

Guidebook for the Vehicle Dismantling and Recycling Industry Environmental Planning Regulation



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Limitation of Liability and User's Responsibility

The primary purpose of this guidance document for the vehicle dismantling and recycling industry is to highlight the requirements of the Vehicle Dismantling and Recycling Industry Environmental Planning Regulation with regard to the development of environmental management plans.

While every effort has been made by the authors and the British Columbia Ministry of Environment (MOE) to ensure the accuracy and completeness of these materials, these materials should not be considered to be the final word in the areas of practice they cover. The qualified professional must use his/her own professional expertise and judgment to ensure that any plans or reports prepared for clients meet the requirements of the regulation and all applicable regulations under the *Environmental Management Act*. It is the responsibility of the discharger's responsibility to comply with all applicable regulations.

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Section 1: Background Information

1.1 Vehicle Dismantling and Recycling Industry Environmental Planning Regulation (VDRIEPR)

- The vehicle dismantling and recycling industry is required to comply with a number of regulations under the *Environmental Management Act* (EMA).
- The VDRIEPR, which was enacted on September 1, 2007 requires individual operators or industry associations (acting on behalf of their members) to develop environmental management plans that demonstrate how they will comply with existing regulations under EMA. All operators that dismantle 5 or more wet vehicles in a calendar year must register with the Ministry of Environment by September 1, 2008. The registration must state that their operation has an environmental management plan in place.
- The regulation also requires a system of monitoring and reporting to keep operators in compliance with their plans.

1.2 Purpose of the Guidebook

The Ministry of Environment prepared this guidebook to assist vehicle dismantlers and recyclers in meeting the requirements of the regulation.

Steel recyclers that process larger quantities of hazardous wastes from end-of-life vehicles are subject to sections of the Hazardous Waste Regulation (HWR) not covered in this guidance document. However, this does not preclude these larger scale operators from having to comply with the requirements.

1.3 How to Use the Guidebook

The guidebook is divided into seven sections. Section 1 provides background information on the VDRIEPR and an introduction to the purpose of this guidebook. Section 2 summarizes the requirements of the regulations in “plain language”. Sections 3, and 4 summarize the legal requirements, compliance requirements and best management practices for hazardous liquids, solids and refrigerants respectively. Section 5 summarizes best management practices for work areas at the site. Section 6 provides additional background information related to environmental programs for vehicle dismantlers in other jurisdictions.

Vehicle dismantlers can use this guidebook as a tool to aid with developing environmental management plans and monitoring check lists. The guidebook does not address some of the zoning and bylaw issues which are the responsibility of local

governments. Vehicle dismantlers are encouraged to contact their local governments to inquire about any specific regional requirements.

Section 2: Regulatory Requirements

2.1 Definitions

There are a variety of terms that are used in this guidebook and in the regulations that vehicle dismantlers must know. The definitions are:

“Approved Person” (*as in the Ozone Depleting Substances and Other Halocarbons Regulation*) means a person who:

- (a) holds appropriate trade credentials or is an indentured trainee or apprentice in compliance with the *Industry Training Authority Act* or, if that *Act* is not applicable, is qualified in the appropriate trade sector by
 - (i) having successfully completed a recognized trade school program, or
 - (ii) having at least one year of supervised practical service experience,
- (b) has successfully completed an environmental awareness course approved by Environment Canada and the Ministry of Water, Land and Air Protection, and
- (c) has, if servicing motor vehicle air conditioning systems on or after October 1, 1997, successfully completed a motor vehicle air conditioning course approved by the Ministry of Water, Land and Air Protection unless the approval is cancelled or suspended under section 18 of the *Environmental Management Act*;

“Association” means an association of two or more facilities, which association includes in its purposes

- a) preparing a plan for the purposes of this regulation, and
- b) monitoring and reporting on compliance with the plan.

“Environmental Management Plan” means a document approved by a qualified professional that describes how the wastes from wet vehicles (listed below) will be removed, stored, treated, recycled or disposed of in accordance with the *Environmental Management Act*. In addition, the plan must set out management processes for minimizing or eliminating the discharge of wastes to the environment and a contingency plan documenting procedures to be followed during an emergency.

