Best Management Practices (BMP)

for the Auto Salvage Outreach Program

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Produced By:
VT Solid Waste Districts and Alliances
VT Department of Environmental Conservation, Environmental Assistance Office
800-974-9559 / 802-241-3745

Auto Salvage Yard Environmental Resource Center

Important pollution prevention challenges faced by the salvage industry include preventing the release of liquid hazardous materials such as oils and lead-acid battery contents into the soils, groundwater, and surface waters, and the release of air conditioning refrigerants such as chloroflorocarbons (CFCs) into the atmosphere. Contamination can occur at many stages of salvage operations. Soil, groundwater and air contamination can occur during vehicle disassembly and fluid drainage operations. Contamination can also result from improper parts, fluids and refrigerant storage.

The Vermont Department of Environmental Conservation, in cooperation with regional Solid Waste Management Districts and Alliances, put together a program to assist Vermont's Auto Salvage Yard operators with understanding and complying with environmental regulations. As part of the program, eight workshops were held across the state. A Best Management Practices (BMP) Guide was developed to help auto salvage yards reduce their environmental impacts and liability. Twenty-two fact sheets were also developed that are designed to assist operators with environmental compliance issues. All of the resources developed for the program are available on-line:

www.anr.state.vt.us/dec/ead/sbcap/index.htm

Best Management Practices (BMP) for the Auto Salvage Yard

The following information not only presents an approach for a model auto salvage yard, but some realistic steps, which can be taken to improve an existing business.

Waste Reduction / Pollution Prevention (P2) - A Good Start

Waste is defined as any material you intend to discard. Waste is considered yours if your actions or business operations cause clean material to become contaminated and unusable for its intended, original purpose. If waste is on your property (even if someone else dumped it there or left it behind) you are responsible for it. The greatest economic and environmental benefits come from avoiding the generation of waste in the first place.

Reuse is better than disposal, but is still less desirable than waste reduction.

These ideas should help to reduce waste, free up labor, and may provide you payback on investments. Substitute less toxic products in your work place. Switch to non-chlorinated products or a designated parts washer for parts cleaning. Always ask for and review material safety data sheet (MSDS) before ordering any new product.

Biodegradable does not necessarily mean environmentally safe, or that the product is exempt from regulations. Safe products that become mixed with hazardous substances may need to be handled as hazardous waste. Use good operating practices, such as:

- Do not let liquids evaporate.
- Maintain equipment to prevent leaks and spills; monitor usage and use drip pans to minimize the use of absorbents. If you must use absorbents, consider reusable, lightweight absorbents.
- Label everything (including small spray bottles) to avoid cross contamination.
- Keep all chemicals in closed, covered or sealed containers.
- Always use funnels or pumps when transferring or dispensing chemicals.
- To help eliminate spills, place a platform or step next to storage drums so you do not have to lift drain pans above your waist.
- Seal floor drains. Do not discharge process wastewater to the ground, dry wells or septic systems.
- Recycle wastes and wastewater when possible.
- Mobile crushers should always be positioned on a concrete floor (or other impervious surface) or heavy-duty plastic sheeting (like Visqueen™).
- Containers fitted to the crusher can help capture fluids.
- Keep crusher in designated area to keep potential contamination localized.
- Vehicles should be adequately drained prior to crushing in order to minimize the volume of waste fluids. Remember to remove fuel tanks, batteries and mercury switches before crushing.
- Collect fluids that drain from the crusher reservoir and dispose of them as required.

Possible Solid &Hazardous Wastes and Air Pollution at Auto Salvage Yards

Absorbents (used)	Brake & Carburetor Cleaners	Scrap Metal
Air Bags	Catalytic Converters	Smelters
Air Emissions	Contaminated Soil	Spray Cans (Aerosols)
Antifreeze	Fuel and Fuel Filters	Storage Tanks (AST/UST)
Asbestos	Hot Tank Solutions	Sump Sludges
Auto Body Wastes	Lead Parts	Transmission Filters & Fluids
Auto Fluff	Mercury Switches	Used Oil and Oil Filters
Batteries (lead-acid)	Parts Washer Solvent	Windshield Washer Fluid
Brake Fluid	Refrigerants (CFCs)	

Remember to check with your municipal office to determine what, if any, local ordinances apply.

