

INDUSTRIAL STORMWATER

FACT SHEET SERIES

Sector M: Automobile Salvage Yards



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What is the NPDES stormwater permitting program for industrial activity?

Activities, such as material handling and storage, equipment maintenance and cleaning, industrial processing or other operations that occur at industrial facilities are often exposed to stormwater. The runoff from these areas may discharge pollutants directly into nearby waterbodies or indirectly via storm sewer systems, thereby degrading water quality.

In 1990, the U.S. Environmental Protection Agency (EPA) developed permitting regulations under the National Pollutant Discharge Elimination System (NPDES) to control stormwater discharges associated with eleven categories of industrial activity. As a result, NPDES permitting authorities, which may be either EPA or a state environmental agency, issue stormwater permits to control runoff from these industrial facilities.

What types of industrial facilities are required to obtain permit coverage?

This fact sheet specifically discusses stormwater discharges from automobile salvage yards as defined by Standard Industrial Classification (SIC) and includes battery reclaimers, salvage yards, and automobile recyclers (Primary SIC 5015). Facilities and products in this group fall under the following categories, all of which require coverage under an industrial stormwater permit:

- ◆ Activities related to dismantling of used motor vehicles for the purpose of selling parts
- ◆ Wholesale or retail distribution of used motor vehicle parts

What does an industrial stormwater permit require?

Common requirements for coverage under an industrial stormwater permit include development of a written stormwater pollution prevention plan (SWPPP), implementation of control measures, and submittal of a request for permit coverage, usually referred to as the Notice of Intent or NOI. The SWPPP is a written assessment of potential sources of pollutants in stormwater runoff and control measures that will be implemented at your facility to minimize the discharge of these pollutants in runoff from the site. These control measures include site-specific best management practices (BMPs), maintenance plans, inspections, employee training, and reporting. The procedures detailed in the SWPPP must be implemented by the facility and updated as necessary, with a copy of the SWPPP kept on-site. The industrial stormwater permit also requires collection of visual, analytical, and/or compliance monitoring data to determine the effectiveness of implemented BMPs. For more information on EPA's industrial stormwater permit and links to State stormwater permits, go to www.epa.gov/npdes/stormwater and click on "Industrial Activity."

What pollutants are associated with my facility's activities?

Pollutants conveyed in stormwater discharges from automobile salvage yards will vary. There are a number of factors that influence to what extent industrial activities and significant materials can affect water quality.

- ◆ Geographic location
- ◆ Topography
- ◆ Hydrogeology
- ◆ Extent of impervious surfaces (i.e., concrete or asphalt)
- ◆ Type of ground cover (e.g., vegetation, crushed stone, or dirt)
- ◆ Outdoor activities (e.g., material storage, loading/unloading, vehicle maintenance)
- ◆ Size of the operation
- ◆ Type, duration, and intensity of precipitation events

The activities, pollutant sources, and pollutants detailed in Table 1 are commonly found at automobile salvage yards.

Table 1. Common Activities, Pollutant Sources, and Associated Pollutants at Automobile Salvage Yards

Activity	Pollutant Source	Pollutant
Vehicle Dismantling	Oil, anti-freeze, batteries, gasoline, diesel fuel, hydraulic fluids, electrical switches	Oil and grease, ethylene glycol, heavy metals, mercury
Used Parts Storage	Batteries, chrome bumpers, wheel balance weights, tires, rims, filters, radiators, catalytic converters, engine blocks, hub caps, doors, drivelines, galvanized metals, mufflers	Sulfuric acid, galvanized metals, oil and grease, heavy metals, petroleum hydrocarbons, total suspended solids (TSS)
Outdoor Vehicle and Equipment Storage	Leaking engines, chipping/corroding bumpers, chipping paint, galvanized metal	Oil and grease, arsenic, organics, heavy metals, total suspended solids (TSS)
Vehicle and Equipment Maintenance	Parts cleaning	Chlorinated solvents, oil and grease, heavy metals, acid/alkaline wastes
	Waste disposal of greasy rags, oil filters, air filters, batteries, hydraulic fluids, transmission fluids, radiator fluids, degreasers	Oil, heavy metals, chlorinated solvents, acid/alkaline wastes oil, heavy metals, chlorinated solvents, acid/alkaline wastes, ethylene glycol
	Spills of oil, degreasers, hydraulic fluids, transmission fluid, and radiator fluids	Oil, arsenic, heavy metals, organics, chlorinated solvents, ethylene glycol
	Fluids replacement, including oil, hydraulic fluids, transmission fluid, and radiator fluids	Oil, arsenic, heavy metals, organics, chlorinated solvents, ethylene glycol
Vehicle, Equipment, and Parts Washing Areas	Washing and steam cleaning waters	Oil and grease, detergents, heavy metals, chlorinated solvents, phosphorus, salts, suspended solids
Liquid Storage in Above Ground Storage Tanks	External corrosion and structural failure	Fuel, oil and grease, heavy metals, materials being stored
	Installation problems	
	Spills and overfills due to operator error	
Illicit Connection to Storm Sewer	Sanitary water	Bacteria, biochemical oxygen demand (BOD), suspended solids
	Floor drains	Oil and grease, heavy metals, chlorinated solvents, fuel, ethylene glycol
	Vehicle washwaters	Oil and grease, detergents, metals, chlorinated solvents, phosphorus, suspended solids
	Radiator flushing wastewater	Ethylene glycol
	Leaking underground storage tanks	Materials stored or previously stored