“Wastes” means those substances defined by Section 2(3)(b) the VDRIEPR:

- ozone depleting substances and other halocarbons;
- oils, brake fluids, solvents, fuels and other hydrocarbons;
- antifreeze;

- lead and lead-acid batteries;
- tires;
- mercury switches; and
- windshield washer fluid.

“Hazardous Waste” means a waste gas, liquid, or solid as defined by the Hazardous Waste Regulation. Tires and windshield washer fluid are wastes as listed above but are not classified as hazardous wastes in accordance with the HWR. Vehicle dismantlers must take special attention to hazardous wastes as there are additional registration, storage and transportation requirements.

“Hulk” means a wet vehicle that has been de-registered (Vehicle Identification Number has been submitted to the Motor Vehicle Branch) and the wastes have been removed in accordance with the requirements of the *Environmental Management Act*.

“Motor Vehicle” has the same meaning as in the *Motor Vehicle Act* and would include motor cycles.

“Qualified Professional”, in relation to a duty or function under this regulation, means an applied scientist or technologist specializing in an applied science or technology applicable to the duty or function, including, if applicable and without limiting this, agronomy, biology, chemistry, engineering, geology or hydrogeology and who

(a) is registered in British Columbia with the appropriate professional organization, is acting under that organization’s code of ethics and is subject to disciplinary action by that organization, and

(b) through suitable education, experience, accreditation and knowledge, may be reasonably relied on to provide advice within their area of expertise;

“Secondary Containment” means the containment of a volume of hazardous wastes that is 110% of the largest container or 25% of the total volume of containers.

“Vehicle Dismantling and Recycling Industry” has the same meaning as in Schedule 2 of the *Waste Discharge Regulation*.

Means establishments except home-based businesses, educational facilities and establishments of hobbyists or artisans, engaged in wrecking or dismantling vehicles or in recycling or disposing of parts and other waste material from vehicles.

“Wet Part” means a vehicle part that contains or contained wastes excluding shock absorbers, non-leaking differentials and empty gasoline tanks.

“Wet Vehicle” a motor vehicle that

a) is no longer used for transportation purposes, and

b) has not been reduced to a steel hulk or to a steel hulk with only the plastic, fabric or foam components still attached.

2.2 Provincial Jurisdiction

The majority of vehicle dismantlers are located on lands that are subject to the provincial acts and regulations. The provincial *Environmental Management Act* and its associated regulations provide the primary regulatory framework for the management of wastes by vehicle dismantlers.

In addition to the Vehicle Dismantling and Recycling Industry Environmental Planning Regulation (Guidebook Section 2.2.1), there are other regulations associated with the *Environmental Management Act* that focus specifically on the management of wastes in British Columbia. These are:

- The Hazardous Waste Regulation (Section 2.2.2) manages hazardous wastes (e.g., lead, contaminated soils, etc.) as well as hazardous liquid wastes (e.g., waste oil, antifreeze, windshield washer fluid etc);
- The Ozone Depleting Substances and Other Halocarbons Regulation (Section 2.2.3) focuses specifically on the management of refrigerants;
- The Spill Reporting Regulation (Section 2.2.4) outlines the requirements for vehicle dismantlers to report spills to the Provincial Emergency Program; and
- The Contaminated Sites Regulation (CSR) (Section 2.2.5) is also of interest to vehicle dismantlers; however, the CSR does not have a direct impact on the day-to-day operations of a vehicle dismantler. Consequently, the requirements of the CSR would not be included in an environmental management plan.

2.2.1 Vehicle Dismantling and Recycling Industry Environmental Planning Regulation

The Vehicle Dismantling and Recycling Industry Environmental Planning Regulation (VDRIEPR) requires all vehicle dismantlers that dismantle more than 5 wet vehicles in a calendar year to have an environmental management plan (EMP) and register with the Director by September 1, 2008. See the Ministry of Environment's web site for further information and to download registration forms:

<http://www.env.gov.bc.ca/epd/industrial/regs/vehicle/index.htm>.

The information required for registration can be found in Section 3 of the VDRIEPR and is summarized below:

- The full legal name of the entity operating the facility;
- The name, address and telephone number of an individual who is located at or near the facility and is the local contact for the facility;
- The address of the facility and the legal description of the land on which the facility is located;

- The address at which the plan may be viewed or copied; and
- Confirmation that the facility has a plan that complies with the requirement of the regulation or is a member of an association that has a plan that complies with the regulation.