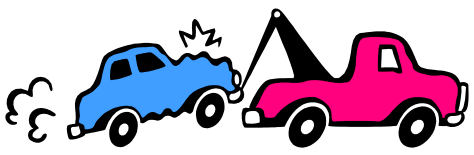
Time Management

If you watch the clock, you will see Best Management Practices (BMPs) and profitability go hand in hand. For many, the thought of fully dismantling a vehicle as soon as it enters the yard appears inefficient. Look again. You will find that investing eight hours a day on one vehicle when it first arrives on-site can yield you more in profit than a vehicle left out in the yard. Why? Consider:

- If you invest eight hours per vehicle, removing valuable parts and all fluids initially, you will save time and labor and put more profits in your pocket. The only time you will need to revisit the scrap vehicle will be to remove usable body parts, which you already inventoried. No worries about fluids leaking because you have already removed them.
- The used oil you remove can be burned in winter to provide heat for your shop in a manufactured (air pollution certified) Used Oil Burner.
- The gasoline you removed can be recycled and used to fuel your own vehicles.
- Parts inventoried and categorized make for easy access once a customer arrives. Customers can call ahead to find out if the part they need is available. Waiting time is reduced and customers appreciate the quick in and out service.
- You will likely invest 25-35 hours per car per year if, after it arrives, you simply leave it in your lot. You will need to go back to the car numerous times to remove parts when making sales. Are you certain the transmission was good? Do you remember where in your lot you left the vehicle? Was that the axle you sold last summer or is it still available?
- What about all the vehicle fluids? Leaving the fluids in the vehicles will consume your time later in clean-up labor and analytical testing costs due to spills from tipping vehicles on their sides to remove parts or from damaged or leaking lines, hoses and parts.

Careful consideration of time management may yield you more than extra hours a year in labor. You may find increased profit through better public relations, less regulatory oversight, and a safer working environment for your staff.

Best Management Practices



Above Ground Storage Containers (AST)

Roofed secondary containment (110%) structures minimize the potential amount of rainwater collected and snow damage. In order to avoid additional federal regulations, above ground used oil containers should be no larger than 660 gallons each and on-site oil storage should never exceed 1,320 gals at any one time (the equivalent of 24, 55-gallon drums).

- Label all tanks.
- Meet all Labor & Industry standards for above ground tanks.

Air Pollution - Toxic Pollutants and Volatile Organic Compounds (VOCs)

Sources of air pollution emissions include running engines, volatilization of gasoline and solvents, CFCs from air conditioning units, airborne toxins from spray cans or cutting and welding when dismantling and cleaning.

- Try to control hazardous emissions at the source: keep drums, containers and parts washers covered and turned off when not in use.
- To minimize risk from CFCs and to stay in compliance with regulations, use EPA approved equipment operated by a certified technician.
- Do not air dry solvent-soaked towels or parts. Instead, place them in a closed container.

Asbestos and Your Health

Under the Toxic Substances Control Act (TSCA) asbestos, if airborne, has been declared hazardous to human health. Brake shoes and clutches are not typically removed for reuse in vehicle recycling and are crushed with the vehicle. This may pose a significant problem at the shredder site where fine asbestos particles become airborne. Your health may also be impacted during handling.

If you remove brake shoes and clutches at your business, you have the potential to be exposed to asbestos dust. When these parts are removed from a vehicle, some dust can generally be seen. There are also many very small dust particles that cannot be seen with the naked eye. These invisible particles may be asbestos or other brake lining material. Asbestos is only one of many materials used in brake linings today. The best way to limit exposure and health damage is to use proper controls to contain brake dust and prevent its release in the air.

- Do not clean brakes or clutches with air hoses, dry brushes, wet brushes, rags, garden hose, liquid squirt bottles, solvent spray or ordinary shop vacuums.
- If you clean brakes or clutch assemblies, use a "HEPA" filter vacuum cleaner.
- Remove brake shoes or clutches using specially designed low pressure spray equipment that wets down brake or clutch dust and properly catches the run-off to help prevent asbestos from being released.
- Do not eat, smoke or drink in asbestos work areas and wash hands before eating.
- Change into clean clothes before going home. Asbestos particles can become embedded in clothing and carried into your home.

