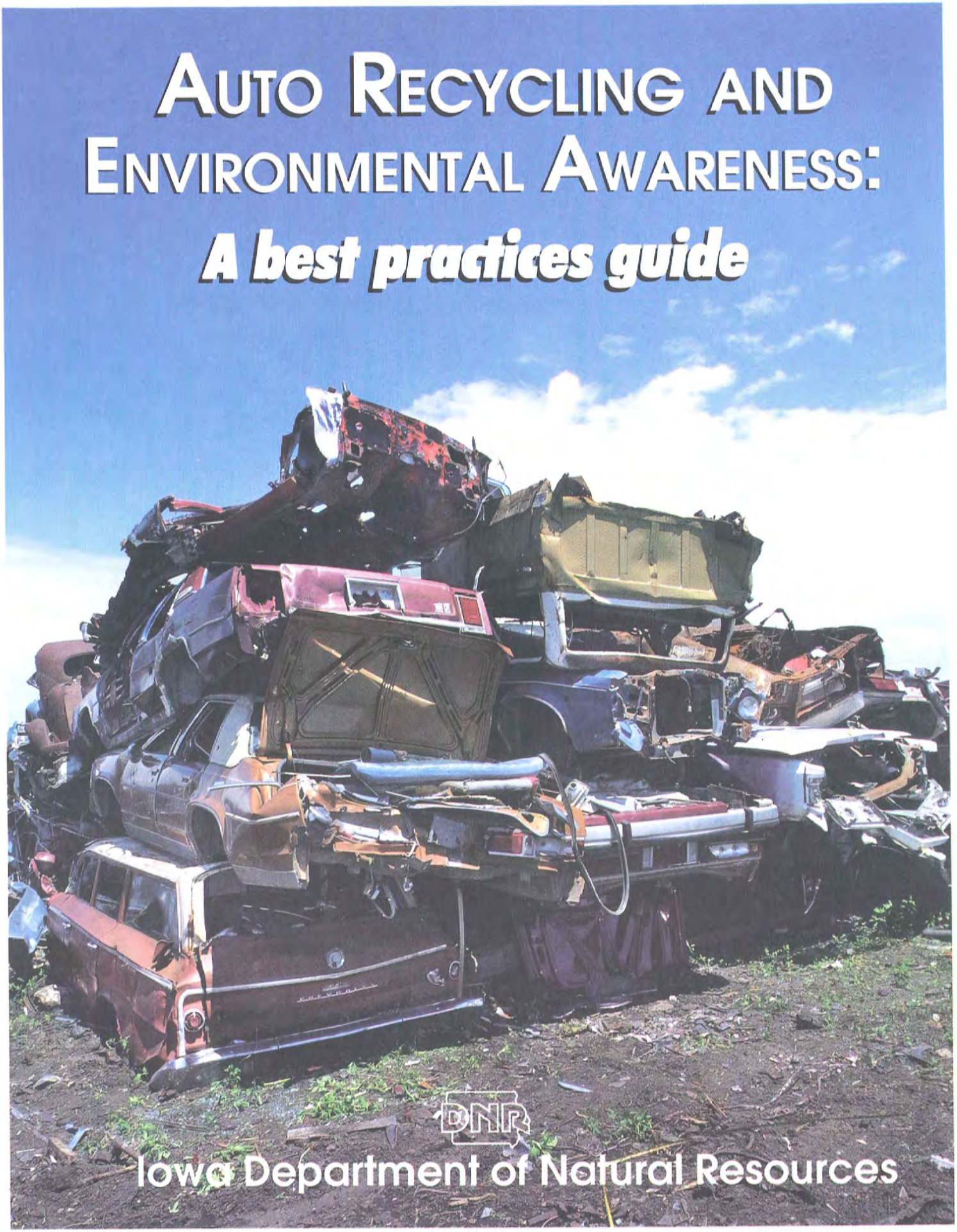
Auto Recycling and Environmental Awareness:

A best practices guide



Iowa Department of Natural Resources

A Message from the Director

JEFF VONK
DIRECTOR, IOWA DNR

Motor vehicle recycling facilities play a valuable role in society by recovering and reselling usable parts from worn-out or damaged vehicles, as well as recycling materials that cannot be used in their present form. In the process, however, auto recyclers and salvage yards also generate wastes that are potentially harmful to humans and the environment if released to the soil, air, surface water and groundwater.

The Iowa Department of Natural Resources has created this guide to help auto recyclers, salvage yard owners, operators and employees manage and dispose of wastes in an environmentally safe way. Managing wastes properly is not only environmentally responsible, it is just plain good business. Spills and poorly managed wastes, such as piles of waste tires or leaking batteries, can create environmental damage that is expensive to clean up. Include the employee hours needed to clean up spills, and it is clear that responsible waste management benefits everyone.

This manual offers a wide range of waste management techniques. Time, space and economic factors will determine which methods you choose. Also, it is important to incorporate local, city, and county regulations in your waste management plan.

Thank you for being good stewards of Iowa's environment.

Auto Recycling and Environmental Awareness:

A best practices guide

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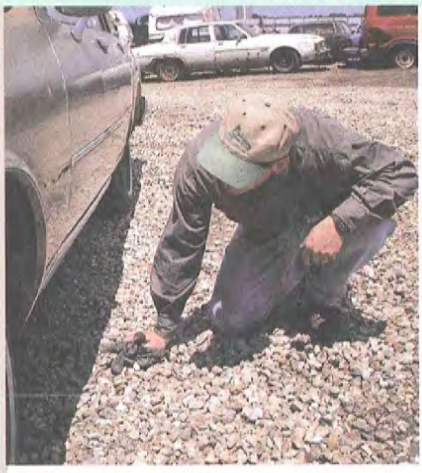
CHAPTER

1

General Operating Procedures

Inspecting Incoming Vehicles

Proper vehicle inspection is important, particularly when a vehicle is going to be stored rather than scrapped or crushed. The following checklist outlines vehicle inspection steps that will help reduce environmental pollution by preventing spills.



ENVIRONMENTAL
HAZARD

Do not store undrained or leaking vehicles on bare ground without drip pans. The best method for storing undrained vehicles is on a concrete surface with spill controls, including drip pans and absorbents.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Inspect incoming vehicles for leaks.** Engines, radiators transmissions, fuel tanks and damaged areas should be checked.

☑ **Place drip pans under leaks to collect fluids** for proper recycling or disposal until vehicles can be drained.

☑ **Remove the fuel, fuel tank and battery** as soon as possible after vehicles enter the facility.

☑ **Remover refrigerant (CFCs)** as soon as possible after vehicles enter the facility.

☑ **Drain all fluids** from vehicles before crushing.

Draining, Dismantling and Storage

Waste fluid spills are most likely to occur while dismantling, draining or storing vehicles, parts and cores. Proper dismantling, draining and storage procedures help prevent pollution, such as fluids seeping into ground water or refrigerant escaping into the air.

DRAINING FLUIDS

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Inspect engines before draining** to determine condition and usability of engine or parts.

☑ **Drain vehicles during incoming inspection**, if possible. All vehicle parts and cores must be drained before storing and crushing. The salvage facility must decide when to drain fluids, depending upon the risk of leaks and whether specific parts can be resold. Drain all of the following:

- engines
- transmissions
- torque converters
- power steering pumps and lines
- axles and differential housings
- radiators
- heater cores
- brake lines and master cylinders
- fuel tanks
- window washing fluid tanks
- air conditioning units

Do not dismantle or drain vehicles on unprotected ground.

Do not pour waste fluids into floor or storm and sanitary sewer drains.

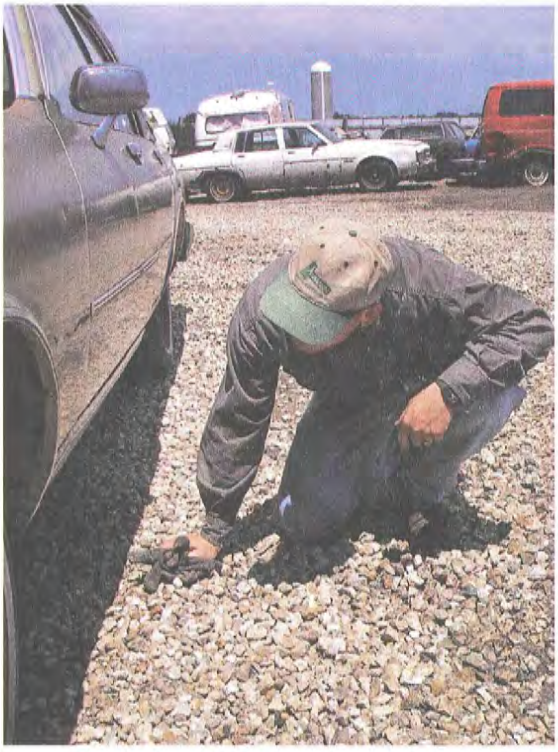
☑ **Designate one area for dismantling and draining vehicles, parts and cores.** The area selected should allow spills to be easily contained; such as inside a building or on a curbed, hard, concrete surface with proper spill controls, including drip pans and absorbents.