The environmental management plan (EMP) must address the management of the following wastes:

- Ozone depleting substances and other halocarbons;
- Oils, brake fluids, solvents, fuels and other hydrocarbons;
- Antifreeze;
- Lead and lead-acid batteries;
- Waste tires;
- Mercury switches; and
- Windshield washer fluids.

Vehicle dismantlers must, by September 1, 2008, have an EMP, approved by a qualified professional that:

- describes how the wastes listed above are stored, treated, recycled or disposed of in compliance with the *Environmental Management Act* and applicable regulations; and
- sets out the management processes for minimizing or eliminating the discharge of wastes to the environment and includes a contingency plan documenting procedures to be followed during an emergency.

The VDRIEPR outlines auditing and reporting schedules for two categories of vehicle dismantlers, those that are members of an association and those that are not. Please refer to the VDRIEPR ([Appendix 1](#)) for exact details and dates. Generally, every five years the EMP must be reviewed, amended and approved by a qualified professional, and every two years each vehicle dismantler must have a qualified professional prepare an audit report. The audit report must describe:

- how the wastes listed above were managed;
- whether the management of wastes was in accordance with the facility's EMP; and
- the effectiveness of the management processes used for minimizing or eliminating the discharge of wastes to the environment.

2.2.2 Hazardous Waste Regulation¹

Vehicle dismantlers may be subject to the Hazardous Waste Regulation (HWR) depending on the quantity of hazardous waste they generate, store, treat or offer for transport. If they are subject to the regulation, vehicle dismantlers are required to comply with various requirements, including registration requirements, operational requirements, and transportation requirements.

¹ The HWR is in the process of being reviewed. Please refer to the HWR for current requirements.

Registration Requirements:

Vehicle dismantlers generating hazardous waste in a 30-day period above the thresholds listed in Table 1 must register the hazardous waste and apply for a Consignor Identification Number by completing Form 1 of Schedule 5 of the HWR and submit it to a director. See Appendix 5 of the HWR to obtain the registration form for the Consignor Identification Number:

http://www.qp.gov.bc.ca/statreg/reg/E/EnvMgmt/EnvMgmt63_88/63_88_04.htm#Schedule5. Vehicle dismantlers that store, treat, recycle or dispose of hazardous waste above the thresholds listed in Table 1 must also register and obtain a Consignor Identification Number.

Table 1: Registration Quantities for Generators and Short Term Storage Facilities (from Column II of Schedule 6 of the Hazardous Waste Regulation)

Hazardous Waste	Generator or Storage Quantity Thresholds (L or kg)
Waste oil	5,000
Antifreeze (leachable toxic waste)	500
Mercury containing waste (TDGR Class 8)	100
Fuels (TDGR Class 3)	500
Lead acid batteries	2,000

Operational Requirements for Short Term Storage Facilities:

Vehicle dismantlers storing more than the quantity of hazardous waste set out in Table 1, at any time, are considered short term storage facilities. As short term storage facilities, they must store hazardous waste as specified in Parts 2, 3, and Division 2 of Part 4 of the HWR.

Vehicle dismantlers who are not primarily in the business of waste management and who engage in short term, on site, passive storage are provided with some exemptions under the HWR Section 16 (2) related to plans.

Note that if a vehicle dismantler is processing, treating or disposing of hazardous waste on site, the facility would be considered a hazardous waste management facility and would not receive the above-mentioned plan exemptions. Additional requirements under the HWR would apply.

Transportation Requirements:

All vehicle dismantlers must not offer for transport hazardous waste in quantities that exceed the thresholds in Table 2 (from HWR Section 46) unless the carrier is licensed to

transport the specific wastes by the Ministry of the Environment. The shipment must also be manifested and sent to an authorized hazardous waste facility for processing.

Table 2: Manifest and Transportation Thresholds for Hazardous Wastes

Hazardous Waste	Transportation and Manifest Quantity (L or kg)
Waste Oil	210
Antifreeze	5
Mercury	5
Waste Fuel (Stale Gas)	5
Lead Acid Batteries	1,000
Other Solid Hazardous Waste	5

Performance Standards for Oil/Water Separators:

All vehicle dismantlers with oil/water separators or surface runoff are required to meet the requirements of Section 17 of the HWR and the Effluent Standards from Schedule 1.2 of the Hazardous Waste Regulation. The effluent standards of the HWR are summarized in Table 3.