Call the Department of Health's Asbestos Program at 1-800-439-8550 for details on handling and disposal procedures. Asbestos waste should be placed in a heavy plastic bag, double tied, and stored in a leak proof, airtight container designated for asbestos waste.

Auto Fluff

After vehicles have been drained and dismantled, the bodies to be salvaged are shredded. Then, metal pieces are magnetically picked from the shredding. The residue after picking is called "fluff". If fluids are not totally drained from a vehicle before crushing, auto fluff can contain high levels of cadmium, chromium, and lead. Make sure that all fluids are drained from vehicles before crushing. Vermont has no shredding facilities.

Batteries (Lead-Acid)

Spent lead-acid batteries contain lead and corrosive acids and are considered a hazardous waste if they are not recycled or returned to a battery manufacturer.

- Batteries should be removed from vehicles as soon as the vehicles are brought on site.
- Test batteries to determine usability or resale quality.
- Leave lead battery cable ends attached to scrap batteries for recycling.
- Place cracked or leaking batteries in a closed leak-proof storage container and label container.
- Store batteries indoors whenever possible. If stored outdoors, the area must be covered to keep the batteries protected from rain and snow.
- Avoid long-term storage of batteries. Attempt to recycle batteries every 6 months.
- Place a layer of cardboard between each layer of batteries when stacking.
- Store batteries on concrete (or some other impervious surface).

Refer to the Lead Acid Battery Fact Sheet for more specific information.

Brake & Carburetor Cleaners

Keep containers of brake and carburetor cleaner closed when not in use.
Do not mix brake/carburetor cleaners with other solvents, like solvents from parts washers.

- Dispose of spent cleaners and solvents as hazardous waste.

Brake Fluid

Because brake fluid is not crude oil-based it can't be treated as used oil by burning for energy recovery. Brake fluid is typically contaminated with chlorinated solvents from brake cleaners.

- Collect brake fluid in a separate container marked, "Hazardous Waste – Brake Fluid".
- Do not dispose of brake fluid in a storm drain, septic tank, on the ground, sewer system or dumpster.

Refer to the Storing Hazardous Wastes Fact Sheet for more information.

Cleaning Solutions and Cleaners

Here are some ideas for reducing solvent-based parts washing waste:

Solvent Equipment Operation

Every time a parts washing unit is used it increases the contamination of the solvent and shortens its useful life. If only interior surfaces need to be cleaned, avoid cleaning the exterior of the part.

Remove caked-on grease and oil from parts with a scraper before washing to reduce cleaning time and solvent use.

- Clean parts in 2 or 3 stages; have a dedicated washing unit followed by a clean rinse to reduce solvent use. Two units extend the usefulness of the solvent.
- Clean carefully (limit splashing and dripping) and use drain racks to save solvent.
- Always keep solvent parts washer lids closed when not in use (to avoid evaporation).
- Cover and turn off circulating sinks to prevent evaporation when not in use.
- Appearance is not always a good indicator of the solvent's ability to clean. Monitoring change out schedules and filtering helps extend the useful life of the cleaner.

Solvent Equipment Management
Switch to an aqueous based (water/detergent) re-circulating spray cabinet for cleaning parts instead of using solvents or switch to solvents that contain non-chlorinated compounds.

- Negotiate your service contracts so that solvent change outs fit your use schedule.
- Use parts washers equipped with filters and other separation or treatment options that will keep the solvent cleaner longer.
- Consider an on-site distillation unit to recycle spent solvent.
- Use only the minimum number of parts washers necessary for your business.

Refer to the Storing Hazardous Wastes Fact Sheet for more information.

Contaminated Soil
At some facilities, soil has become contaminated by past or ongoing vehicle handling practices. The severity of the contamination will depend on the toxicity of the pollutant, total cumulative fluid loss to the ground, the soil type and spill cleanup procedures.

- Prevent spills before they happen!
- If a spill does occur, assess the potential for ground water contamination by testing soils.
- Collect the contaminated soil in appropriate containers or in on store on plastic and cover until it can be treated or transported to a waste treatment facility.
- Cover any remaining contaminated soil with a plastic cover to prevent contact with rainwater. Divert stormwater around the covered contaminated soil to prevent contamination of nearby waters.