☑ **Keep drip pans under vehicles while removing hoses, fittings, filters and other parts that contain fluids.** Replace drain plugs when done draining.

☑ **Plug all hoses after draining.** Store-bought plugs, small balls, and golf tees work well to plug rubber hoses. Crimp metal lines.

☑ **Pour collected waste fluids into properly labeled containers** immediately after draining.

☑ **Store all parts and cores in a leakproof container** or on a covered and curbed, impermeable, concrete surface with spill controls, including drip pans and absorbents. Parts and cores need to be stored in closed bins or in a covered area to keep rainwater from collecting and prevent polluted runoff from contaminating rain or melting snow.



ENGINES

All engines should be evaluated during incoming inspection to determine their value. It is recommended that salvage facilities classify and handle used engines in one of the three following categories:

1) Reusable engines that are left in vehicles to be sold "as is"

2) Reusable engines to be removed from vehicles and sold as parts

3) Scrap core engines

Do not punch holes in the oil pan to drain engines. Remove the drain plug and replace the plug after draining to prevent leaks.

Do not drain vehicles or engines on unprotected ground.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Drain used engine oil from all engines.** Oil left in reusable engines does not protect parts. Engine oil can be added if the engine needs to be started. It should be drained to prevent oil from leaking out of vents and plugs during storage.

☑ **Drain engines on a hoist or draining stand.** Place drip pans below vehicles to collect waste fluids or use a funnel to drain fluids directly into storage containers. If draining is done outdoors, make sure the area is covered to prevent rainwater from collecting and that the stand is located on a curbed, impermeable, concrete surface with spill controls, including drip pans and absorbents.

☑ **Remove engines through the hood, or use a large forklift or hoist to lift vehicles for engine removal.** Do not tip vehicles on their sides to remove engines unless all fluids have been drained from the vehicles.

Do not tip undrained vehicles on their sides to remove engines. This may cause gas, transmission fluid or other fluids to spill on the ground.

Do not store oily engines uncovered outdoors or without secondary containment.

Do not pile scrap engines or crush vehicles until fluids have been removed.

☑ **Store engines in an area where spills and polluted runoff can be easily controlled**, such as in a covered container or on a covered and curbed, impermeable, concrete surface with spill controls, including drip pans and absorbents.

TRANSMISSION & AXLES

Transmission fluid is difficult to remove and spills are a very common mistake. Up to eight quarts of fluid can be drained from a car's transmission. Axles and differentials can also contain large amounts of gear oil and fluids. Extra care should be taken to properly drain transmissions and axles so that spills do not occur.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Drain all transmissions** before crushing vehicles.

☑ **Drain transmissions on a hoist or work rack.**

☑ **Drain transmissions by either removing the oil pan or by drilling a hole in the pan.** Replace the pan after draining and seal holes. Self-drilling or self-tapping screws work well for drilling drain holes because they can be used to easily re-plug holes. Sealing holes stops leaking of fluids that may be left after draining.

☑ **Drain transmissions on a draining rack, over a drip pan, or use a funnel** to drain fluids directly into a storage container.

☑ **Drain transmissions on a curbed, impermeable concrete surface with spill controls, including drip pans and absorbents.** If the draining area is outdoors, it should be covered to prevent rainwater from collecting and to prevent contaminated runoff from polluting rain or melting snow.

ENVIRONMENTAL
HAZARD

Do not store transmissions without proper spill protection, including a cover, secondary containment, drip pans and absorbents.

Do not crush vehicles or transmissions that contain fluids.

Do not drain transmissions on bare ground.

Do not tip undrained vehicles on their side to remove transmissions.

Do not stack vehicles or transmissions until all fluids are removed.

☑ **Leave dipsticks in transmissions and tighten all bolts on the oil pan** to prevent leaking of any fluid left in the transmission.

☑ **Leave drive-shaft yokes on transmissions to prevent leaks.**

☑ **Drain differential fluid on all rear-wheel drive vehicles.** There is approximately one to two quarts of differential fluid that should be stored and recycled with used oils.

☑ **Remove and drain torque converters when removing transmissions.** Torque converters are difficult to drain because of their round shape. They should be tipped at different angles to remove as much fluid as possible. Plug torque converter to prevent leaks.

☑ **Seal all fluid lines after draining so they do not leak.** Metal lines can be crimped or bent; rubber hoses can be plugged with clamps, balls or golf tees.

☑ **Store transmissions on a curbed, impermeable, concrete surface with spill controls, including drip pans and absorbents.** Transmissions stored outdoors should be in a leakproof container and covered to prevent contaminated runoff from polluting rain and melting snow.

☑ **Store transmission fluid with other used oils.**

RADIATORS & HEATER CORES

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Drain antifreeze from radiators and heater cores** as soon as possible after vehicles enter the facility.

☑ **Follow these steps when draining radiators and heater cores:**

1) Cut hoses with a side cutter;
2) Plug the ends of all hoses;
3) Drain antifreeze and store in a labeled drum for recycling or disposal; and
4) Power flush radiators and heater cores. Follow all storm water management regulations.

☑ **Place drip pans under radiators and heater cores while draining.**

☑ **Remove drained radiators and heater cores on a curbed, impermeable, concrete surface with spill controls**, including drip pans and absorbents. If draining outdoors, make sure the draining area is covered to keep rainwater from collecting and prevent contaminated runoff from rain and melting snow.

Do not store undrained radiators and heater cores uncovered and without proper spill protection, including drip pans and absorbents.

Do not drain radiators and heater cores into floor drains or sanitary or storm sewer systems.

Do not stack undrained radiators and heater cores.

Do not leave radiators and heater cores in vehicles to be crushed. All lead parts must be removed from vehicles before crushing.

☑ **Remove iron parts from radiators and heater cores for separate recycling.** Cutting torches should be used in a well-ventilated area. Wear respiratory protection, such as a filtering mask, to reduce the risk of breathing airborne lead that may be released by heating lead straps on radiators. Also, all lead parts and components must be removed from vehicles before crushing.

☑ **Store radiators and heater cores in a leakproof container** or on a covered and curbed, impermeable, concrete surface with spill controls, including drip pans and absorbents.

☑ **Recycle used radiators and heater cores regularly.**

Improperly stored radiators like these can contaminate soil and water with antifreeze, lead and other hazardous materials.

FUEL TANKS

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Drain and remove fuel tanks as soon as possible.** Use one of the following draining methods:

1) Remove tank from vehicle and pour or pump fuel into storage tank; only use an air-driven pump to remove and drain fuel into a storage container; or

2) Remove plug where sensor and gas line enter the tank and drain the fuel into a storage container.

☑ **Store used tanks in piles on a covered and curbed, impermeable, concrete surface with spill controls**, including drip pans and absorbents.

☑ **Store waste fuel and reusable fuel in closed storage containers that are clearly labeled.**

☑ **Do not mix waste fuel or reusable fuel with other waste fluids.**

Do not store undrained fuel tanks because they are a fire hazard.

Do not use electric pumps to remove fuel. Sparks may ignite fuel vapors.

Do not crush vehicles unless the fuel tank has been removed. The steel tank can contain lead-a hazardous waste.

REFRIGERANT (CFCs)

Refrigerant (Chlorofluorocarbons or CFCs) refers to Freon used in air conditioning units, which is a pollution concern because it contributes to ozone depletion and is easily dispersed into the air during air conditioning unit servicing or dismantling. Motor vehicle salvage facilities are required by the EPA to recover all refrigerants from vehicles that enter their facilities. A new refrigerant, R-134a, that does not deplete the ozone layer, is now being used in new automobile air conditioners. Although there are no current federal regulations requiring salvage facilities to recapture R-134a, approved recycling equipment made specifically for R-134a should be used when handling this refrigerant. Refrigerant must first be removed from air conditioning units, stored and then processed, usually by distillation, until it meets resale specifications.

Do not do anything that will release refrigerant into the air, such as cutting lines, disconnecting hoses or flattening vehicles before removing refrigerant.

Do not overfill storage tanks.

Do not release refrigerant from storage tanks.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Check air conditioning units and remove refrigerant** from all vehicles that enter the facility, using approved recovery equipment. Because a pressure gauge allows refrigerant to escape into the environment, assume that all units contain refrigerant and then remove it using approved recovery equipment.

☑ **Verify that all vehicles entering the facility without refrigerant have had the refrigerant removed using approved recovery methods.** Verification consists of a signed statement by the person or organization from which the vehicles were received. This statement should include the name and address of the person who removed the refrigerant and the date.

☑ **If refrigerant is not present because the air conditioning unit was damaged or because of a vehicle's age or lack of use, verification must include a statement to that effect.** Keep records for three years.

☑ **Seal all air conditioning unit openings and hoses after recovering oil** to prevent any leftover oil from leaking out of the unit and contaminating components that may be reused.