Table 3: Selected Effluent Standards for Parameters from Schedule 1.2 of the Hazardous Waste Regulation

Parameter	Standard for Discharges to the Environment or Storm Sewers*	Standard for Discharges Directed to Municipal or Industrial Effluent Treatment Works*
Total Suspended Solids	20	-
Toxicity**	100% Effluent	50% Effluent
Aluminum, dissolved	0.5	2.0
Ammonia, total	2.0	-
Copper, dissolved	0.1	0.3
Lead, dissolved	0.1	0.3
Mercury, total	0.001	0.01
Zinc, dissolved	0.2	0.5
BOD	20	-
Oil	10	60
* Maximum concentration in (mg/L) unless otherwise specified.		
** 96-hr LC50 bioassay with 50% survival of rainbow trout after 96 hours.		

Note: Local municipal government requirements may be more restrictive.

2.2.3 Ozone Depleting Substances and Other Halocarbons Regulation

The Ozone Depleting Substances and Other Halocarbons (ODS) Regulation (http://www.qp.gov.bc.ca/statreg/reg/E/EnvMgmt/387_99.htm) restricts the removal, storage and disposal of refrigerants recovered from wet vehicles. The primary requirement is that only an “approved person” can service a motor vehicle air conditioner, including the removal of refrigerants. The approved person definition from the ODS Regulation is provided in Section 2.1 (Definitions) of this guidebook. In addition to holding an appropriate trade credential (e.g., automotive service technician, refrigeration and air conditioning mechanic), an approved person must have also successfully completed an approved environmental awareness course in refrigerant handling and an approved motor vehicle air conditioning course. These courses are usually offered by local colleges or the Heating, Refrigeration and Air Conditioning Institute (HRAI) (<http://www.hrai.ca/>).

Typically, vehicle dismantlers hire an approved person with mobile equipment to visit the yard, remove refrigerants and complete the necessary paper work and labeling of wet vehicles. Refer to Section 4 Refrigerants, for further information.

2.2.4 Spill Reporting Regulation

The Spill Reporting Regulation² requires all persons that manage hazardous waste to report significant spills to the Provincial Emergency Program at 1-800-663-3456. A spill is considered significant if it is above the thresholds listed in Table 4 below:

Table 4: Spill Reporting Thresholds for Hazardous Waste in British Columbia

Hazardous Wastes	Spill Reporting Threshold
Oil and Oil Related Products	100 L
Antifreeze	5 L
Waste Gasoline	100 L
Mercury	5 kg
Refrigerants	10 kg

2.2.5 Contaminated Sites Regulation

The Contaminated Sites Regulation (CSR) is a regulation that deals with the liabilities and obligations resulting from contamination at a site. For vehicle dismantlers, contamination may result from the improper management of wastes. It is important to

² The Spill Reporting Regulation is currently under review. The data listed in this guidebook includes amendments up to B.C. Reg. 220/2006, July 21, 2006. Please check with the Ministry of Environment for the most up to date version of the regulation at http://www.env.gov.bc.ca/eemp/overview/leg_program.htm.

properly manage the wastes generated at a site in order to avoid the property from becoming contaminated and subsequently, subject to the remediation requirements under the CSR. Please refer to the Ministry of Environment's Land Remediation web site for more information on the CSR: <http://www.env.gov.bc.ca/epd/remediation/>.

2.2.5.1 Liability

The CSR is a provincial regulation that holds businesses liable if they contaminate the soil or groundwater. The liability for remediation of a contaminated site flows from Part 4 of EMA. The CSR details additional provisions for contaminated sites and the liability includes past practices.

The best way for vehicle dismantlers to deal with the requirements of the CSR is to establish an efficient and clean operation and prevent spills from occurring in the first place. The clean up of a contaminated site can be expensive and time consuming.

Spills (large and small) that are not cleaned up immediately may create a long-term liability for vehicle dismantlers. If the vehicle dismantler leases the property, then the owner of the property has a legal right to hold the dismantler responsible for the contamination on site. If the dismantler owns the property, then the dismantler is devaluing their property and may not be able to sell the property without first deducting the environmental liability from the sale price.