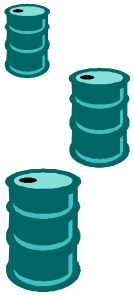
Refer to the Spills Fact Sheet for more information. Contact the DEC Hazardous Sites Section for assistance at 802-241-3888.

Dust Suppression and Prevention
Used oil cannot be used for dust suppression. Some techniques to prevent and suppress dust are:

- Vegetate or mulch areas that don't receive traffic.
- Apply gravel, stay mat, or rock or pave areas that do receive traffic.
- Clear vegetation only from areas you will be working in immediately.
- Construct natural or artificial windbreaks or windscreens.
- Apply water to reduce dust emissions.
- Reduce the speed limits on facility roads.

Empty Containers
A container is considered empty when no more than 1 inch or 3% of the container volume remains or when compressed gas pressure inside the container is equal, or nearly equal to

atmospheric pressure.



- Store empty containers in an area protected from the weather.
- Make sure all empty containers are covered, bungs are tightly in place, all labels are removed and the container is marked "Empty".
- If you are not going to reuse the empty containers on-site, recycle them.
- Store empty containers with bungs and on their sides so precipitation does not work its way in.

Fuel and Fuel Filters

Remove fuel and fuel tanks as soon as possible after the vehicle enters the facility.

- Determine if fuel is reusable or a waste fuel.
- Label fuel containers clearly. "Reusable Gas (or Fuel)" or "Hazardous Waste – Gas (or Fuel)"
- Store all fuel in closed, leak-proof VOSHA approved containers.
- Reusable fuel may be used at your facility or given away.
- Do not mix fuel with any other waste streams.
- Drain excess fuel from filters into a proper fuel container.
- Accumulate used fuel filters in a separate fireproof container marked "Hazardous Waste - Fuel Filters Only". Fuel filters should be handled as hazardous waste and disposed of as required.

Refer to the Storing Hazardous Wastes Fact Sheet for more information.

Glass

Automotive windshield glass is typically manufactured with two layers of glass and a sheet of PVC membrane in between. Because of this layering, recycling options for automotive windshield glass are limited. In addition, automotive glass has a different chemical composition from container glass. Automotive glass can be recycled into construction aggregate or other secondary markets if the PVC film can be completely removed.

- If recycling automotive glass is not an option handle it as a solid waste.

Hot Tank Solutions

Accumulate spent cleaning solutions and sludge removed from hot tanks in closed, labeled containers. Most likely the spent solution and sludge will test out as a Hazardous Waste and will need to be disposed as such.

Refer to the Storing Hazardous Wastes Fact Sheet for more information.

Incoming Cars

Inspect incoming vehicles for leaks in engines, radiators, transmissions, differentials, fuel tanks and damaged areas.

- Place drip pans under leaks to collect all fluids and plug all leaking lines.
- Remove fuel, fuel tank, refrigerants, oils, and battery as soon as possible.
- Drain all fluids from vehicles over a concrete pad (or other impervious surface) before

crushing or storing on bare ground. This includes fluids in: engines, radiators, transmissions, heater cores, brake lines, differentials, all lines and hoses, fuel tanks, air conditioning units and window washing fluid tanks. Remove and capture refrigerants.
- Remove used engines through the hood.
- Do not tip vehicles on their side, as this would allow fluids to spill on the ground.

Refer to Time Management section on page 2 for more options.

Inventory Management
Store products and wastes in closed containers in a covered area protected from rain and sunlight.

- Use a computer to track parts and waste inventories.
- Do not over order supplies.
- Use only what you need.
- Consider the convenience of using one central cleaning station.
- Train employees to use solvents and chemicals correctly, efficiently, and safely, using minimum amounts to get the job done.

Lead Parts
Lead is a well-known toxic (heavy metal) substance. The amount of lead found in a single BB or shotgun pellet is enough to contaminate an entire truckload of auto fluff, making it hazardous waste and requiring costly disposal.

- Remove lead tire weights and battery cable ends before crushing vehicles. Battery cable ends may be left on usable batteries and recycled along with the batteries.
- Store lead parts in a covered container that is strong enough to hold the weight of the lead.
- Recycle your lead parts with a metals or battery recycler.

Refer to the Recyclable Materials Fact Sheet for more information.