What BMPs can be used to minimize contact between stormwater and potential pollutants at my facility?

A variety of BMP options may be applicable to eliminate or minimize the presence of pollutants in stormwater discharges from automobile salvage yards. You will likely need to implement a combination or suite of BMPs to address stormwater runoff at your facility. Your first consideration should be for pollution prevention BMPs, which are designed to prevent or minimize pollutants from entering stormwater runoff and/or reduce the volume of stormwater requiring management. Prevention BMPs can include regular cleanup, collection and containment of debris in storage areas, and other housekeeping practices, spill control, and employee training. It may also be necessary to implement treatment BMPs, which are engineered structures, intended to treat stormwater runoff and/or mitigate the effects of increased stormwater runoff peak rate, volume, and velocity. Treatment BMPs are generally more expensive to install and maintain and include oil-water separators, wet ponds, and proprietary filter devices.

The management practices discussed herein are well suited mechanisms to prevent or control the contamination of stormwater discharges associated with automobile salvage yards. In general, it is important to develop a stormwater management policy statement, review the policy with employees, and keep it posted. Additionally, identifying weaknesses in current facility practices will aid the permittee in determining appropriate BMPs that will achieve a reduction in pollutant loadings.

All facilities should implement BMPs in the following areas of the site:

- ◆ Vehicle dismantling and maintenance areas
- ◆ Vehicle, parts, and equipment storage areas
- ◆ Material storage areas
- ◆ Vehicle, parts, and equipment cleaning areas

Mercury switch used in vehicle. Be aware: specific permit requirements may vary according to permitting authority so it is important to reference the requirements applicable of the state in which your facility is located. For instance, many states are now addressing the issue of mercury switch removal to prevent mercury releases that occur from automobile recycling. Mercury switches have been used until recently for hood, trunk, or door lights.

BMPs must be selected and implemented to address the following:

Good Housekeeping Practices

Good housekeeping is a practical, cost-effective way to maintain a clean and orderly facility to prevent potential pollution sources from coming into contact with stormwater. It includes establishing protocols to reduce the possibility of mishandling materials or equipment and training employees in good housekeeping techniques. Common areas where good housekeeping practices should be followed include trash containers and adjacent areas, material storage areas, vehicle and equipment maintenance areas, and loading docks. Good housekeeping practices must include a schedule for regular pickup and disposal of garbage and waste materials and routine inspections of drums, tanks, and containers for leaks and structural conditions. Practices also include containing and covering garbage, waste materials, and debris. Involving employees in routine monitoring of housekeeping practices has proven to be an effective means of ensuring the continued implementation of these measures.

Minimizing Exposure

Where feasible, minimizing exposure of potential pollutant sources to precipitation is an important control option. Minimizing exposure prevents pollutants, including debris, from coming into contact with precipitation and can reduce the need for BMPs to treat contaminated stormwater runoff. It can also prevent debris from being picked up by stormwater and carried into drains and surface waters. Examples of BMPs for exposure minimization include covering materials or activities with temporary

structures (e.g., tarps) when wet weather is expected or moving materials or activities to existing or new permanent structures (e.g., buildings, silos, sheds). Even the simple practice of keeping a dumpster lid closed can be a very effective pollution prevention measure.

