMER: This publication is intended to provide guidance to assist boaters and contractors that perform boat maintenance and repair, or marinas that allow such activities to take place on-site, to minimize the environmental impacts that might occur. It is intended as an advisory document but does not give specific legal advice. Every attempt has been made to assure that the information in this publication is accurate. The California Coastal Commission, the California Integrated Waste Management Board, the San Francisco Bay Conservation and Development Commission, and their consultants, agents, and employees shall not be liable for any injuries or damages whatsoever, including damages based on passive or active negligence, resulting from the use or effect of any product or practice or any information specified in this publication. Reference to any commercial product, process, practice, firm or service does constitute or imply a recommendation or endorsement by any of the persons or organizations that helped to develop this publication.



THE FOLLOWING SOURCES WERE USED IN THE DEVELOPMENT OF THIS PUBLICATION


California Department of Toxic Substances Control, "Hazardous Waste Minimization Checklist and Assessment Manual for Marine Ship and Pleasure Vessel Boat Yards," September 1993. Prepared by the Office of Pollution Prevention and Technology Development.

Marin County Office of Waste Management, "Hazardous Waste Reduction Checklist; A Self Assessment Guide for Boat Yards," December 1995. Prepared by Miriam Gordon.

Orange County Health Care Agency Environmental Health Division, "Hazardous Waste...The Basics," no date, produced by the Hazardous Materials Program Office.

Department of Toxic Substances Control website:
www.dtsc.ca.gov

US Environmental Protection Agency and the National Oceanic and Atmospheric Administration, section 6217(g) Coastal Zone Act Reauthorization and Amendments Guidance, "Chapter 5: Management Measures for Marinas and Recreational Boating," EPA-840-B-92-002, January 1993.



This Checklist assists persons conducting boat maintenance and repair (or those who hire persons to do this work) in implementing “best management practices” for minimizing the generation of hazardous wastes, discharges of pollutants to inland and coastal waters, and air pollution discharges. The checklist also addresses best management practices that include methods for the proper disposal or recycling of hazardous and solid wastes. These best management practices comprise the best techniques known at the time of this publication for achieving the greatest environmental protection while conducting the boat cleaning and maintenance activities.

WHY IMPLEMENT BEST MANAGEMENT PRACTICES FOR BOAT MAINTENANCE AND REPAIR?

- * *With over a million boats in use in California each year, small discharges of oil, sewage, and toxic maintenance products from boats can add up. Water quality agencies are concerned about both the big industrial dischargers and the accumulation of pollutants from smaller more diffuse sources, such as boats, cars, and gardens. Best management practices protect the environmental resources that make boating enjoyable.*
- * *Proper waste handling and hazardous materials management reduces the risk of exposure and long term injury or illness.*
- * *Employing best management practices to reduce spills and discharges also reduces the potential legal liability associated with such an incident. Reducing the likelihood of a spill or discharge also reduces the potential liability of the property owner that allows such work to be conducted on his or her premises.*

HOW TO USE THIS CHECKLIST

This checklist is to be used as a tool for conducting a voluntary self-assessment of boat cleaning and maintenance operations. It contains questions about the various aspects of boat maintenance and repair activities. The questions should be answered by checking a “yes” or “no” response box. After answering the questions in the Checklist, review those for which you responded “no” and evaluate the feasibility of implementing those measures. If you contract with a boat maintenance business to perform the tasks addressed in this publication, find a contractor that employs these best management practices or show this booklet to the contractor you use and ask him or her to employ these techniques to the greatest extent possible.

Boat maintenance and repair includes a wide array of operations, such as topside and bottom maintenance, engine work, painting, sanding, cleaning, and refinishing. The locations where such work is conducted vary including work performed within a marina, outside a marina, directly in the water, and shore-side. Because of the wide range of activities and the varied locations of such activities, this checklist does not address all of the practices that might pollute. However, this checklist provides some guidance to help boaters or their contractors employ pollution prevention and minimization techniques for most typical boat maintenance and repair operations.

BOAT CLEANING AND MAINTENANCE

Make sure it is legal and safe to do the repairs and maintenance planned! Find out if permits are required or if in-water repairs are prohibited.

The most important thing to keep in mind is that the best way to protect the water is to perform as little in-water maintenance that can result in discharges as possible.