2.3 Federal Jurisdiction

In British Columbia, approximately 12 vehicle dismantlers (or 10% of vehicle dismantlers) are located on federal lands including Indian Act Reserves. Vehicle dismantlers located on federal lands must comply with the Federal Acts and Regulations and with the Treasury Board's Contaminated Sites Policy and INAC's Contaminated Sites Management Policy (if applicable).

As the federal requirements are similar to the provincial regulations, vehicle dismantlers located on federal lands can use the operational checklists in this document to determine their compliance with federal laws.

Section 3: Hazardous Wastes

The dismantling of wet vehicles requires the management of a variety of hazardous wastes (solid, liquid or gas). The well-managed yard develops a variety of procedures and training programs to ensure their employees manage the hazardous wastes in an appropriate manner.

Well-managed vehicle dismantlers handle hazardous wastes in the following ways:

- Wet vehicles are assessed when received and dismantled immediately if they are observed to have a leak. Wet vehicles that are leaking in the receiving area have adequate spill control equipment (i.e., drip pans).
- Wet parts are removed in the dismantling area only.
- The dismantling area is made of an impermeable material, has a roof or cover to keep out precipitation, and does not have any drains.
- The floor of the dismantling area has some sort of secondary containment.
- The drums of hazardous wastes are stored adjacent to the dismantling area and the area has secondary containment.
- Drums are shipped when they are full and a minimal amount of hazardous wastes are stored on site.
- The dismantling and wet parts storage areas have adequate spill prevention and control equipment.
- All wet parts containing hazardous wastes are removed in the dismantling area prior to storage in the hulk storage area.
- Spills in receiving and hulk storage areas are cleaned up immediately.
- Employees are trained in spill prevention and spill control procedures and follow company procedures.



3.1 Oils and Related Fluids

Used oil means automotive lubricating oil, cutting oil, fuel oil, gear oil, hydraulic oil or any other refined petroleum based oil or synthetic oil.

For the purpose of this guidebook, oil filters are considered a hazardous waste and the average wet vehicle will contain approximately six litres of used oil or oil related products.



The British Columbia Used Oil Management Program is the stewardship agency tasked with the collection and disposal of used oil. The BC Used Oil Management Program will pay vehicle dismantlers for the waste oil and oil filters recovered from wet vehicles. For more information about the program go to: <http://www.usedoilrecycling.com/en>.

3.1.1 Legal Requirements

Used oil and oil related products are considered a hazardous waste and must be managed in an appropriate manner. The legal thresholds for used oil are listed in Table 5.

Table 5: Summary of Used Oil Thresholds

Registration	Storage	Manifest	Spill
5,000 L	5,000 L	210 L	100 L

If the vehicle dismantler handles more than approximately 800 wet vehicles in an average 30-day period ($800 \times 6 \text{ L avg/car} = 5,000 \text{ L}$) or stores more than 5,000 litres of waste oil, the yard will be required to obtain a Consignor Identification Number from the Ministry of Environment. See Form 1 of Schedule 5 of the Hazardous Waste Regulation to obtain the registration form for the Consignor Identification Number:

http://www.qp.gov.bc.ca/statreg/reg/E/EnvMgmt/EnvMgmt63_88/63_88_04.htm#Schedule5.

Further, if the vehicle dismantler stores more than 5,000 litres of waste oil at a site or processes more than 800 wet vehicles in an average 30-day period at a site, they will need to meet Parts 2, 3 and 7 and Division 2 of Part 4 of the HWR. The vehicle dismantlers that are required to meet these additional requirements in the HWR should contact their qualified professional for an explanation of the additional requirements.

All vehicle dismantlers with oil/water separators are required to test the outflow (Diagram 1 in Section 5.2.3) and ensure that the concentration of oil is less than 10 mg/L if they discharge to ditches or storm sewers and 60 mg/L if they discharge to sanitary sewers (Table 3). Note that the municipal standard for the discharge of oil may be more stringent.

Because oil is considered a hazardous waste, all vehicle dismantlers that offer for transportation used oil in quantities greater than 210 litres are required to:

- Use a transporter that is licensed under Section 45 of the HWR to transport used oil. The transporter must have a valid Hazardous Waste Transport License issued by the Ministry of Environment.
- If the vehicle dismantler does not have a Consignor Identification Number, ensure the transporter puts the multiple load manifest number on the invoice. If the vehicle dismantler has a Consignor Identification Number, ensure the manager retains Copy 2 of the manifest and mails Copy 1 to the Ministry of Environment within three days.