Material Safety Data Sheets (MSDSs)
A material safety data sheet should come with each of the chemical products you purchase from a manufacturer or vendor. They are used to relay chemical hazard information. As a business, you are required (by VOSHA) to keep MSDSs for all products used by your employees. MSDSs are valuable because they describe:

Physical and chemical properties of the hazardous substances contained in the product
Spill cleanup instructions
Health hazards and appropriate first aid
Fire and explosion hazards
Proper management and disposal practices

- MSDS files should be maintained in an easily accessible location to employees.
- If you keep MSDSs on file in a computer, a hard copy should also be available.
- Assign someone the responsibility to obtain, maintain and update MSDS information.

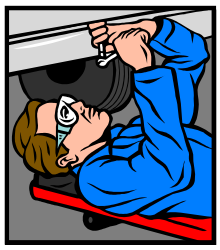
Plastics
Recycling of plastics saves 90% of the energy in its primary production energy use.

Unfortunately, plastics are made of many different materials, which are not compatible with each other; therefore they cannot be recycled as mixed plastics. For successful recycling, materials must be separated in their pure form. To date, there is no real market for plastics recovered from used automobiles. With no recycling options, auto salvaged plastics must be disposed of as a solid waste.

Refrigerants (Freon, R-12, R-134a)

One of the single largest users of refrigerants is automotive air conditioning. It accounts for over 20% of all the refrigerants used in this country. Refrigerants are stable, nonflammable and non-corrosive, but, if released into the air, refrigerants drift into the upper atmosphere will destroy the ozone layer that protects the Earth from harmful ultraviolet radiation. It is illegal to vent any refrigerant into the environment. Best management procedures include:

- Remove refrigerants from all vehicles using EPA approved recovery.
- Store refrigerant in tanks that meet federal Department of Transportation (DOT) or Underwriters Laboratory (UL) standards.
- Sell refrigerant to certified technicians or certified reclaiming facilities that will reclaim it to its original purity specifications.



Refer to the Refrigerants Fact Sheet for more information.

Scrap Metal

Catalytic converters may be removed prior to crushing and recycled for their platinum content.

- Use only reputable scrap dealers.
- Keep weight slips for scrap metal sent out to verify proper management.
- Crushed oil filters (or punctured and drained filters) can be disposed of with your scrap metal for recycling.

Refer to the Scrap Metal Fact Sheet for more information.

Shop Towels

Try not to use disposable towels. Hazardous waste management is required of towels that are not launderable and have greater than 5% petroleum on them. Cloth towels that are cleaned by a laundry service and reused are exempt.

- Do not throw dirty towels into the dumpster.
- Use an industrial laundry service.
- Do not saturate towels. If you do, wring them out and reuse the liquid.
- Keep soiled shop towels for laundering in a closed, fireproof container labeled "Used Shop Towels For Laundering".

Refer to the Shop Rags Fact Sheet for more information.

Smelting Operations

Smelting of plastic coated electrical wire and batteries to recover lead and copper causes the release of toxic gases to the atmosphere and is hazardous to your health. Check with the Air Pollution Division about permitting. Recycling options are best.

Contact the DEC Air Pollution Division for more information 802-241-3847.

Spray Cans (Aerosols)
Do not throw out partially empty spray cans of products like brake cleaner or carb cleaner since they contain ignitable, chlorinated solvents and represent hazardous waste.

- Use the entire spray can before starting another.
- If a spray can malfunctions, handle it as a hazardous waste with proper disposal or consider returning it to your supplier.
- Use refillable spray cans that do not mist the spray.
- Consider phasing out spray cans.
- Consider using non-chlorinated cans of product.

Stormwater Issues
Due to typical operations of auto salvage yards, federally mandated stormwater permits are now required. If your yard follows BMP's you may be granted an "exemption" from the regulation. Contact DEC's Water Quality Division for more information about the permitting process at 802-241-4320. *Refer to the Multi-Sector General Permit for Stormwater Discharges found at: http://www.anr.state.vt.us/dec/waterq/stormwater/htm/sw_msgp.htm*

Sump Sludges
Sludges from your sump or oil/water separator may be hazardous waste if oil spills have occurred and made there way to your drains. You may have the sludge tested at a professional laboratory to determine whether or not it is hazardous, or you may elect to save testing costs by assuming the waste is hazardous and managing it accordingly. If the sludge tests non-hazardous, you can handle it as a solid waste.