- * Do you perform in-water top-side cleaning and maintenance such that no debris falls into the water?

YES NO NA

In water cleaning and maintenance activities should be limited to minor touch-ups and maintenance. Larger jobs should be conducted shore-side or in a boat yard with waste collection and treatment systems. In the slip, tarps can be suspended between the boat bottom and the dock to catch debris and spills.

- * Do you perform shore-side boat cleaning and maintenance in a manner that minimizes discharges of products and debris to storm water and to the air?

YES NO NA

Lay tarps under and around your work area to catch spills and loose particles. Use a vacuum to remove debris.

- * When conducting in-water hull or bottom cleaning, do you minimize the removal of paint from the boat bottom?

YES NO NA

Refrain from cleaning vessels with soft sloughing or abrasive bottom paints which are designed to slough off during cleaning. Always use the least abrasive cleaning method possible.

- * When conducting in-water hull or bottom cleaning, do you bring old zinc anodes to the shore for recycling?

YES NO NA

Contact your local scrap metal recyclers to recycle zincs. You may get paid for them.

- * Do you limit sanding residue discharges?

YES NO NA

In-water top-side sanding should be limited to touch up jobs. Use a vacuum sander. Conduct wet sanding over a lawn or porous surface rather than pavement where the debris will run into storm drains and nearby waterways

- * Do you contain airborne paint emissions from paint spray operations?

YES NO NA

Major paint jobs should be performed shore-side using High Volume Low Pressure (HVLP) or High Efficiency Low Pressure (HELP) paint sprayers. Whenever possible, use a spray booth. Otherwise, tarps, drop cloths, and protective drapes should be used to limit emissions. Do not spray paint in windy conditions.

- * Is fiberglass work conducted in specially designated areas, using tarps, drop cloths and protective drapes to prevent unintentional contamination of shore-side road surfaces and receiving waters and to control fugitive dust emissions?

YES NO NA

Remember to wear protective clothing when performing this type of repair or maintenance.

- * When cleaning the top-side, do you use the least amount of cleaning product necessary to accomplish the task?

YES NO NA

The pollutants in these products (often phosphates, ammonia, sodium hypochlorite, chlorinated solvents, petroleum distillates, or lye) can make their way into the surrounding waters either through direct discharge or possibly in storm water. Use more elbow grease and less product.

- * If oily water is pumped out of the bilge of a boat, is the oil reclaimed for recycling?

YES NO NA

When the bilge contains oily water, find a bilge pump-out station or service to process the oily water and reclaim the oil for recycling.

- * Have you taken measures to reduce spillage of solvents?

YES NO NA

If you work with large quantities of solvents, you should use or have access to a solvent sink which minimizes the dripping of solvents that can contaminate storm water and nearby receiving waters.

- * During oil changes, have you taken measures to reduce the discharge of oil from the automatic bilge pump?

YES NO NA

Don't drain oil to the bilge. Use drip pans and oil-only absorbent pads to contain oil drips and spills. Use a closed system to change the oil, such as, a do-it-yourself oil change pump that drains to a container that can be closed for transfer. Otherwise, use an outside oil change service that removes oil without spills.



Save large cleaning and maintenance jobs for a boat yard with waste collection and treatment systems.

II

STORING HAZARDOUS MATERIALS AND WASTES

The following is general guidance for small businesses involved in the handling and transportation of hazardous materials and hazardous wastes. Specific regulations apply to those who generate greater than certain quantities of specified wastes. To find out whether these regulations apply to you, contact your local Certified Unified Program Agency (CUPA) – check the “Who to Call” section at the back of this publication. If you are a do-it-yourself boater, the following section provides useful tips for the handling of hazardous materials and wastes.

- * If you operate a boat maintenance business, have you contacted your local CUPA to determine whether you are a hazardous waste generator that requires a generator ID number?

YES NO NA

This determination will be based on the quantity and type of hazardous wastes that you generated each month.

- * Do you store cleaning and repair products in a manner that prevents leaks and contamination of products, in leak-proof containers with tight-fitting lids?

YES NO NA

Coverage of materials is important because rainwater can contaminate products and exposure to sunlight can damage products or increase pressure inside containers. Storage areas should provide containment in the event of a spill or leak. Don't fill closed containers to the top—leave room for vapor expansion.

- * Do you make sure that all containers are in good condition and securely closed?