☑ **Store refrigerant in a tank that meets Federal Department of Transportation (DOT) or Underwriters Laboratories (UL) standards.**

☑ **Sell refrigerant only to certified reclaiming facilities or CFC collectors who will reclaim it to its original purity specifications.**

☑ **Perform air conditioning repair work only if it is done by a certified motor vehicle air conditioning technician**, and reuse refrigerant only in vehicle air conditioning units owned by your facility.

☑ **Supply documentation to scrap metal facilities** that crush hulks, stating that the refrigerant was removed from vehicles using approved methods.

Storage tanks should be filled to a maximum of 60 percent of the Gross Weight Rating listed on the tank, or 80 percent of the tank's rated volume at 70 degrees Fahrenheit.

Do not sell recovered refrigerant to body shops or service stations for recycling without first having the refrigerant reclaimed.

Do not use automobile air conditioning recovery equipment for recovering refrigerant from appliances. Appliances require a different type of recovery system.

AIR BAGS

In the past few years, air bag units have presented a new problem for salvage facilities. There are no regulations governing the final disposal of air bag units, yet they are becoming more common in salvaged vehicles. The units, whether made of plastic, vinyl or metal, contain a propellant called sodium azide, a hazardous substance, which is dangerous if inhaled and may burn exposed skin. Undeployed air bags can also damage vehicle shredders by releasing sodium azide into the processing equipment and ultimately into the auto "fluff". Contaminated fluff requires costly handling and disposal methods.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Leave deployed (used) air-bag units in vehicles.** (Air bags that have been deployed do not present a human or an environmental risk.)

☑ **Remove or deploy all undeployed (unused) air-bag units** when vehicles enter the facility.

☑ **Deploy air bags using the following method:**

1) Disconnect cables from the vehicle's battery.

2) Wait 20 minutes for the unit's internal battery to discharge completely.

3) Deploy air bags remotely using the manufacturer's recommended method.

4) Store undeployed air bag units indoors, protected from the weather until they can be resold.

Vehicle Crushing

Salvage facilities use a variety of methods to crush vehicles. Regardless of the method, facilities need to make sure that precautions are taken to prevent waste-fluid spills during crushing. The following section outlines vehicle crushing steps that should be used with all crushing methods to help reduce environmental pollution and prevent spills.

This site has been polluted by the release of contaminants onto open ground.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Drain all waste fluids before crushing to prevent spills.**

☑ **Crush vehicles on an impermeable concrete surface with spill controls**, including drip pans and absorbents. Any leftover wastes collected from the crusher or concrete pad during crushing should be drained into a sump or oil/water separator and tested to determine if the residue contains hazardous waste. Expensive testing can be avoided by making sure all cars are drained before crushing.

☑ **Make sure that the contract crushers you hire follow these practices.**

☑ **Clean crusher regularly** by wiping off accumulated oil and grease and removing dirt and debris from the crushing area. This prevents pollution runoff caused by rain or melting snow.

Do not crush vehicles until all fluids have been removed.

Do not crush vehicles on unprotected ground. Some newer crushers have built-in fluid collection systems, and if these are used, a concrete surface is not necessary. It is still important to properly manage waste fluids, which must be tested to determine if they contain hazardous waste.

Parts Cleaning

Wastewater management - keeping hazardous wastes such as used oil, antifreeze and solvents out of soil and wastewater-is essential in operating an environmentally friendly salvage yard. The following section lists parts-cleaning methods that are environmentally safe and include proper management of waste and wastewater. Clean parts only when necessary!

ENVIRONMENTAL HAZARD

Do not clean parts without a proper wastewater management system in place.

Do not clean parts on unprotected ground.

Do not pour or spill cleaning solution or solvents on the ground.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Make sure your facility is using one of the following wastewater management systems:**

1) On-site capture and reuse system for wastewater: This is the best method of wastewater management. Motor vehicle salvage facilities that do not have an on-site capture and reuse system should make every effort to install this type of system. Wastewater generated from on-site capture and reuse systems must be tested to determine if it is a hazardous waste. If so, it must be disposed of under hazardous waste disposal requirements. If the wastewater is not hazardous it may be transported to a wastewater facility for treatment. Contact your local wastewater treatment plant for more information.

2) Connection to a city sewer and wastewater treatment facility: This method of wastewater disposal should only be used when an on-site capture and reuse system is not yet available. Salvage facilities must have written permission from their city wastewater treatment facility operator to release this type of wastewater into the system because it may be hazardous.

SCRAPING

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Remove caked-on grease and oil from parts** with a scraper or knife before washing to reduce cleaning time and water usage. (Wire brushes are commonly used to clean parts but tend to clog easily.)

☑ **Dispose of oil and grease as used oil.**

SOLVENT-BASED PARTS WASHING

☑ **Clean parts in a closed-loop parts-cleaning system that uses cleaning solvents.** Recycle cleaning solvents with the manufacturer or a solvent recycler.

☑ **Drain parts on a drip tray before removing them from the parts washer.** This allows excess solvent to runoff in the washer and not on the ground.

☑ **Keep parts washers closed or covered when not in use** to reduce the amount of solvent lost through evaporation.

Do not pour cleaning solutions or solvents down sanitary or storm sewers or septic drains.

Do not store solvents directly on asphalt surfaces. Cover asphalt surfaces with heavy polypropylene plastic with a minimum thickness of 10 mil. (Solvents can cause asphalt to disintegrate.)

Do not store cleaning fluids in open or uncovered storage containers.

Do not mix cleaning solutions or solvents with other fluids.

Do not store or leave solvent-soaked rags on the ground.

Do not wash solvent-soaked rags at the facility without approval from your wastewater treatment facility.

☑ **Store usable solvents inside the parts-washing system or in closed containers** on a curbed, impermeable concrete surface with spill controls, including drip pans and absorbents.

☑ **Store waste solvents in closed containers** on a covered, curbed, impermeable concrete surface with spill controls, including drip pans and absorbents.

☑ **Label storage containers, "Cleaning Solvents-Hazardous Waste."**

☑ **Record accumulation start date on all waste solvent containers.**

☑ **Keep cleaning-solvent storage containers closed when not in use.**

☑ **Keep solvent-soaked rags in a covered metal container** (plastic will soften and is not fire proof) for reuse if possible.

☑ **Recycle cleaning solvents with a solvent recycler.**

Note: Small amounts of cleaning solvent may be mixed with used oil provided the following requirements are met:

1) The salvage facility qualifies as a Very Small Quantity Generator (VSQG);

2) The solvent is not chlorinated or does not contain paint waste;

3) The solvent has not been mixed with gasoline or carburetor cleaner.

CAUSTIC CLEANING SOLUTION DIP TANKS

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Dip parts in a tank filled with a heated cleaning solution.** Cleaning solutions used for engine cleaning are caustic and may also contain hazardous levels of lead or other toxic wastes from paint flakes or metal fragments.

☑ **Drain engines on drip tray before removing from dip tank.** This allows excess cleaning solution to runoff in the washer and not on the ground.

☑ **Rinse engines. Collect rinse water for filtering or reuse.** If rinse water cannot be reused it may, as a last resort, be discharged to the local wastewater treatment facility only if:

1) The wastewater treatment facility operator has been notified. (Please call your local wastewater treatment facility for information on sewer notification procedures.);

2) Rinse water does not exceed any limits set by the wastewater treatment facility or local ordinances; and

3) Either the IDNR's Field Office or the appropriate county hazardous waste officials have been notified.

☑ **Reuse dip tank cleaning solutions in order to reduce waste.**

☑ **Label all storage containers "Caustic Solution-Hazardous Waste."**

☑ **Record the accumulation start date on all caustic-waste storage containers.**

☑ **Separate and recycle oil and sludge collected** in capture and reuse system holding tanks. Oil can be reused or recycled.

☑ **Evaluate sludge to determine if it is a hazardous waste.** Hazardous sludge must be disposed of using a hazardous waste hauler. Contact the Iowa Waste Reduction Center for assistance at (800) 422-3109.

☑ **Dispose of nonhazardous waste materials collected from drains, traps and filters as industrial solid waste.** (Contact your local solid waste landfill for more information on disposal of industrial solid waste.)

PRESSURE WASHING AND STEAM CLEANERS

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Use one or more of the following pressure or steam cleaning methods:**

1) Pressure clean in a closed-loop parts-washing machine that reuses wash-water and filters waste fluids. Evaluate filters to determine if they should be disposed of as a hazardous waste;

2) Pressure clean using a hand-held pressure washer. Wash parts in an enclosed area with an on-site capture and reuse system to collect waste and wastewater. (Cleaning solvents may not be released into an on-site sewage treatment system.);

3) **Steam clean on a wash rack** with an on-site capture and reuse system to collect wastewater; or

4) **Steam clean using a hand-held steam cleaner** in an enclosed area with an on-site capture and reuse system to collect waste and wastewater.

☑ **Separate and recycle oil and sludge collected** in capture and reuse system holding tanks. Oil can be reused or recycled.

☑ **Evaluate sludge to determine if it is hazardous waste.** Hazardous sludge must be disposed of using a hazardous waste hauler.