- Store all records related to the transportation of hazardous waste for a minimum of two years.



Used oil filters are also considered hazardous waste and all vehicle dismantlers should dispose oil filters in the same manner as used oil.

Vehicle dismantlers that burn waste oil for heat must comply with Section 41 of the Hazardous Waste Regulation and ensure the concentration of contaminants in the waste oil to be burned are below the following thresholds:

Total Arsenic:	5 mg/L
Total Cadmium:	2 mg/L
Total Organic Halogens (as Cl):	1500 mg/L
Total Chromium:	10 mg/L
Total Lead:	50 mg/L
Total PCBs:	3 mg/L

All vehicle dismantlers are required to report oil spills over 100 litres. Use the Provincial Emergency Program's (PEP) hotline to report all oil spills over 100 litres (1-800-663-3456).

3.1.2 Operational Checklist

The following questions can be used as a checklist for managing hazardous wastes.

1. Does the transporter have a current Hazardous Waste Transport License for used oil and oil filters issued by the provincial Ministry of Environment?
2. Does the transporter manifest each shipment of used oil and used oil filters and put the manifest number on each shipping form?
3. Do you keep the transporter's shipping record for two or more years?
4. Do you know the used oil spill thresholds that must be reported to the Provincial Emergency Program?
5. Are oil spills (large and small) cleaned up immediately?
6. Do you sample your oil/water separator at least once per year and do the results meet the thresholds listed in Table 3 (skip this question if you do not have an oil/water separator)?

7. Are all wet vehicles drained of used oil and used oil filters removed before hulk is stored or crushed?

If you answered NO to any one of these questions, you should adjust your operations. The Best Management Practices outlined below provide guidance on making operational changes.

3.1.3 Best Management Practices:

The following Best Management Practices have been used successfully in British Columbia by vehicle dismantlers. If the volume of used oil exceeds the registration and storage thresholds listed in Table 5, additional Best Management Practices should be implemented.

Dismantling:

- All used oils, oil related products and oil filters are removed from all the wet vehicles in the dismantling area and transferred quickly to the used oil storage area.
- All wet parts that previously contained oil or oil related products are removed from the wet vehicle in the dismantling area.
- The dismantling area is kept dry, not subject to flooding during normal precipitation events, has an impervious floor and has an adequate level of secondary containment.
- The dismantling area is kept clean and uncluttered.
- Oil/water separator is cleaned out on a regular basis (twice a year at a minimum).
- The discharge from the oil/water separator meets discharge requirements.

Storage:

- Used oil and filters are stored in separate marked containers with an adequate lid and secondary containment.
- Containers of waste oil are stored in a covered area without drains (oil/water separators are not designed to intercept large spills).
- Containers storing used oil and filters are protected from precipitation.
- Wet parts that have been removed from wet vehicles are stored in an area with an adequate level of containment for any residual oil (e.g., drip pans) and are protected from precipitation (e.g., covered area).

Recycling:

- Used oil and used oil filters are sold to the British Columbia Used Oil Management Association (BCUOMA).
<http://www.usedoilrecycling.com/en>
- Waste oil burned on site in waste oil burners is tested to ensure contaminants are below the thresholds listed in Section 3.1.1.

Containers:

- Steel drums are used to store used oil. Plastic containers are acceptable, but the plastic deteriorates over time and will eventually fail. Plastic containers are also more susceptible to puncture or vandalism causing a major spill. Remember that spills over 100 litres (i.e., one half of a 220 litre drum) will necessitate an immediate call to the Provincial Emergency Program (1-800-663-3456) to report the spill.

Spills:



- Ensure spill kits have materials and equipment to contain spills, absorb oil and oil related products. Materials and equipment include:
 - shovels and pails to clean up contaminated solids and gravels in the receiving, hulk storage and the crusher areas;
 - adsorbent materials to clean-up oil and oil related products in the dismantling and wet parts storage areas; and
 - storage drums to collect contaminated solids and gravels.
- Ensure oil contaminated solids and materials (e.g., absorbent, rags) are disposed of as a hazardous waste.
- Ensure the Provincial Emergency Program (1-800-663-3456) phone number is visible on the wall for all employees. The clean up of a major spill will be expensive and if the spill migrates off the site into sewers, storm drains or fish bearing waters, charges by the regulatory agencies could occur.
- Oil/water separator should not be used as part of the spill containment strategy. Large oil spills will pass through an oil/water separator and into the environment.
- Ensure staff are trained on how to handle used oil, in spill prevention and in what to do in the event of a large spill.