Refer to the WastewaterFact Sheet for more information.

Testing
Sometimes sending a sample of waste to a laboratory for analysis is the only way to determine if the waste is hazardous. Important tests for vehicle recyclers may include pH, volatile organics, total petroleum hydrocarbons and heavy metals. If you test a waste once, and continue to use the same industrial process, you may apply those test results with future wastes. For a copy of an independent VT laboratory list call 800-974-9559.

Tires
More than 50% of the nation's rubber supply is used to make tires. About 242 million tires are scrapped in the United States each year. Up to 80% of tires are now retreaded, recycled, or used as fuel. Tire products include:
Fuel for combustion at: power plants, tire plants, cement plants, pulp and paper mills, and more. Whole tires are used as breakwaters, playground equipment, erosion control, highway crash barriers, tires for low speed non-road farm equipment, stock feeders, and as cover weights.

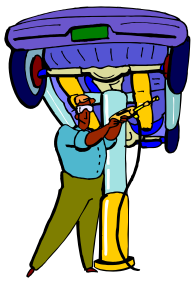
Crumb rubber for use as pavement/floor mats, vehicle mud guards, adhesives, playground gravel substitute, sludge composting, split tire products, backfill, landfill leachate collection systems

and daily cell cover, septic-system leach fields, filler in new tires, sports surfaces, railroad crossings, and belt covers.

Illegally dumped tires or tire piles can pose health hazards by providing a breeding ground for mosquito infestation and the potential for fires. In landfills, tires take up a large amount of space, harbor rodents, and collect gases.

- Store waste tires in a sunny area to allow evaporation of standing water and to kill heat-intolerant mosquito larvae that carries such diseases as the West Nile Virus.
- Transport stored waste tires regularly to prevent large accumulations.
- Tires are banned from landfill disposal by Vermont statute and may not be burned.
- Find out about recycling opportunities in your area. For a copy of the Auto Salvage Marketers list call 800-974-9559 or visit the SBCAP web page.

Refer to the Tire Fact Sheet for more information.



Transmission Fluid

Manage transmission fluids like you manage used oil.

- Do not dispose of transmission fluid in a storm drain, septic tank, on the ground, sewer system or dumpster.
- Reuse, recycle, burn for energy recovery, re-refine.

Refer to the Used Oil Fact Sheet for more information.

Underground Storage Tanks (USTs)

Make certain regulatory requirements have been met for your underground tanks (USTs). DEC's Waste Management Division can provide you information about the permitting process. Contact the UST Section at 802-241-3888.

- Label fill pipes clearly to identify contents.
- Make certain tanks meet appropriate secondary containment requirements.

Vehicle Crushers and Crusher Fluids

Fluids generated from the crushing operation are presumed to be hazardous waste unless tested and shown not to be (due to gasoline contamination, etc.).

- Vehicle crushers and drain racks should be situated on a bermed or self-contained impervious surface, preferably under a roof and protected from the weather.
- The floor surface should be sloped to contain fluids.
- Position crushers and drain racks toward the center of the surface or concrete pad rather than along the edge.
- Be certain all fluids are removed from the vehicles before going to the crusher.

Vehicle Fluids

- Use hinged lid funnels to add material to waste containers.
- Train employees how to properly manage fluids.
- Use dedicated equipment, such as drain pans, funnels, and wet vacs for different waste streams to prevent cross-contamination of wastes.
- Provide secondary containment, such as berms or dikes around storage areas to help

control the spread of a spill or release.

- Use drip pans to minimize the use of absorbents. If you must use absorbents, consider reusable, lightweight absorbents (pads, launderable rags).
- Absorbent booms can be used to reduce the amount of absorbents needed for cleanups by diking the spill immediately.
- Use the minimum amount of absorbent to complete the job.
- Store usable-used absorbent in a drum labeled "Absorbent" and reuse it until no longer absorbent. Then dispose of the spent absorbent as a "Hazardous Waste".
- Pick up used absorbent immediately after a spill or leak is cleaned up.
- Use refillable, mechanical spray cans rather than aerosol spray cans whenever possible.
- Limit aerosol can cleaner use.
- Use solvents with the lowest possible VOC content or use less hazardous substitutes for solvents such as citrus-based, water-based or detergent based cleaners whenever possible.