☑ **Dispose of nonhazardous waste materials collected** from drains and traps and filters as industrial solid waste. (Contact your local solid waste landfill for more information on disposal of industrial solid waste.)

CARBURETOR DIP SOLUTIONS

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Clean carburetors only when necessary.** Some carburetor cleaning solutions are caustic but most are solvent based. Carburetors are usually cleaned and rebuilt before they can be used in another vehicle. Since most salvage yards do not rebuild carburetors due to cost, customers typically clean and rebuild them.

☑ **Clean carburetors in solvent-based parts washers**, instead of cleaning solution dip tanks, whenever possible. This will get the part "clean enough" and will not leave caustic solution in the carburetor's moving parts. Caustic carburetor-cleaning solutions (which usually contain methylene chloride) can remain in the part and damage the metal.

☑ **Use carburetor-cleaning solution only when absolutely necessary.** A few drops of carburetor cleaning solution, which is a chlorinated solvent, can contaminate an entire tank or drum of solvent-based parts-washing fluid, making it hazardous, and thereby increasing disposal costs.

☑ **Reuse carburetor-cleaning solutions from dip tanks to reduce waste.**

☑ **Label all storage containers "Carburetor-Cleaning Solution-Hazardous Waste."**

☑ **Record the accumulation start date** on all carburetor-cleaning solution storage containers.

SAND BLASTING OR "BEAD" BLASTING

☑ **Clean parts using a sand or bead blaster.**

☑ **Perform bead blasting** of parts in a cabinet to collect and contain beads for reuse.

☑ **Perform sand blasting** of parts in a blasting booth or over a covered and curbed, impermeable concrete surface to collect excess sand. Collected sand may contain paint chips or metal fragments and must be tested to determine if it is a hazardous waste.

☑ **Dispose of sand that contains hazardous wastes** according to hazardous waste rules.

Spill Control, Prevention & Cleanup

Spill prevention is the key to an environmentally friendly salvage facility. Spills are the most likely- and most preventable-cause of environmental damage that occurs at vehicle salvage yards. Spilled waste fluids can pollute ground water, surface waters and wetlands, affect air quality and harm people and wildlife.

The following section outlines good management practices for spill prevention and clean up that should be incorporated into your individual spill control plan.

EQUIPMENT

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Fire extinguishers should be required** in all salvage facility buildings. Fire extinguishers should also be kept in areas where cutting torches are used and also in yard vehicles.

☑ **Safety equipment for employees:** rubber or latex gloves and safety glasses.

☑ **Absorbent material for soaking up oils and solvents:** rags, towels, pads, booms and organic absorbents, such as corncobs, lime (for battery acid) and sawdust.

Do not stack barrels or other waste-fluid containers.

Do not use water to dilute spills or wash spills into storm or sanitary sewers or septic systems. Use only dry absorbents to clean up spills.

Do not use bioremediation (oil-eating microbes) as a primary clean up method. Bioremediation products can reduce petroleum contamination, but are not effective in cleaning up heavy metals, solvents or other pollutants. If bioremediation techniques are used to clean up soil, additional testing for hazardous wastes may still be necessary to ensure that other contaminants are not present in the soil.

☑ **Containers to hold spilled waste:** drip pans, pails and drums. Storage containers should be placed in secondary containment pans.

☑ **Shovels and scoops** to pick up organic cleanup materials.

☑ **Industrial spill cleanup products** sold specifically for absorbing oil and solvents. These products absorb many times their own weight in fluids before becoming saturated.

PREVENTION

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Drain vehicles, parts and cores** as soon as possible after vehicles enter the facility.

☑ **Dismantle vehicles, parts and cores on a curbed, impermeable, concrete surface** with spill controls such as drip pans and absorbent materials.

☑ **Any secondary spill containment area must be large enough to contain the maximum volume of fluid that could be spilled from the largest storage container** in the containment area. If draining and dismantling is done outdoors, the work area should be covered to keep rainwater from collecting and to prevent the contamination of rainwater and melting snow runoff.

☑ **Deposit collected fluids in proper storage containers.** (Refer to Page 33; Waste Handling, Storage and Disposal Practices)

☑ **Clean up small spills right away.** Any fluids spilled during dismantling should be cleaned up using the smallest amount of absorbent possible or drained into a sump or oil/water separator to prevent surface water runoff. Dispose of used absorbents properly.

☑ **Confine inspection, draining and dismantling of vehicles to one area.**

☑ **Store vehicles, parts and cores with proper spill containment.** Drained vehicles can be stored outside without the need for secondary containment. Undrained vehicles should be stored on a curbed, impermeable surface with spill controls available. Undrained vehicles and cores stored on bare ground must have drip pans under leaks and places where leaks can occur.

☑ **Remove all fluids from vehicles before crushing.**

Do not store leaking vehicles. Always drain leaking vehicles as soon as possible. If leaking vehicles cannot be drained immediately, place drip pans under leaks. The best storage method is on a curbed, impermeable surface with spill controls, such as pads and booms.

☑ **Place all fluids in proper storage containers** immediately after draining. Do not leave open pails or containers where they can be knocked over or forgotten.*

☑ **Place a platform or step next to storage drums** so employees do not have to lift drain pans above their waists to pour fluids into containers. Pouring fluids from awkward positions increases the risk of spills. Keeping funnels at waist height or lower makes pouring easier.

☑ **Store all waste fluids in closed containers to prevent spills.** Check levels daily to prevent overflows. Also, storage containers must be closed tightly so that hazardous fluids do not evaporate.

☑ **Store all used absorbents in closed, covered leakproof containers.** Used oil absorbents can be burned as used oil. Used absorbents that have been tested and found to contain hazardous wastes must be handled according to hazardous waste rules.

☑ **Inspect storage containers regularly for leaks.**

☑ **Develop a maintenance plan for all facility equipment**, such as crushers, forklifts and hydraulic lifts. This plan may include the following:

1) Checklists and logs for each piece of equipment that include routine cleaning and maintenance;

2) Manufacturer's handbooks describing recommendations for parts replacement and general upkeep; and

3) Employee educational materials and instructions on equipment maintenance, including this manual.

CLEAN UP

☑ **Clean up spills right away!**

☑ **Any hazardous substance spill (including lead-acid batteries) with the potential to reach ground water or pose a public safety or health threat should be reported** to the DNR's 24-hour spill number at (515) 281-8694.

☑ **It is best to use drip pans, reusable booms, pails and washable absorbent materials such as oil mops, pads and towels for clean up** Towels, pads and booms must be washed by an industrial laundry service and reused. Salvage facilities that launder absorbents must have permission from the local wastewater treatment facility to discharge wash-water. Organic absorbents that contain hazardous waste cannot be recycled or landfilled. Used-oil absorbents may be recycled or burned on-site, if they are burned in a commercially available space-heating unit.

☑ **Keep spill control equipment/absorbent material in a central location**, easily accessible to all employees.

☑ **Train all employees to quickly respond to different kinds of spills.**

CHAPTER

2

Waste Handling, Storage and Disposal

Used Oils and Oil Filters

One gallon of used oil, a category which includes petroleum-based products such as motor and differential oils, brake, transmission, power-steering and trans-axle fluids, can contaminate up to one million gallons of water, making it unfit to drink, as well as harmful to wildlife and the environment. If used oils have been mixed with hazardous waste, the entire mixture is considered a hazardous waste.

ENVIRONMENTAL HAZARD

Do not store oil in open or leaking containers.

Do not pour used oil or allow it to drip or leak on the ground.

Do not pour used oil down the drain or in sanitary and storm-water sewer systems or on-site septic systems.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Drain and collect all oils** on a covered and curbed, impermeable, concrete surface with spill controls, including drip pans and absorbents.

☑ **Used oils can be mixed together and stored in the same container.** Mix only those fluids defined in the beginning of this section as "Used Oils."

☑ **Store used oil in leakproof, closed containers,** such as drums or above ground storage tanks placed on a curbed, impermeable, concrete surface with spill controls, including drip pans and absorbents. (Do not use underground storage tanks for above ground storage. They are constructed to be used underground only.

☑ **Remove used oil from all engines.**

☑ **Used oil may be recycled by:** 1) filtering and reusing it on site in personal vehicles; 2) recovering and eventual re-refining by an oil hauler or fuel marketer; or 3) burning in an approved on-site heating unit.

1) Reuse: Used oil can be reused in vehicles if it has been properly filtered to remove metal particles and other contaminants.

2) Hauling: Used oil can be removed from the facility by a licensed used-oil hauler or marketer. (Keep receipts of all shipments of used oil.) A hazardous waste hauler or waste manifest is not required for transporting used oil that has not been mixed with a hazardous waste. Haul used oil on a regular basis to avoid accumulating more used oil than your spill containment area can handle. A secondary spill containment area, such as a curbed, impermeable surface, must hold the volume of the largest tank stored on it. For instance, if you store four, 55-gallon drums of waste fluid on a curbed surface; the containment area must be capable of safely holding only 55 gallons of waste fluid, not 220 gallons.