YES NO NA

Containers must be maintained in good condition with tight fitting lids. Inspect containers frequently. They should be made or lined with materials which are compatible with the waste or materials stored inside. Check with the Department of Toxic Substances Control or your local CUPA for more information. See “Who to Call” on the back.

- * Do you set up cleaning and repair products for use in a manner that is least likely to result in leaks and spills and to allow easy containment of spills?

YES NO NA

Use containment pallets, tarps, and absorbent materials.

- * Do you properly label hazardous wastes for storage?

YES NO NA

Label containers used for hazardous waste storage with the words "Hazardous Waste" and identify the contents of the container, plus the hazardous properties of the waste (e.g. flammable, toxic, reactive, corrosive), its physical state, and initial starting date of waste accumulation. Label used oil and contaminated used oil separately so the non-contaminated oil can be recycled.

- * Do you separate incompatible wastes?

YES NO NA

Maintain distance between different types of materials/chemicals to prevent cross-contamination and reactions. In fixed storage areas, containers of incompatible wastes must be separated by means of a dike, berm, wall or similar device.

- * If you are a business with a waste generator ID number, do you store hazardous wastes within acceptable time frames?

YES NO NA

If you are a conditionally exempt small quantity generator (CESQG) i.e. a business that generates less than or equal to 220 pounds or approximately 27 gallons of hazardous waste per month, the hazardous waste must be transported offsite within ninety (90) calendar days once 220 pounds or 27 gallons of hazardous waste have accumulated. If you are a small quantity generator (SQG), you generate more than 220 pounds or 27 gallons but less than 2,200 pounds or 275 gallons of hazardous waste per month and these wastes may be stored on-site for up to 180 days.



PREVENTION AND RESPONSE TO SPILLS

If you cause a chemical or oil spill, you are required to report it to the spill reporting telephone numbers provided on the back of this publication. It is illegal to spill oil and toxic substances into local waterways, and also illegal to use detergents to disperse an oily sheen on the water. Use proper prevention and response techniques to avoid fines, penalties, and harm to the environment.

- * Do you prevent spills and leaks of oil or fuel by conducting preventive engine maintenance?

YES NO NA

Check lines, hoses, gaskets and other areas for deterioration and leaks. Replace all deteriorating parts with properly sized replacements.

- * Do you keep an oil absorbent secured in the bilge or under the engine and places where oil leaks?

YES NO NA

Oil-soaking absorbents can be used in the bilge or engine compartment to prevent discharges of oil by the automatic bilge pump. Make sure absorbents are secured to avoid clogging the bilge pump or its sensor.

- * Do you take precautions to prevent spills during the transfer of hazardous materials or wastes?

YES NO NA

Use spouts, funnels, drip pans and other simple secondary containment and spill-saving devices to prevent spills.

- * Do you keep oil absorbent materials close to your work area in order to respond to spills of oil and fuel? What about absorbents for other types of spills?

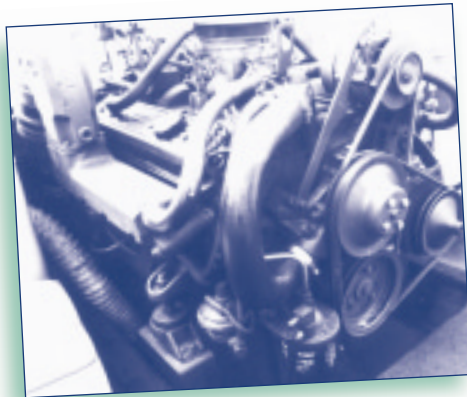
YES NO NA

Keep absorbents and other spill cleaning materials on-hand to respond to a spill of petroleum or toxic chemicals.

- * Do you have the local CUPA, fire department, and police station direct telephone numbers and the oil spill reporting phone numbers?

YES NO NA

These numbers should be kept nearby. See the "Who to Call" section at the back for oil and chemical spill reporting numbers.



Preventive engine maintenance is the best way to minimize leaks of oil and fuel that end up in the bilge and get discharged by the automatic bilge pump.

IV. HAZARDOUS WASTE TRANSPORTATION, DISPOSAL AND RECYCLING

It is illegal to throw hazardous wastes in the trash! For the location of local hazardous waste disposal facilities, call 1(800)CLEANUP.