Erosion and Sediment Control

BMPs must be selected and implemented to limit erosion on areas of your site that, due to topography, activities, soils, cover, materials, or other factors are likely to experience erosion. Erosion control BMPs such as seeding, mulching, and sodding prevent soil from becoming dislodged and should be considered first. Sediment control BMPs such as silt fences, sediment ponds, and stabilized entrances trap sediment after it has eroded. Sediment control BMPs should be used to back-up erosion control BMPs.

Management of Runoff

Your SWPPP must contain a narrative evaluation of the appropriateness of stormwater management practices that divert, infiltrate, reuse, or otherwise manage stormwater runoff so as to reduce the discharge of pollutants. Appropriate measures are highly site-specific, but may include, among others, vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet retention measures.

A combination of preventive and treatment BMPs will yield the most effective stormwater management for minimizing the offsite discharge of pollutants via stormwater runoff. Though not specifically outlined in this fact sheet, BMPs must also address preventive maintenance records or logbooks, regular facility inspections, spill prevention and response, and employee training.

Specific runoff management practices for automobile salvage facilities include the installation/use of:

- ◆ Berms or drainage ditches on the property line (to prevent run-on from neighboring properties)
- ◆ Berms for uncovered outdoor storage of soiled parts, engine blocks, and above-ground liquid storage
- ◆ Detention ponds
- ◆ Filtering devices and oil/water separators

All BMPs require regular maintenance to function as intended. Some management measures have simple maintenance requirements, others are quite involved. You must regularly inspect all BMPs to ensure they are operating properly, including during runoff events. As soon as a problem is found, action to resolve it should be initiated immediately.

Implement BMPs, such as those listed below in Table 2 for the control of pollutants at automobile salvage yards, to minimize and prevent the discharge of pollutants in stormwater. Identifying weaknesses in current facility practices will aid the permittee in determining appropriate BMPs that will achieve a reduction in pollutant loadings. BMPs listed in Table 2 are broadly applicable to automobile salvage yards; however, this is not a complete list and you are recommended to consult with regulatory agencies or a stormwater engineer/consultant to identify appropriate BMPs for your facility.

Table 2. BMPs for Potential Pollutant Sources at Automobile Salvage Yards

Activity	BMPs
Dismantling and vehicle maintenance	Minimize exposure <input type="checkbox"/> Installation of a consolidated processing area, including a covered and bermed impermeable concrete surface equipped with a drain, where all fluids are drained. Fluid and Parts Removal <input type="checkbox"/> Drain all fluids from vehicles upon arrival at the site. Segregate the fluids and properly store or dispose of them. <input type="checkbox"/> Drain oil filters (and all vehicle parts) before disposal or recycling.

Table 2. BMPs for Potential Pollutant Sources at Automobile Salvage Yards (continued)