3) Burning on-site: Used oil can be burned on-site in a space heater. Used oil generated outside the salvage facility may not be burned at the facility unless it has been tested and found to meet regulatory standards. Following are the requirements under which used oil may be burned in a space heater:

a) The space heater must be rated at less than 500,000 BTUs per hour;

Do not leave funnels in oil storage drums or tanks.

Do not spread used oil on roads to control dust.

Do not spray used oil to control weeds.

Do not burn used oil unless it is used in an approved boiler, furnace or space heater.

CAUTION: Do not mix antifreeze, solvents, gasoline, degreasers, paint or anything else with used oil.

There is only one exception: if you operate a salvage facility that produces less than 22 gallons of hazardous waste a month, you may mix ignitable solvents with used oil only if:

1) The solvent waste does not contain metal-bearing paint;

2) The solvent waste is not a listed hazardous waste;

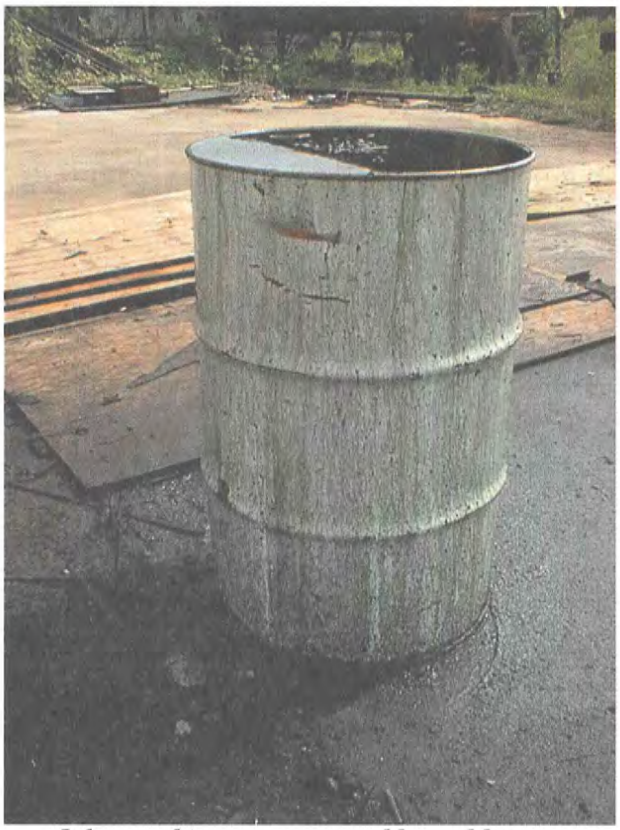
3) The solvent waste is not gasoline;

4) The oil/solvent mixture does not contain more than 10 percent (total weight) solvents (For example, 50 gallons of used oil, may be mixed with five gallons of solvent waste); and

5) The oil/solvent mixture does not have a flash point below 100 degrees Fahrenheit.

b) The space heater must be vented outside; and

c) The space heater must burn used oil generated at the facility or used oil accepted directly from "do it yourself" oil changers.



Oil stored in an uncovered barrel has now contaminated the ground, due to rainwater accumulation.

USED OIL FILTERS

Used oil filters are a potential source of pollution if engine oil from them is spilled during draining, crushing or storage. This section outlines environmentally safe steps for handling used oil filters.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Drain engine oil and remove used oil filters** from vehicles as soon as possible after vehicles enter the facility.

☑ **Drain oil filters of all free-flowing oil by poking holes in the top of the filter**, and draining it with the filter threads facing up This method bypasses the check valves in the filter, ensuring that most of the oil is removed. Oil filters should be drained for 12 to 24 hours.

☑ **Crush filters.** Use oil filter crushing equipment or any method that adequately crushes the filters.

☑ **Design a crushing area** with an impermeable, concrete surface and spill controls, including drip pans and absorbents.

Do not leave oil filters on engines.

Do not dispose of used oil filters in the trash. Even after an oil filter has been drained, it contains several ounces of oil that can leach out in a landfill and contaminate the ground water.

Do not drain, crush or store used oil filters on unprotected ground.

Do not store used oil filters outdoors in uncovered containers.

Do not recycle or dispose of used oil filters that have not been drained.

☑ **Recycle used oil filters that have been drained and crushed.** These filters may be transported to a scrap-metal recycling facility. Oil filters should be transported in drums or large storage containers. As an alternative to the high cost of recycling drums, crushed oil filters may be put inside vehicles that are being transported to a scrap recycling facility, provided there is an agreement with the recycling facility operator to accept crushed oil filters in that manner. Oil filters that have not been crushed cannot be transported inside vehicles. Contact the recycler in your area for more information.

☑ **Transport used oil filters in a way that will ensure that leftover oil is not dumped or dripped on the ground.** To prevent oil leakage, transport used oil filters in a closed, leakproof container.

☑ **Keep receipts of used oil filter shipments.**

Antifreeze

Used antifreeze, through contact with a car's cooling system, may contain traces of fuel, oil and metal particles (including lead), making it a possible hazardous waste. If not properly managed and stored, these pollutants can seep into soil and ground water, harming people, plants and animals.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Drain antifreeze from radiators and heater cores** as soon as possible after vehicles enter the facility.

☑ **Determine if the antifreeze is reusable** or a waste fluid. Reusable antifreeze is considered a product and can be used in facility vehicles, sold or given away. Waste antifreeze is antifreeze that is contaminated or too old to be reused. Test results have shown that used antifreeze often contains lead, benzene and other contaminants at levels that make it hazardous. Waste antifreeze is considered a hazardous waste (unless tested and shown to be nonhazardous) and must be disposed of according to hazardous waste rules.

☑ **Store antifreeze in closed containers** on a curbed, impermeable, concrete surface with spill controls, including drip pans and absorbents.

Do not store antifreeze in open or leaking containers.

Do not pour antifreeze on the ground.

Do not pour antifreeze down the drain or in a sanitary or storm sewer system, or in an on-site septic system.

Do not leave funnels in storage drums or tanks.

Do not mix antifreeze with other fluids.

☑ **Label storage containers according to antifreeze type:** "Waste Anti-freeze-Hazardous" or "Reusable Antifreeze."

☑ **Record the accumulation start date** on all waste antifreeze storage containers.

☑ **Keep outdoor storage containers closed and remove funnels when not in use.** Otherwise they may fill with rain and cause used antifreeze to overflow.

☑ **Store out of reach of children and pets.** The sweet taste of antifreeze attracts animals but as little as 2 ounces will kill a dog.

☑ **Recycle reusable antifreeze using one of these methods:**

1) Reuse: Antifreeze can be reused in facility vehicles or machinery, sold as used antifreeze or given away. (Reusable antifreeze can be filtered to remove undissolved solids. But filtration does not remove dissolved contaminants.) This antifreeze does not need to be recycled using the distillation or ion exchange methods listed below.

2) Distillation: Restores used antifreeze to a high level of purity.

3) Ion exchange: Restores used antifreeze to a high level of purity.

☑ **Purchase distillation, ion exchange or filtration equipment** for your facility or use an approved antifreeze recycling service to recycle used antifreeze.

☑ **Dispose of waste antifreeze using one of these methods:**

1) Transport it to a hazardous waste disposal facility using a hazardous waste manifest and hazardous waste transporter.

2) Transport it to a hazardous waste disposal facility by the facility as a special waste.

Fuel

Used and waste fuel poses not only a pollution risk to motor vehicle salvage facilities, but also a safety risk to facility employees.

Handling, storing and disposing of fuel requires special care to prevent spills, explosions and fires, as well as human health hazards from exposure to skin and inhalation.

Do not use an electric pump to drain fuel tanks. Electric pumps give off sparks that may ignite fuel.

Do not store fuel tanks that contain fuel.

Do not mix fuel with other fluids.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Remove fuel tanks and drain fuel** as soon as possible after vehicles enter the facility.

☑ **Determine if fuel is reusable or "waste fuel."** (Waste fuel is fuel that has been mixed with water or other wastes, or is too old to be reused.)

☑ **Store reusable fuel in a tank on-site** for use in facility or employee vehicles, or siphon fuel directly from dismantled vehicles into facility vehicles using an air-driven pump

☑ **Follow these steps when managing waste fuel:**

1) Store waste fuel in closed containers such as drums or above ground storage tanks. Place containers on a covered and curbed, impermeabl concrete surface with spill controls, including drip pans and absorbents.

2) Label waste fuel storage containers.

3) Record the accumulations start date on all waste fuel storage containers.

4) Inspect storage containers weekly; record inspection results.

5) Recycle waste fuel with a licensed hazardous waste hauler.

6) Follow all hazardous waste transport and disposal requirements when disposing of waste fuel.

7) Store diesel fuel separate from gasoline.

8) Keep storage containers closed and remove funnels when not in use.

Lead-Acid Batteries

Used lead-acid batteries, which contain lead and corrosive chemicals, pose very real pollution risks and special handling problems at salvage yards. Improperly managed and stored batteries are not only a safety hazard, but can pollute the environment if they crack and leak, particularly when stored outdoors and when subjected to freezing temperatures.