- * Do you transport cleaning and repair products in a manner that prevents accidental spills and discharges?

YES NO NA

Use tightly sealed containers and secure them to prevent tipping or spills.

- * Do you transport hazardous wastes in compliance with the California Department of Transportation statutes and regulations?

YES NO NA

Check the "Who to Call" section on the back to contact the Department of Transportation.

- * Do you dispose of all hazardous wastes properly?

YES NO NA

Hazardous wastes should be disposed of or recycled either at a business waste collection center, a household hazardous waste collection center, or at a marina with proper collection facilities. Check the "Who to Call" section to find local facilities.

- * Do you segregate hazardous wastes to promote maximum recycling? For example, is spent anti-freeze stored separately and recycled? Are used oil and oil filters segregated and recycled? Are solvents segregated and recycled?

YES NO NA

Waste segregation prevents the contamination of recyclable hazardous wastes and decreases the amount of hazardous wastes that must be recycled or disposed.

- * Do you properly dispose of rags and other absorbents that are saturated with oil or other hazardous wastes?

YES NO NA

Oily rags and saturated absorbents should be disposed of as hazardous waste. Store them carefully, away from sources of ignition.



Small quantities of oil and fuel are toxic to marine life. One pint of oil can cover an acre of the water's surface.

Oil coats birds' feathers and mammals' fur, destroying their natural insulation and causing them to die of hypothermia. Birds can also die from ingesting oil when they preen (clean) it from their feathers.

Spraying detergents to get rid of an oily sheen increases the harm to marine life.

V PRODUCT SUBSTITUTION AND WASTE MINIMIZATION

By using less toxic products, you reduce the environmental impact of your operations and the quantity of hazardous wastes generated. Manufacturers are developing products that are less harmful to the environment.

Please note that the following section does not constitute an endorsement by this agency of any particular products or the claims made by manufacturers of these products. Some types of products are mentioned simply as examples. No testing of these products has been conducted by the authors or funders of this publication and no warranties are made as to the effectiveness of these products or their impacts on the environment.

- * Have you considered using less toxic products in order to reduce potential liability and increase your own safety and protect your health?

YES NO NA

You can be liable for discharges of pollutants to state waters if you cause the spill or it occurs on your property.

- * Where feasible, have you tried using water-based paints, solvents, and adhesives?

YES NO NA

These products reduce Volatile Organic Chemical (VOC) emissions. VOCs are directly linked to increased levels of air pollution.

- * Do you minimize the quantity of solvent used to clean parts and equipment?

YES NO NA

Make sure that solvent cleaners remain covered when not in use to reduce vapor loss. Sometimes thinners and solvents can be collected together, allowing sludge to settle to the bottom. Reusable solvent can be drained from the surface and re-used for equipment cleaning.

- * Have you taken steps to reduce the amount of solvent waste generated?

YES NO NA

If you generate several small volume solvent wastes, it may be feasible to standardize the solvent used for equipment cleaning so that spent solvents can be combined for distillation and clean solvent reclaimed for reuse. Otherwise, you can use a solvent reclamation service that recycles or reclaims solvents. Reclamation services may be cheaper than disposal.

- * Do you use less-toxic head cleaners and deodorizers?

YES NO NA

To clean and deodorize heads and holding tanks, use bacterial or enzyme-based digesters rather than traditional products that contain chlorine, formaldehyde, or other toxic substances. For general purpose deodorizers in heads and bilges, look for active-oxygen-based sprays rather than chemical products, which often contain chlorine.

- * Are you using oil absorbent pads for cleaning leaks and spills in place of granulated material?

YES NO NA

Increasing numbers of disposal facilities are available for spent oil absorbent pads. Check our clean boating website for a list of locations at California marinas (www.coastal.ca.gov) or use your local hazardous waste disposal facility. Some of these locations recycle spent absorbents.

- * Do you take measures to reduce the generation of wastes caused by materials exceeding their shelf life and becoming obsolete?

YES NO NA

To reduce the amount of product that becomes waste, conduct periodic inspections of products in storage to determine whether the products are near the end of their shelf life. Use up older products before buying new. Give away products you are unlikely to use before the expiration date.

SAFETY CONSIDERATIONS: Before handling flammable and other hazardous materials, always keep safety uppermost in mind. Check with your local fire department for information about handling oil and other flammable materials. Always keep bilges well-ventilated and turn off all motors before conducting repairs. Consult Coast Guard and state regulations for boat safety and operation. Keep fire extinguishers in good working condition and immediately available.