Refer to the Fluids Management Fact Sheet for more information.

Waste Handling and Storage Practices

Do not mix waste streams. Mixing means fewer recycling opportunities or reuse options and more expensive management costs. Mixing wastes might even cause a chemical reaction that could produce an explosion or toxic gases.

- Store protected from rain and snow and on concrete (or another impervious surface).
- Keep protected from freezing.
- Keep all containers closed except when being added to or removing.
- Label all containers with their contents to prevent mixing of waste streams.
- Keep floors clean to begin with.
- Catch leaks before they hit the floor (use drip pans, plug hose lines, etc.).
- Keep all ignitable wastes (such as gasoline) at least 50 ft from property line.

Refer to the Hazardous Waste & Storing Hazardous Waste Fact Sheets for more information.

Wastewater Management

Wastewater is water that has been used for a purpose such as engine cleaning. All process wastewater should go to a wastewater treatment plant.

- Check with your local wastewater treatment plant for permission to discharge.
- Check building plans to find out where your drains lead.
- Use either an on-site holding tank for wash wastewater or have a connection to a municipal sewer and wastewater treatment facility with the proper permitting.

Refer to the Wastewater Fact Sheet for more information.

Windshield Washing Fluid

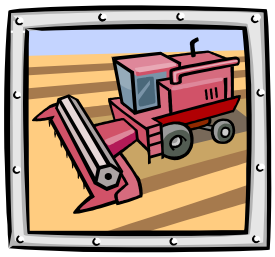
Window-washing fluid is mainly alcohol, water and detergent.

- Collect and reuse window-washing fluid in recycling facility or employee vehicles.
- Drain all wiper fluid during dismantling and before vehicle is stored in yard.
- Sell or give away reclaimed window washing fluid to customers.

- Store window-washing fluid in covered containers on a concrete (impermeable) surface.
- Label containers properly.

Yard Maintenance

Even in operations that dismantle vehicles, there will be a yard area that contains a core pile, auto shells, etc. This area should be well maintained. Weed growth should be kept under control. The ideal situation would be the installation of an engineering fabric (often referred to as Filter Fabric), followed by gravel. This would keep vegetative growth under control as well as keeping the area clean by reducing dust and mud problems. This would allow for easier access and inventory control. Engineering fabrics are inexpensive and easy to install and can provide a cleaner working environment. Existing yards can easily be retrofitted.



For more information on yard aesthetics, fencing and licensing, contact the VT Department of Motor Vehicles at 802-828-2156. Or visit their web site at:
http://www.dmv.state.vt.us/Enforcement/EnforcementOverview.htm

Environmental Management Fact Sheets for Auto Salvage Yards:

Air Bags	Oil Filters	Solvents
Antifreeze	Oily Wastes	Spills
Batteries	Recyclables	Storing Hazardous Waste
Fluids Management	Refrigerant (Freon)	Stormwater
Fuel System Wastes	Scrap Metal	Used Oil
Hazardous Waste	Scrap Tires	Used Oil Burning
Mercury Devices	Shop Rags	Wastewater

EAD
ENVIRONMENTAL
ASSISTANCE
DIVISION

Contact the VT DEC Small Business Compliance Assistance Program for more information 1-800-974-9559 / 802-241-3745
www.anr.state.vt.us/dec/ead/sbcap/index.htm

Best Management Practices for "Fluids" in the Salvage Yard

When working with any kind of vehicle fluids, please consider the following to help reduce waste and keep hazardous substances out of the environment.