ENVIRONMENTAL
HAZARD

Do not store batteries indoor or outdoors without proper spill protection. If batteries are stored outdoors they must be covered.

Do not store batteries in vehicles; they can corrode and leak more easily.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Test batteries** to determine usability or resale quality.

☑ **Remove reusable batteries** for resale. Also, remove lead cable ends from reusable batteries and store the lead parts in a covered container that is strong enough to hold the excessive weight of the lead.

☑ **Leave lead battery cable ends attached to scrap batteries** for recycling.

☑ **Place cracked or leaking batteries immediately in a closed, leakproof storage container** or on a curbed, impermeable asphalt surface with spill controls, including drip pans and lime.

Note: Unlike the storage of other wastes, sealed asphalt surfaces are best for battery storage because battery acid can degrade concrete. Asphalt should not be used as secondary containment for any other waste storage since other wastes, particularly antifreeze and petroleum products, can degrade asphalt.

☑ **Store batteries indoors.** They must be stored in either a closed, leakproof container or on a curbed, impermeable, asphalt surface with spill controls, including drip pans and lime. If stored outdoors, the storage area should be covered to keep rainwater from collecting and to prevent contaminated runoff from occurring with rain and melting snow.

☑ **Store batteries on a "non-reactive" surface.** This kind of surface may include the following:

1) Fiberglass or plastic "battery boxes" made specifically for battery storage. These can be purchased from local suppliers;

2) A curbed impermeable asphalt surface coated with acid resistant epoxy;

3) A covered-wooden frame lined with heavy polypropylene plastic. Polypropylene is the least expensive plastic available. However, any heavy sheet plastic may be used;

Do not over fill storage containers. Batteries on the bottom may be crushed and the storage containers may become difficult to move.

Do not accumulate batteries for a long period of time - recycle regularly!

Do not drain fluids from batteries.

4) A curbed concrete surface coated with acid-resistant epoxy, fiberglass or plastic or lined with heavy polypropylene plastic;

5) Polypropylene cement-mixing tubs. These tubs, usually sold at lumber yards, are rectangular (2 feet by 3 feet) and can hold approximately 30 batteries; and

6) Sealed five-gallon polypropylene plastic pails can be used to temporarily store leaking or cracked batteries.

☑ **Store batteries in an upright position** to prevent leaks from vent holes.

☑ **Non-leaking batteries may be placed on a wooden pallet** (inside Secondary Containment) and "shrink wrapped" for easy pickup and transportation.

☑ **Stack batteries no more than five high.** If batteries are stacked higher, they may become unstable. Some facilities use wooden planks between each layer of batteries to provide stability and to prevent terminal posts from puncturing the battery above.

☑ **Spread an absorbent, such as lime or baking soda, in the bottom of battery boxes or battery storage bins** to absorb spilled battery acid. Dispose of used absorbent as a hazardous waste.

☑ **Inspect all batteries, storage containers and cover materials** weekly for leaks, cracks or tears. Storage containers or materials that have been exposed to freezing temperatures should be checked more often.

☑ **Include receipts with the license number of the recycling facility.**

☑ **Record inspection results.**

☑ **Manage all spilled materials and absorbents as a hazardous waste.**

☑ **Recycle at least 75 percent of all accumulated batteries each year** with a licensed recycler. Facilities that do not recycle 75 percent of their batteries each year must meet additional storage requirements.

☑ **Transport used batteries for recycling using one of the following methods:**

1) Transport by a used-battery hauler;

2) Transport by a battery supplier; or

3) Transport by the salvage facility

☑ **Keep records to show that your facility is recycling used batteries.**

LEAD PARTS

Lead parts, such as battery cable ends, soldered tubing joints and tire weights, are often a forgotten source of lead pollution. The amount of lead found in a single BB or shotgun pellet is enough to contaminate an entire truckload of vehicle shredding "fluff", making it hazardous waste and requiring costly disposal methods.

Do not leave lead parts in vehicles. Make sure all lead parts are removed before crushing.

Do not store lead parts on the ground.

Do not store lead parts in uncovered containers.

Do not dispose of lead parts in the regular trash.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Remove lead tire weights and battery cable ends** before crushing vehicles. Battery cable ends may be left on unusable batteries and recycled along with the batteries.

☑ **Remove other known sources of lead** from vehicles. Lead can be found in radiators, heater cores, steering columns and in any soldered parts such as circuit boards and in electronic components.

☑ **Store lead parts in a covered container** that is capable of handling the excessive weight of the lead. Some facilities store lead tire weights with batteries in battery boxes. If you use this method, make sure weights are not placed under batteries or allowed to roll around in the box. This makes the stacks unstable and increases the possibility of puncturing batteries.

☑ **Recycle lead parts** with a metals or battery recycler.

Waste Tires

Waste tires present two unique pollution and public-safety concerns: The potential for fires, and the possibility of providing a breeding ground for disease-carrying mosquitoes. Although waste tires do not ignite easily, once on fire, they burn very hot and are difficult to extinguish. Extinguishing methods are costly and can produce an oily runoff that can pollute soil and nearby surface and ground water. If improperly stored, tires may collect rainwater, which can create an ideal breeding ground for mosquitoes.

WHAT TO DO...

AN ENVIRONMENTAL CHECKLIST

☑ **Store waste tires in a sunny area.** (Sunlight speeds evaporation of standing water and kills heat-intolerant mosquito larvae.)

☑ **Store waste tires in a covered trailer, roll-off box or cage** to prevent rainwater and melting snow from collecting. Water may also add weight and increase disposal costs.

☑ **Store small quantities of waste tires.** Transport them regularly to a permitted waste-tire processor.

☑ **Store no more than 500 waste tires** onsite at one time. Facilities planning on storing more than 500 tires must apply to the IDNR for a storage permit. Licensed auto recyclers may store up to 3,500 tires.

☑ **Facilities that store more than 3,500 used tires must obtain a permit** from the IDNR and follow these management practices:

Do not store more than 500 waste tires at your facility without an IDNR storage permit.

Do not store used waste tires in shaded areas.

Do not accumulate large quantities of waste tires. Transport them regularly to a permitted processor.

1) Limit individual stockpiles to 50,000 cubic feet by 10 feet high;

2) Establish fire lanes at least 50 feet wide between stockpiles;

3) Prohibit smoking and lighting of flames around stockpile area;

4) Tires cannot be stored closer than 50 feet from any fence or property line;

5) Work with local fire and police departments to develop an emergency response plan in case of fire;

6) Any person transporting more than 40 waste tires must be registered as a waste tire hauler (Contact the IDNR for more specific regulations).

Mercury Switches

Mercury, a highly toxic metal, is often found in hood or trunk light switches. Liquid mercury and mercury vapor are hazardous to both humans and the environment. Once released, mercury cannot be eliminated - it will stay in the environment forever. Just one-half pound of mercury, the amount found in approximately 450 trunk or hood lights, has the potential to contaminate one-half million fish.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Remove all mercury switches** from vehicles as soon as possible after they enter the facility.

☑ **Be careful not to break or puncture the mercury** container during removal.

☑ **Store mercury switches in a leakproof, closed container.** The mercury in the switch is enclosed in a glass capsule. The most important storage precaution is to store mercury switches in a way that prevents the capsule from breaking.

☑ **Recycle mercury switches** with a licensed metals recycler that reclaims mercury.

Do not leave mercury switches in vehicles. Make sure all mercury switches are removed from vehicles before crushing.

Do not store mercury switches on bare ground or uncovered containers.

Do not dispose of mercury switches in the regular trash.

Catalytic Converters

Catalytic converters - which contain platinum, a valuable, recyclable metal - are seldom resold as parts by salvage facilities. Before they can be resold, catalytic converters must be tested using expensive equipment. Instead, most facilities recycle catalytic converters by selling them to core buyers or scrap recyclers.

ENVIRONMENTAL HAZARD

Do not resell catalytic converters that have not been tested and approved.

If untested and unapproved catalytic converters are installed on cars, they may not protect the environment from air pollution.

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Remove catalytic converters** from vehicles as soon as possible after vehicles enter the facility.

☑ **Recycle catalytic converters** with a catalytic converter collection center.

☑ **Test catalytic converters** with federally approved testing equipment if the converters are to be resold at the facility. Catalytic converters that have not been tested and approved in this manner cannot be sold to the public.

WINDOW-WASHING FLUID:

Although window-washing fluid is mainly alcohol, water and detergent, it does contain small amounts of antifreeze and may mix with other wastes if not properly drained. Window-washing fluid should be carefully drained, stored and recycled to prevent pollution from spills.

Other Wastes

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Drain window-washing fluid** from vehicles as soon as possible after they enter the facility.

☑ **Reuse window-washing fluid** in salvage facility or employee vehicles.

☑ **Sell or give away reclaimed window-washing fluid** to customers.

☑ **Store window-washing fluid in covered containers** on a curbed, impermeable, concrete surface with spill controls, including drip pans and absorbents.

Do not pour window-washing fluid on the ground.

Do not pour window-washing fluid down sanitary sewer, storm water sewer or septic drains.