HAZARDOUS WASTE REGULATION

What is considered a “hazardous waste” in California? “Hazardous Waste” is defined in section 66261.3 of Title 22

of the California Code of Regulations. It is any discarded material that exhibits any of the following characteristics: ignitability (section 66261.21), corrosivity (section 66261.22), reactivity (section 66261.23), and toxicity (section 66262.24), unless otherwise specified. “Listed Wastes” are found in sections 66261.30 through 66261.35. Wastes appear in the lists because of their known hazardous natures or because the processes that generate them are known to produce hazardous wastes (which are often complex mixtures).

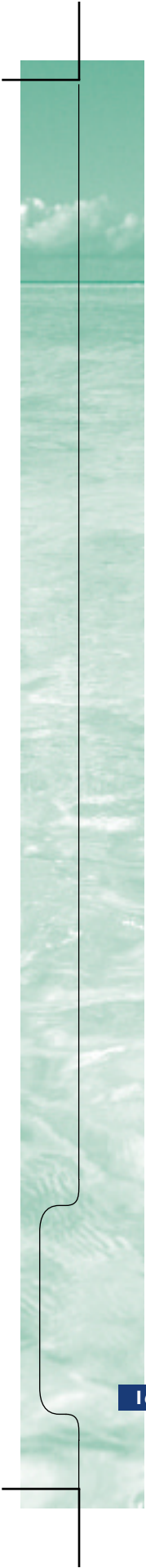
Typical hazardous wastes generated by boat cleaning and maintenance activities include: used crankcase motor oils, other petroleum-based oils (lubricating oils, gearbox and differential oils, hydraulic oils, transmission fluids, and compressor oils), used oil filters, antifreeze, lead acid batteries, paints, solvents, teak cleaners, stains, and varnish.

If you use, generate, transport or offer for transport, treat, store, or dispose of hazardous waste in your business, you may need a generator identification number from your local Certified Unified Program Agency (CUPA). CUPAs are local permitting agencies for businesses that handle hazardous wastes and materials.

To learn more about hazardous waste generation and the regulation of hazardous wastes in California, contact your local CUPA or the California Department of Toxic Substances Control. Refer to the “Who to Call” Section at the back of this checklist.

ARE THERE WASTES THAT NEED TO BE HANDLED DIFFERENTLY?

Some common industrial wastes have special regulations that require them to be stored or managed differently than other hazardous or non-hazardous wastes. Title 22 of the California Code of Regulations addresses the following wastes commonly encountered in boat cleaning and maintenance:



AEROSOL CONTAINERS. Aerosol containers that are empty may be discarded as municipal trash. Partially full aerosol containers that contained a hazardous waste or material must be disposed of as hazardous waste.

EMPTY CONTAINERS. A container is “empty” only if the contents are no longer pourable or if the contents have been scraped out as much as reasonably possible. Empty containers of five gallons or less may be discarded to the municipal trash. Empty containers of greater than five gallons in size that once contained a hazardous waste or material must be sent out on a bill of lading to a drum recycler or reconditioner for scrap value, or sent back to the manufacturer for refilling within one year of being empty, or disposed of as hazardous waste.

USED OIL FILTERS. Used motor oil filters are considered hazardous waste. These filters can be handled as non-hazardous, as long as the filters are drained of any used oil and sent for scrap metal recycling.

OTHER FILTERS. Used filters, such as solvent bath filters, fuel filters, radiator coolant recycler filters, etc. are considered hazardous wastes, unless laboratory testing proves them to be non-hazardous. These filters cannot be commingled, stored, or disposed with used oil filters.

LEAD ACID BATTERIES. Lead acid batteries contain acid, lead, and other heavy metals. Used lead acid batteries do not have to be handled as hazardous waste if: 1) the batteries are intact; 2) the batteries are going to be recycled; 3) no electrolytes or acid are removed from the batteries, and 4) batteries are stored to prevent the release of lead or acid into the environment.

USED SHOP RAGS AND OIL ABSORBENTS. Rags and oil absorbents can be used to clean up small spills. Those saturated with oil must be disposed of as hazardous waste in a container designated solely for absorbents and rags.