(2) Material Processing. The type of processes employed at a particular facility depends on the type of recyclable and waste material. Typical processes include: torch cutting, shredding, baling, briquetting, wire stripping and chopping, and compacting. Processes such as shredding and shearing reduce the bulk size of recyclable scrap and waste into a size that is more easily transportable and which allows separation into uniform grades based on manufacturer specifications. Processes such as shredding of automotive bodies include a means of segregating materials into their ferrous and nonferrous fractions.

Process equipment at scrap recycling and waste recycling facilities are also potential sources of pollutants in storm water runoff. The sources of concern will be discussed separately. Scrap process equipment such as shearers are often actuated by a hydraulic system. Components such as hydraulic reservoirs, hydraulic pumps, motors, cylinders, control valves, accumulators, filters, and fittings are prone to leaking hydraulic fluid. Some hydraulic machinery also require frequent lubrication of cutting and wear surfaces. Storm water runoff exposure to hydraulic fluids and other lubricants is very likely unless adequate source control measures such as good housekeeping, preventive maintenance, diversion and/or containment are provided.

Stationary process equipment also produce a substantial amount of residual particulate material that tends to accumulate on and around the equipment, particularly rotating machinery, moving parts, bearings, conveyors and at the output of the equipment, e.g., storage containers. Particulate material that accumulates can become a source of contamination if it comes in contact with both precipitation and storm water runoff. Other sources of residual particulate and waste material include air pollution equipment, material handling equipment and processing equipment. In the case of shredding equipment, there are typically three (3) separate material streams produced. Shredded material is ultimately separated into its ferrous and nonferrous fractions, and a third stream referred to as fluff. The fluff material consists of a heterogeneous mix of materials including, but not limited to, small metal fragments, plastics, rubber, wood and textiles. After the material exits the shredder (hammermill), it typically enters an air classification system that separates the lightweight fraction, e.g., particulates, from the more dense fraction. The ferrous metal fraction is then separated from the nonferrous fraction and fluff by the use of a magnetic separator (typically a belt- or drum-type magnetic separator). The separated material may be collected in a hopper or it may accumulate on the ground. If recyclable and nonrecyclable waste material is allowed to accumulate on the ground, a greater potential exists for this material to come in contact with either precipitation or storm water runoff.

The scrap and recycling industry uses a diversity of processes to reclaim and recycle materials that can contribute pollutants to storm water runoff. The following table presents a list of typical scrap equipment operations which are potential pollutant sources.

TABLE N-3.—TYPICAL PROCESS AND EQUIPMENT OPERATIONS THAT ARE LIKELY SOURCES OF POLLUTANTS¹

Activity	Potential sources	Pollutants of concern
Air Pollution Equipment (including incinerators, furnaces, wet scrubbers, filter houses, bag houses).	Normal equipment operations that include the collection and disposal of filter bag material and ash, process wastewater from scrubbers, accumulation of particulate matter around leaking joint connections, malfunctioning pumps and motors, e.g., leaking gaskets, seals or pipe connections, leaking oil-filled transformer casings.	Hydraulic fluids, oils, fuels, grease and other lubricants, accumulated particulate matter, chemical additives, PCBs from oil-filled electrical equipment.
Combustion Engines	Spills and/or leaks from fueling tanks, spills/ leaks from oil/hydraulic fuel reservoirs, faulty/leaking hose connections, worn gas- kets, leaking transmission crankcases and brake systems (if applicable), leaking bat- tery casings and/or corroded terminals.	Accumulated particulate matter, oil/lubricants, fuel (gas/diesel), fuel additives, antifreeze (ethylene glycol), battery acid, products of incomplete combustion.
Material Handling Systems (forklifts, cranes, conveyors).	Normal operations including spills and leaks from fuel tanks, hydraulic and oil reservoirs due to malfunction parts, e.g., worn gaskets and parts, leaking hose connections, and faulty seals. Damaged or faulty electrical switches (mercury filled) Damaged or leak- ing battery casings, including exposed cor- roded battery terminals. Damaged or worn bearing housings.	Hydraulic fluids, oils, fuels and fuel additives, grease and other lubricants, accumulated particulate matter, chemical additives, mer- cury, lead, battery fluids.
Stationary Scrap Processing Facilities (balers, briquetters, shredders, shearers, compactors, engine block/cast iron breakers, wire chop- per, turnings crusher).	Normal equipment operations including leaks from hydraulic reservoirs, hose and fitting connections, worn gaskets, spills or leaks from fuel tanks, particulates/residue from scrap processing, malfunctioning pumps and motors, e.g., leaking gaskets, seals or pipe connections, leaking oil-filled trans- former casings.	Heavy metals, e.g., zinc, copper, lead, cad- mium, chromium, hydraulic fluids.
Hydraulic equipment and systems, balers/ briquetter, shredders, shearers, compactors, engine block/cast iron breaker, wire chopper, turnings crusher.	Particulate/residue from material processing, spills and/or leaks from fueling tanks, spills/ leaks from oil/hydraulic fuel reservoirs, faulty/leaking hose connections/fittings, leaking gaskets.	Hydraulic fluids/oils, lubricants, particulate matter from combustion engines, PCBs (oil- filled electrical equipment components), heavy metals (nonferrous, ferrous).