Records:

- Ensure a copy of current transporter's license to transport waste oil and used oil filters are kept on file.
- Ensure all shipment records have a manifest number.
- Ensure all records are kept for a minimum of two years.

3.2 Antifreeze



Antifreeze is another hazardous waste found in vehicles. It is toxic, water-soluble and contaminated with rust inhibitors and corrosion products including lead (from the solder in the radiator). Spills of antifreeze easily penetrate the soil and can cause the ground to be contaminated.

If the antifreeze is reusable it is not considered a waste. As such, the legal disposal requirements do not apply and the product can be sold or given away to employees or customers.

3.2.1 Legal Requirements

Antifreeze that contains rust inhibitors and corrosion products and waste antifreeze (i.e., not reusable antifreeze) is usually considered a leachable toxic waste by the Hazardous Waste Regulation (HWR). The legal thresholds for waste antifreeze are listed in Table 6.

Table 6: Legal Thresholds for Waste Antifreeze

Registration	Storage	Manifest	Spill
500 L	500 L	5 L	5 L

The vehicle dismantler is required to register with the Ministry of Environment and obtain a Consignor Identification Number if they drain more than approximately 60 wet vehicles in an average 30-day period or store more than 500 litres of waste antifreeze. The threshold of 60 wet vehicles assumes the average wet vehicle contains eight litres of antifreeze. See Form 1 of Schedule 5 of the HWR to obtain the registration form for the Consignor Identification Number:

http://www.qp.gov.bc.ca/statreg/reg/E/EnvMgmt/EnvMgmt63_88/63_88_04.htm.

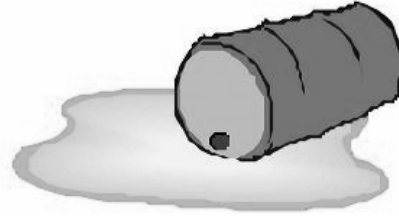
Further, if the facility stores more than 500 litres of waste antifreeze or drains more than 60 wet vehicles in an average 30-day period, you will need to meet Parts 2, 3 and 7 and Division 2 of Part 4 of the HWR.

All vehicle dismantlers that offer to prepare waste antifreeze for transport in quantities greater than five litres are required to:

- Use a transporter that is licensed under Section 45 of the HWR to transport leachable toxic wastes. The transporter must have a valid Hazardous Waste Transport License issued by the Ministry of Environment.
- If the vehicle dismantler does not have a Consignor Identification Number, ensure the transporter puts the multiple load manifest number on the invoice. If the vehicle dismantler has a Consignor Identification Number, ensure the manager retains Copy 2 of the manifest and mails Copy 1 to the Ministry of Environment within three days.
- Store all records related to the transportation of hazardous wastes for a minimum of two years.

All vehicle dismantlers with oil/water separators are required to test the outflow and ensure that the concentration of lead (a contaminant in antifreeze) is less than 0.10 mg/L if they discharge to ditches or storm sewers and 0.30 mg/L if they discharge to sanitary sewers. Note that the municipal standard for lead may be more stringent.

Finally, all vehicle dismantlers are required to report waste antifreeze spills over five litres. Use the Provincial Emergency Program's (PEP) hotline to report all antifreeze spills over five litres (1-800-663-3456).



3.2.2 Operational Checklist

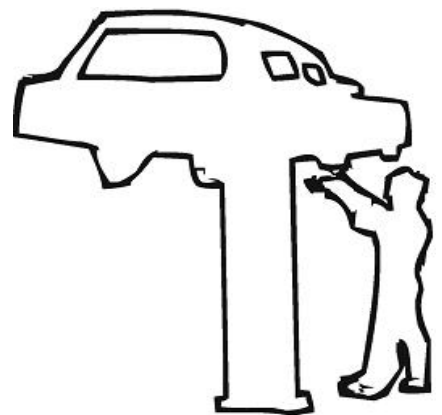
The following questions can be used as a checklist for managing antifreeze.