Do not mix window-washing fluid with other fluids.

Discarded Appliances (White Goods)

The State of Iowa requires that all discarded appliances must be demanufactured before they are recycled or disposed of. Any facility demanufacturing discarded appliances must be permitted with the Department of Natural Resources. Improper handling of discarded appliances will release hazardous materials, including refrigerants, mercury, polychlorinated biphenyls (PCBs), or sodium chromate.

Do not accept or handle any discarded appliances unless your facility is permitted

Do not scrap or crush discarded appliances without first removing hazardous materials and components

WHAT TO DO...
AN ENVIRONMENTAL CHECKLIST

☑ **Any facility demanufacturing discarded appliances must be permitted** with the Department of Natural Resources, per 567 IAC Chapter 118.

☑ **All discarded appliances should be handled carefully and stored upright** to prevent damage to electrical capacitors, refrigerant lines and compressors, and other components containing hazardous materials.

☑ **Remove all PCB capacitors, mercury components, refrigerants and sodium chromate** from discarded appliances before they are scrapped.

☑ **Be sure to properly store, handle, and dispose of all hazardous wastes**, materials, and refrigerants recovered from the demanufacturing process.

☑ **Discarded appliances may only be stored for 270 days** without demanufacturing, and no more than 1000 discarded appliances may be stored at any location.

CHAPTER

3

Storm Water Permitting

Storm Water Management

Storm water management and spill prevention goes hand-in-hand. The aim of each is to prevent waste fluids from being washed into the environment along with storm water runoff. Contaminated storm water can pollute surface water, ground water and soil. This section offers specific steps to help facilities reduce & eliminate spills that can pollute storm water.

The State of Iowa requires industrial facilities, including motor vehicle salvage facilities, to apply for a storm water permit under the Federal National Pollutant Discharge Elimination System (NPDES) rules. This permit requires facilities to develop and implement a plan to control storm water discharge from their facility. A Storm Water Management Plan must include:

1) A site map

2) A list and description of potential pollutants

3) A description of the facility's Storm Water Best Management Practices (BMPs). BMPs include a spill prevention and spill response plan, waste-fluid management plans and general operating procedures that will reduce or eliminate spills and leaks. A facility should incorporate all or part of this manual into its BMPs

4) A description of the facility's plan to notify state and local government or other agencies about spills.

APPLYING FOR A PERMIT

☑ **Copy and fill out the IDNR Storm Water Permit Application**

☑ **Contact your local IDNR field office** for assistance in completing the permit application, or Joe Griffin at (515) 281-7017.

Field Office 1

900 West Main Street, Suite 4
Manchester, IA 52057
(563) 927-2640

Field Office 2

2300 15th Street SW, Box 1443
Mason City, IA 50401
(641) 424-4073

Field Office 3

Gateway North Mall
1900 North Grand Avenue
Spencer, IA 51301
(712) 262-4177

Field Office 4

1401 Sunnyside Lane
Atlantic, IA 50022
(712) 243-1934

Field Office 5

401 SW 7th Street, Suite 1
Des Moines, IA 50309-4611
(515) 725-0268

Field Office 6

1004 W. Madison
Washington, IA 52353
(319) 653-2135

☑ **The U.S. Environmental Protection Agency (EPA) has developed a manual** to guide facilities in developing their own Storm Water Management Plans. To order Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices Manual, (document number EPA 832-R-92-006), please call the National Technical Information Service at (703) 487-4650, or contact the Iowa Waste Reduction Center in Cedar Falls at (319) 273-8905 or (800) 422-3109.

Pollution Prevention Plans

The purpose of the pollution prevention plan is to reduce pollution from facilities where "industrial activities" occur at the source, before this pollution can cause environmental problems that cost the public and private sectors in terms of lost resources and expensive environmental restoration activities.

Storm water runoff is part of the natural hydrologic cycle. However, human activities can alter natural drainage patterns and add pollutants to the rain water and snow melt that run off the earth's surface and enter our Nation's rivers, lakes, streams, and coastal waters.

In fact, recent studies have shown that **storm water runoff is a major source of the pollutants** that are damaging our sport and commercial fisheries, restricting swimming, and affecting the navigability of many of our Nation's waters.

The pollution prevention plan is required to ensure that pollutants are not making their way into the storm water discharge from your site. This plan requires that you select and implement Best Management Practices (BMPs). BMPs can consist of a schedule of activities, prohibitions or practices, maintenance procedures, and other management practices to prevent or reduce pollution in runoff from your site. In many cases, BMPs may already be in place and just need to be identified in the pollution prevention plan.

A storm water pollution prevention plan must be developed for each site covered under General Permit No. 1. The plan shall identify the potential sources of pollution, which may reasonably be expected to affect the quality of the storm water discharge. The plan shall describe and ensure the implementation of practices that will be used to reduce the pollutants in the storm water discharge. Facilities must implement the provisions of the storm water pollution prevention plan required as a condition of General Permit No. 1.

A Step-By-Step Guide for Developing a Pollution Prevention Plan for Storm Water Discharge

This Section is organized as a step-by-step guide for developing a pollution prevention plan for a storm water discharge covered under Iowa's NPDES General Permit No. 1.

This step-by-step guide is presented as 7 PHASES. Each phase focuses on a particular type of information related to the storm water discharge. Individual steps are identified under each separate PHASE.

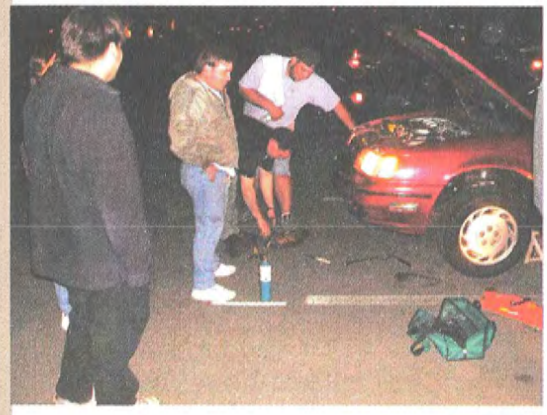
The seven major phases in developing the pollution prevention plan are:

1) **Planning and Organization**
2) **Assessment**
3) **Best Management Practice (BMP) Identification**
4) **Implementation**
5) **Evaluation**
6) **General Requirements**
7) **Special Requirements**

Visual Inspections

Regular visual inspections are your means to ensure that all of the elements of the plan are in place and working properly to prevent pollution of storm water runoff from your facility.

Consider the following when conducting visual inspections.



☑ **Designate qualified, trained plant personnel to regularly inspect the facility's equipment and areas**, track results of inspections, make necessary changes, and maintain records of all inspections.

☑ **Ensure that inspection records note when inspections were done**, who conducted the inspection, what areas were inspected, what problems were found, and what steps were taken to correct any problems.

Based on an assessment of the potential of various sources at the plant to contribute pollutants to storm water discharges, storm water controls shown to be reasonable and appropriate must be implemented and maintained.

Management of Runoff

☑ **Permittees must describe existing storm water controls** (controls that divert or direct the flow of storm water rather than the pollutant; i.e. using a berm to divert storm water around a storage pile) found at the facility and the appropriateness of any additional storm water controls that can be implemented to improve the prevention and control of polluted storm water. Examples include: run-on controls, vegetative swales, reuse of collected storm water, infiltration trenches, and detention ponds.

Annual Site Compliance Evaluation

A consulting engineer or other trained environmental consultant must conduct site compliance evaluations at appropriate intervals, but at least once a year. As part of your compliance evaluations, you are required to carry out the following:

☑ **Inspect storm water drainage areas for evidence of pollutants** entering the drainage system.

☑ **Based on the results of the inspection, evaluate the effectiveness of pollution prevention measures (BMPs).** For example, determine if your site is cleaner or gauge whether employees are more familiar with good housekeeping measures and spill prevention/response practices.

☑ **Observe structural storm water measures, sediment controls, and other storm water BMPs** to ensure proper operation. Also, visually inspect equipment needed to implement the plan, such as spill response equipment.

☑ **Revise the plan as needed within 2 weeks of an inspection** and implement any necessary changes within 12 weeks of the inspection.

☑ **Prepare a report summarizing the extent of the inspection**, the inspection results, follow-up actions, the date of the inspection and the personnel who conducted the inspection.

☑ **Sign the report and keep it with the plan.**

Monitoring results shall be retained. Since permits can only be issued for a maximum of five years, these results may be needed in the re-notification (permit renewal) process.

Record Keeping & Internal Reporting

A copy of the storm water pollution prevention plan, records of all monitoring information, copies of all reports required by the general permit and records of all data used to complete the Notice of Intent must be retained for the duration of the permit or for a period of at least three years from the date of the measurement, report, inspection, etc.

Major changes in a facility's design, construction, operation, or maintenance will necessitate changes in that facility's Storm Water Pollution Plan. The plan will also need to be revised if the storm water pollution prevention plan proved to be ineffective in achieving the general objectives of controlling pollutants in the storm water discharge.