Activity	BMPs
Dismantling and vehicle maintenance (continued)	<p>Fluid and Parts Removal (continued)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Inspect vehicles for leaks as soon as possible once they arrive on-site. Inspect vehicles quarterly for signs of leakage. Check for unwanted material that could have been placed in the vehicle. <input type="checkbox"/> When pulling parts from vehicles in the yard, employ a catch sled or tray to recover the majority of fluids which will be released. Place drip pans, large plastic sheets, or canvas under vehicles or equipment during maintenance and dismantling activities. Where drip pans are used, they should not be left unattended to prevent accidental spills. <input type="checkbox"/> Engine oil should be drained and stored in clearly labeled tanks or containers. Tanks and containers must be kept in good operating condition, free of any visible spills or leaks, structural damage, or deterioration. <input type="checkbox"/> Remove battery as soon as feasible after vehicle enters the facility. <input type="checkbox"/> Promptly transfer used fluids to the proper container. <input type="checkbox"/> Empty and clean drip pans and containers; do not leave full drip pans or other open containers around the shop. <input type="checkbox"/> Remove all mercury switches as soon as possible making sure not to puncture the mercury container during removal. Ship switches to End of Life Vehicle Solutions (ELVS). <p>Vehicle Processing</p> <ul style="list-style-type: none"> <input type="checkbox"/> Maintain an organized inventory of materials used in the maintenance shop. <input type="checkbox"/> Designate one person to keep track of parts in the yard. As soon as a hulk is salvaged to its minimum extent, it should be processed for shredding to minimize the dripping of fluids and clutter in the yard. <p>Material Storage</p> <ul style="list-style-type: none"> <input type="checkbox"/> Nonhazardous substances that are contaminated with a hazardous substance are considered a hazardous substance. <input type="checkbox"/> Store cracked batteries in a nonleaking secondary container. <input type="checkbox"/> Keep waste streams separate (e.g., waste oil and mineral spirits). <p>Recycling and Disposal</p> <ul style="list-style-type: none"> <input type="checkbox"/> Recycle anti-freeze, gasoline, used oil, mineral spirits, windshield washer fluid, and solvents. <input type="checkbox"/> Label and track the recycling of waste material (e.g., used oil, spent solvents, and batteries). <input type="checkbox"/> Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly. <p>Discharges</p> <ul style="list-style-type: none"> <input type="checkbox"/> Know where your sumps and drains discharge to. Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets. <input type="checkbox"/> Plug floor drains that are connected to the storm or sanitary sewer. If necessary, install a sump that is pumped regularly. <input type="checkbox"/> Screen out sludges and solids before they reach the waste sump. Use an absorbent pad around the perimeter of sumps to prevent unwanted hazardous materials from entering. <input type="checkbox"/> Prohibit the practice of hosing down the shop floor, using dry cleanup methods, and/or collecting the stormwater runoff from the maintenance area and providing treatment. <input type="checkbox"/> Treat stormwater discharges with devices such as oil-water separators.
Outdoor vehicle, equipment, and parts storage	<p>Minimizing Exposure</p> <ul style="list-style-type: none"> <input type="checkbox"/> Cover all storage areas with a permanent cover (e.g., roofs) or temporary cover (e.g., canvas tarps). <input type="checkbox"/> Store lead parts in a covered container that is capable of handling the excessive weight of lead. If storing lead tire weights with batteries, make sure weights are not placed under batteries or allowed to roll around as that could puncture batteries.

Table 2. BMPs for Potential Pollutant Sources at Automobile Salvage Yards (continued)

Activity	BMPs
Outdoor vehicle, equipment, and parts storage (continued)	<p>Runoff Minimization</p> <ul style="list-style-type: none"> <input type="checkbox"/> Install curbing, berms, or dikes around storage areas. <input type="checkbox"/> Install berms or drainage ditches on the property line. <input type="checkbox"/> Install berms for uncovered outdoor storage of oily parts, engine blocks, and above ground liquid storage. <input type="checkbox"/> Install filtering devices and oil/water separators. <input type="checkbox"/> Use drip pans, large sheets of plastic, or canvas under all vehicles and equipment waiting for and during maintenance. <input type="checkbox"/> Store mercury switches in covered, leak-proof containers in a way that prevents the glass capsule from breaking. (Manage mercury switches as hazardous waste. Containers should be labeled with "Hazardous Waste - Spent Mercury Switches") <input type="checkbox"/> Use secondary containment for stored liquids such as oil, gas, and antifreeze, as well as for lead acid batteries. <p>Good Housekeeping</p> <ul style="list-style-type: none"> <input type="checkbox"/> Tank storage should be secured and locked. <input type="checkbox"/> Do not stockpile old tires as they are both a fire hazard and a breeding ground for mosquitoes and rodents. Use indoor tire racks. <input type="checkbox"/> Confine storage of parts, equipment, and vehicles to designated areas. <input type="checkbox"/> Vehicles of similar make and model should be located in a common area. Vehicles whose parts have higher demand should be in a common area and easily accessible. <input type="checkbox"/> Repair malfunctioning equipment that is responsible for any leak or spill as soon as possible. <input type="checkbox"/> Store batteries on impervious surfaces. Store batteries inside on a pallet or outside in a leak proof container. Curb, dike, or berm this area.
Vehicle, equipment, and parts washing areas	<ul style="list-style-type: none"> <input type="checkbox"/> Designate an area for cleaning activities. <input type="checkbox"/> Perform all parts cleaning operations indoors or cover and berm outside cleaning areas. <input type="checkbox"/> Clean parts using minimal amounts of solvents or detergents. <input type="checkbox"/> Recycle and reuse cleaning fluids where practical. <input type="checkbox"/> Use phosphate-free biodegradable detergents. <input type="checkbox"/> Use detergent-based or water-based cleaning systems in place of organic solvent degreasers. <input type="checkbox"/> Contain steam cleaning washwaters or discharge under an applicable NPDES permit. <input type="checkbox"/> Ensure that washwaters drain well. <input type="checkbox"/> Inspect cleaning area regularly. <input type="checkbox"/> Install curbing, berms, or dikes around cleaning areas. <input type="checkbox"/> Remove or deploy airbags prior to crushing or other maintenance activities. <input type="checkbox"/> Be certain all fluids have been drained from vehicle prior to crushing. <input type="checkbox"/> Fluid should be collected in a covered container, tested, and disposed of accordingly.
Vehicle crushing activities	<ul style="list-style-type: none"> <input type="checkbox"/> Capture crusher fluids to prevent spillage. Collect this mixture of fluids in a spill-proof covered container and dispose of it properly. It should not be allowed to drain onto the ground. Keep the drain within the crusher clean so that the fluids do not collect and overflow from the crusher onto the ground.