If You	Consider The Risk	Best Management Practices
Wash (steam clean) engines or parts	The resulting wastewater is likely to be hazardous from greases, oils and solvents.	Only wash engine and parts if absolutely necessary. Keep wastewater separate and evaluate it.
Use aerosol solvents or other degreasers	These chemicals can compound waste problems by contaminating wash water, sludge, or bare ground with hazardous materials.	Put parts to be cleaned on a drip pan, not the floor. Use a filtered parts washer to clean engine parts and manage the solvent as a hazardous waste. Use non-hazardous aerosols.
Drain vehicle fluids (oil, brake fluid, antifreeze, etc.)	These chemicals can compound waste problems by contaminating wash water, sludge, or bare ground with hazardous waste.	Use drip pans under vehicles. Recycle used oils and other fluids. Drain radiators. Recycle waste antifreeze.
Clean shop floors	Hosing the floors down with water or solvent can flush contaminants into the floor drains, contaminating separator sludge's or possibly causing runoff to the ground.	Keep floors clean to avoid the need to wash. Use dry sweeping absorbents. Reuse them as long as they remain absorbent. Use a designated holding tank to hold wash water if necessary.
Store solvents	Spilled or leaked solvents and their vapors are dangerous and can contaminate the ground soils or your wastewater system.	Keep containers closed at all times when not in use. Store solvents in a Flammables Cabinet. Do not use solvents near floor drains or on bare ground.
Store waste vehicle fluids in a room with a floor drain or outside.	Many materials used in vehicles can be dangerous and can contaminate the ground soils or your wastewater system.	Keep waste containers in a separate, covered storage area with no floor drain. Install a curb, berm or good secondary containment system to contain any wastes that may leak from storage containers. Inspect containers for leaks daily or at least, weekly.
Accidentally spilled material	Many materials used in vehicles can be dangerous and can contaminate bare ground or your wastewater system.	Clean up or contain spills immediately. Notify VT Emergency Management at **800-641-5005** (24 hrs/day) if the spill is not contained and/or 2 gallons or more has been spilled. Have the materials needed for spill cleanup on hand and train all employees how to use them.

Interesting Facts about the Auto Salvage Industry

The VT auto salvage industry has been operating for over 75 years. It provides a valuable role in recycling scrap metal and junked automobiles. There are about 42,000 cars scrapped each year in Vermont. At this rate, salvage yards are responsible for processing about 34,000 tons of scrap steel each year.

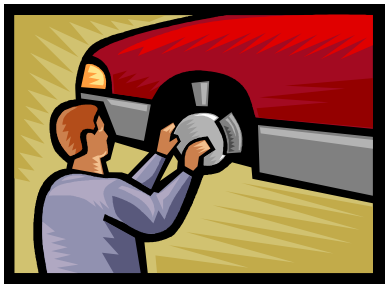
Waste Fluids
- Fuels
- Antifreeze
- Refrigerant/Freon/CFCs
- Used motor oil
- Parts cleaning solvents
- Mercury Switches
- Brake/Steering/Transmission
- Windshield Washer
- Stormwater runoff

Other Wastes
- Batteries
- Air Bag cartridges
- Tires/rubber
- Glass
- Plastics
- Metals

According to the Ontario Automotive Recyclers Association (OARA), the average volume of operating fluids in a car is approximately **5 gallons**, and is broken down accordingly:

Fuel	2.70 gal
Engine Oil	0.96 gal
Coolant	0.73 gal
Transmission Oil	0.34 gal
Steering Gear Oil	0.20 gal

OARA considers these numbers to be on the conservative side. OARA members compared notes and believe the total volume of fluid is closer to **10 gallons per vehicle**. The discrepancy may stem from the origins of the vehicle. The lower fluid's estimate was generated from a facility that accepted vehicles toward the end of their life. End of life vehicles tend to have lower levels of fluids, as an owner would not fill up their car prior to delivering it to a salvage yard. The higher figure generated by the OARA takes into account accident vehicles. These vehicles are operating with fluids at optimal levels resulting in the higher figures. Even though OARA's fluid estimates may be conservative they are helpful in estimating a salvage yard's waste generation rates.



The primary driving force for the VT Auto Salvage Outreach Program was the Central Vermont Solid Waste Management District. The program was made possible by two Supplemental Environmental Projects (enforcement case settlements) and involved the cooperative work of the VT DEC Environmental Assistance Division and the network of VT Solid Waste Districts and Alliances.

Many Thanks to all those who have shared their knowledge in order to develop this informational program, especially:

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For their support, expertise, knowledge and willingness to share information and their time of the Auto Salvage industry with all of us.
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Contact the VT DEC Small Business Compliance Assistance Program for more information 1-800-974-9559 / 802-241-3745
www.anr.state.vt.us/dec/ead/sbcap/index.htm