Facilities covered under Iowa's General Permit No. 1 must comply with applicable requirements in Municipal Storm Water Management Programs developed under NPDES permits issued for the discharge from the municipal separate storm sewer system that receives the facility's discharge. The discharger, however, will be notified of the requirements resulting from the Municipal Storm Water Management Program.

Additional Requirements

During the period beginning on the effective date and lasting through the expiration date of your permit; vehicle salvage yards with over 250 units are subject to the following monitoring requirements:

Frequency of monitoring:

Sampling shall be conducted at least annually (once each year).

PARAMETERS TO BE MEASURED:

- oil and grease (mg/L);
- five day biochemical oxygen demand (BOD5) (mg/L);
- chemical oxygen demand (COD) (mg/L);
- total suspended solids (TSS) (mg/L);
- total Kjeldahl nitrogen (TKN) (mg/L);
- total phosphorus (mg/L);
- pH;
- any pollutant limited in an effluent guideline to which the facility is subject;
- the dated and duration (in hours) of the storm event(s) sampled;
- rainfall measurements or estimates (in inches) of the storm event which generated the sampled runoff;
- the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and
- an estimate of the total volume (in gallons) of the discharge sampled shall be provided

For discharges from holding ponds or other impoundment with a retention period greater than 24 hours, (estimated by dividing the volume of the detention pond by the discharge rate) a minimum of one grab sample may be taken.

Sample Type

☑ **All samples shall be collected from a discharge resulting from a storm event that is greater than 0.1 inches in magnitude** and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event.

☑ **For all other discharges, data shall be reported for both a grab sample and a composite sample.**

☑ **The grab sample shall be taken during the first hour of the discharge.** The composite sample shall either be flow-weighted or time-weighted.

☑ **Composite samples may be taken with a continuous sampler** or as a combination of a minimum of three sample aliquots taken in each hour of discharge for the entire discharge or for the first three hours of the discharge, with each aliquot being separated by a minimum period of fifteen minutes.

☑ **Only grab samples may be collected and analyzed** for the determination of pH, temperature, cyanide, total phenols, residual chlorine, fecal coliform, fecal streptococcus, and oil and grease.

Representative Discharge

When a facility has two or more identical outfalls, testing each outfall separately is not necessarily necessary, as is outlined below:

When a facility has two or more outfalls that, based on a consideration of features and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may test the effluent of one of such outfalls and report that the quantitative data also applies to the substantially identical outfall(s).

In addition, for each outfall that the permittee believes is representative, an **estimate of the size of the drainage area** (in square feet) and an estimate of the runoff coefficient of the drainage area [e.g. low (under 40%), medium (40% to 65%) or high (above 65%)] shall be provided.

CHAPTER

4

Resources and References

DNR Contact Information

In order to assist you with questions you may have about information in this manual, and to provide you with further resources for waste management and pollution prevention activities, the applicable contact information on specific subjects, as well as internet resources, are listed below:

IIOWA DEPARTMENT OF NATURAL RESOURCES
http://www.state.ia.us/dnr/

TO REPORT A SPILL

If you need to report a spill, or have any questions about the need to report, call the DNR at:

DNR 24 – hour Emergency Response Phone Number: 515/281-8694

or contact our **Emergency Response Unit**, which provides technical assistance and regulatory oversight regarding spills and hazardous conditions. They are a Liaison to local, state, and federal emergency planning groups.

Kathy Lee - 515/725-0384, e-mail: kathy.lee@dnr.state.ia.us
Clark Ott - 515/725-0386, e-mail: clark.ott@dnr.state.ia.us
David Perry - 515/725-0387, e-mail: david.perry@dnr.state.ia.us

TO CONTACT A DNR FIELD REPRESENTATIVE IN YOUR AREA

The DNR's Environmental Services Division has a number of field offices throughout the state. They are local representatives of the Division, and a primary task for them is helping people to understand environmental protection programs. Staff in the field can assist you in understanding when to apply for a permit and how to meet permit requirements. Field staff also conduct routine inspections of facilities permitted by the Division, and they respond to environmental complaints from the public.

Contact the regional field office below that is closest to you. If you are unsure of which office serves your area, call **515-281-4367** and ask which office is closest to the county you operate in.

- **Field Office #1: Manchester (northeast Iowa)**
  563/927-2640
  909 West Main, Suite 4,
  Manchester, IA 52057

- Field Office #2: Mason City (north central Iowa)
  641/424-4073
  2300 15th Street SW
  Mason City, IA 50401

- **Field Office #3: Spencer (northwest Iowa)**
  712/262-4177
  1900 N. Grand Ave.
  Spencer, IA 51301

- **Field Office #4: Atlantic (southwest Iowa)**
  712/243-1934
  1401 Sunnyside Lane
  Atlantic, IA 50022

- **Field Office #5: Des Moines (central – south central Iowa)**
  515/725-0268
  401 SW 7th, Suite I
  Des Moines, IA 50309

- **Field Office #6: Washington (southeast Iowa)**
  319/653-2135
  1004 W. Madison
  Washington, IA 52353

Appliance demanufacturing permits

A permitting process is included in 567 IAC Chapter 118 for those facilities demanufacturing appliances. For questions on IAC Chapter 118, contact Jim Thayer of the Iowa Department of Natural Resources at (515) 281-3426.

UNITED STATES EPA

The United States Environmental Protection Agency (EPA) has many resources available for small business that may be of assistance with environmental management and compliance issues.

The EPA's regional office serves all of Iowa :

U.S. EPA Region VII
Kansas City, Kansas
913-551-7020 or 913-551-7800
http://www.epa.gov/region07/

Regulations on CFC removal and capture from vehicles:

The Federal EPA has regulations on CFC removal from vehicles. Questions on EPA refrigerant removal and capture should be addressed to Alice Law, Region VII EPA, at **(913) 551-7623.**

Regulations for PCB removal and handling:

EPA regulations on PCBs are specified in 40 CFR, Part 761. For any questions concerning EPA regulations of PCBs contact David Phillippi at (913) 551-7395.

The EPA's "Small Business Gateway" on the Agency's homepage was created to provide easier access for small businesses to all of the EPA resources on the web. Links to numerous headquarters offices are provided, as well as all of the EPA's Regional Offices and to a growing list of assistance and help programs, hotlines and publications. Visit the Small Business Gateway site at:

http://www.epa.gov/smallbusiness/

Regulations for mercury and sodium chromate removal and handling:

EPA regulations on mercury or sodium chromate are specified in 40 CFR, Part 262. For any questions concerning EPA regulations of mercury or sodium chromate, contact the Brian Mitchell at (913) 551-7633.

The Iowa Waste Reduction Center (IWRC) offers a free, and confidential, environmental compliance assistance program for small businesses in Iowa, and the Iowa Waste Exchange (IWE) is a free, non-regulatory and confidential state program that assists Iowa businesses and industry with waste management alternatives.

IWRC and IWE

IOWA WASTE REDUCTION CENTER (IWRC)

IWRC helps small businesses comply with federal and state environmental regulations, by incorporating on-site reviews, applied research, and hands-on training with site owners and employees. The IWRC also sponsors the Small Business Pollution Prevention Center, which provides practical solutions to pollution prevention issues. For more information contact the IWRC as listed at the right.

IOWA WASTE EXCHANGE - RECYCLE IOWA

Through the program, sponsored by Recycle Iowa, participating businesses may be able to find other businesses that can use their waste materials. For a listing of these materials, contact Recycle Iowa (see web address at right).

Additionally, participating businesses realize savings from avoided purchases, reductions in transportation costs and freed storage space. There are ten Iowa Waste Exchange Area Resource Specialists serving Iowa.

IWRC SMALL BUSINESS POLLUTION PREVENTION CENTER

1005 Technology Parkway
Cedar Falls, IA 50613-6951
(800) 422-3109,
(319) 273-8905
http://www.iwrc.org/programs/SBPPC.cfm

IOWA WASTE EXCHANGE

http://www.iwrc.org/programs/IWE.cfm

RECYCLE IOWA

http://www.recycleiowa.org/exchange.htm

Other Resources

The following businesses provide a variety of information over an array of environmental issues within the automotive industry.

CONTACT INFORMATION:

CCAR-GreenLink®:

http://www.ccar-greenlink.org/

National Metal Finishing Resource Center (NMFRC):

http://www.nmfrc.org/

Paints and Coating Resource Center:

http://www.paintcenter.org

1. CCAR-GreenLink®, the National Automotive Environmental Compliance Assistance Center, is available 24 hours a day to help persons engaged in automotive service, collision repair and other sectors of the automotive industry better understand their environmental responsibilities, and to help them achieve compliance with environmental program requirements.

2. National Metal Finishing Resource Center (NMFRC). For information on metal processing, including how to manage wastes from metal finishing, contact the NMFRC. They also have information on market prices for metals.

3. Paints and Coating Resource Center. The objective of the Paint and Coatings Resource Center (PCRC) is to deliver regulatory and pollution prevention information, either directly to businesses engaged in painting and coating, or indirectly through the technical assistance community (including state and local agencies, and consultants).