Table 2. BMPs for Potential Pollutant Sources at Automobile Salvage Yards (continued)

Activity	BMPs
Vehicle crushing activities (continued)	<ul style="list-style-type: none"> <input type="checkbox"/> Installation of an engineering fabric, such as geotextiles, followed by gravel, or a bermed impermeable concrete surface would be ideal as a foundation under the crusher. <input type="checkbox"/> Develop a preventative maintenance program that involves timely inspections and/or maintenance of the crusher and facility equipment and vehicles. <input type="checkbox"/> Keep the crusher equipment clean.
Automotive wastes	<ul style="list-style-type: none"> <input type="checkbox"/> Fuel - Drain fuel tanks, using air or hand pumps, into double-walled storage tanks. "Good" fuels can be reused on-site; "bad" fuels must be disposed of. <input type="checkbox"/> Antifreeze - Reclaim and re-use, if possible. <input type="checkbox"/> Freon (CFCs) - Voluntarily recapture, in anticipation of new regulations. <input type="checkbox"/> Used motor oil - Drain and store in double-walled tanks. Re-use on-site or send offsite for refining/fuel blending. Accepted practice to leave oil in the engine during storage. Oil filters should drain for 24-hours. Empty filters return to vehicle for scrap metal reclamation. <input type="checkbox"/> Other fluids and oils - Drain as completely as mechanically possible. Do not burn used oil unless approved. <input type="checkbox"/> Asbestos Brake Shoes and Clutches - If handled, should be wetted down to prevent asbestos particulates from becoming airborne. <input type="checkbox"/> Mercury switches - Remove promptly and avoid breakage. Store as hazardous waste. <input type="checkbox"/> Do not use vehicle fluids, oil, or fuels for dust or weed control.
Liquid storage in above ground containers	<ul style="list-style-type: none"> <input type="checkbox"/> Maintain good integrity of all storage containers. <input type="checkbox"/> Install safeguards (such as diking, berming, or permanent secondary containment) against accidental releases at the storage area. <input type="checkbox"/> Valves on permanent secondary containment should be kept in the "off" position and locked at all times, except when collected water is removed. <input type="checkbox"/> Inspect storage tanks to detect potential leaks and perform preventive maintenance. <input type="checkbox"/> Inspect piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks.
Illicit connection to storm sewer	<ul style="list-style-type: none"> <input type="checkbox"/> Plug all floor drains if it is unknown whether the connection is to storm sewer or sanitary sewer systems. Alternatively, install a sump that is pumped regularly. <input type="checkbox"/> Perform dye testing to determine if interconnections exist between sanitary water system and storm sewer system. <input type="checkbox"/> Update facility schematics to accurately reflect all plumbing connections. <input type="checkbox"/> Install a safeguard against vehicle washwaters and parts cleaning waters entering the storm sewer unless permitted. <input type="checkbox"/> Maintain and inspect the integrity of all underground storage tanks; replace when necessary.

What if activities and materials at my facility are not exposed to precipitation?

The industrial stormwater program requires permit coverage for a number of specified types of industrial activities. However, when a facility is able to prevent the exposure of ALL relevant activities and materials to precipitation, it may be eligible to claim no exposure and qualify for a waiver from permit coverage.

If you are regulated under the industrial permitting program, you must either obtain permit coverage or submit a no exposure certification form, if available. Check with your permitting authority for additional information as not every permitting authority program provides no exposure exemptions.

Where do I get more information?

For additional information on the industrial stormwater program see www.epa.gov/npdes/stormwater/msgp.

A list of names and telephone numbers for each EPA Region or state NPDES permitting authority can be found at www.epa.gov/npdes/stormwatercontacts.

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