1. Are all wet vehicles drained of antifreeze before the hulk is stored or crushed?
2. Does the transporter have a current Hazardous Waste Transport License for waste antifreeze issued by the provincial Ministry of Environment?
3. Does the transporter manifest each shipment of antifreeze and put the manifest number on each invoice?
4. Do you keep the transporter's invoices for two or more years?
5. Do you know the antifreeze spill thresholds that must be reported to the Provincial Emergency Program?
6. Are spills of antifreeze (large and small) cleaned up immediately?
7. Do you sample your oil/water separator at least once per year (skip this question if you do not have an oil/water separator)?
8. Were the water quality results for lead less than the threshold listed in Table 3 (skip this question if you do not have an oil/water separator)?

If you answered NO to any one of these questions, you should adjust your operations. The Best Management Practices outlined below provide guidance on making operational changes.

3.2.3 Best Management Practices

The following Best Management Practices have been used successfully by vehicle dismantlers to meet the requirements of applicable regulations. If the volume of waste antifreeze exceeds the registration and storage thresholds listed in Table 6, additional Best Management Practices should be implemented.



Dismantling:

- All antifreeze is removed from all wet vehicles in the dismantling area and transferred quickly to the hazardous waste storage area.
- All wet parts that contained antifreeze are removed in the dismantling area.
- The dismantling area is dry, not subject to flooding during normal precipitation events, has an impervious floor and has an appropriate level of secondary containment.
- Dismantling and wet parts storage areas are clean and uncluttered.
- An oil/water separator is not used as part of the spill response strategy for antifreeze. Antifreeze is water-soluble and will pass through an oil/water separator and be discharged to the environment.

Containers:

- Use steel drums to store waste antifreeze. Plastic containers are acceptable, but the plastic deteriorates over time and will eventually fail. Plastic containers are also more susceptible to puncture or vandalism. Remember that spills over five litres must be reported to the Provincial Emergency Program (1-800-663-3456). The clean up of a major spill will be expensive. If the spill migrates off the site into sewers, storm drains or fish bearing waters, charges by the regulatory agencies could occur.
- Keep waste antifreeze containers near the dismantling area to reduce the traveling distance required to reach the disposal container and the likelihood of a spill.

Storage:

- Store waste antifreeze in a marked container with an adequate lid and secondary containment.
- Leave waste antifreeze containers in an area without drains.
- Protect waste antifreeze containers from runoff and precipitation.
- Provide an adequate level of containment and protection from any residual antifreeze leakage from radiators.

Recycling:

- Dispose of waste antifreeze as a hazardous waste.
- Dispose of other antifreeze-contaminated materials as a hazardous waste.
- Keep transportation records and together in an easily accessible location on site.



Spills:

- Quickly clean up small antifreeze spills that occur throughout the yard (e.g., wet vehicle receiving and hulk storage areas).
- Ensure spill kits have materials and equipment to contain spills and absorb antifreeze. Materials and equipment include:
 - shovels and pails to clean up contaminated solids and gravels in the wet vehicle receiving, hulk storage and the crusher areas;
 - adsorbent to clean-up antifreeze in the dismantling and wet parts storage areas; and
 - storage drums to collect contaminated solids and gravels.
- Dispose of antifreeze contaminated solids and materials (e.g., rags) as a hazardous waste.
- Ensure the phone number of the Provincial Emergency Program (1-800-663-3456) is visible on the wall by all employees.
- Ensure staff are trained on how to handle waste antifreeze, in spill prevention and in what to do in the event of a large spill.

Records:

- Ensure a copy of the transporter's current license to transport antifreeze is kept on file.
- Ensure all shipment records have a manifest number.
- Ensure all records are kept for a minimum of two years.

3.3 Windshield Washer Fluid



Windshield washer fluid contains a variety of compounds, is toxic and must be removed from wet vehicles. However, windshield washer fluid can be reused.

3.3.1 Legal Requirements

Windshield washer fluid is a mixture of toxic compounds and must be managed under the VDRIEPR. Windshield washer fluid is normally not considered a hazardous waste under the HWR. Consequently, there are no legal thresholds for the storage or transportation of windshield washer fluid. However, it is still toxic and should be managed appropriately.

In addition, spilling windshield washer fluid on the soil may cause contamination as defined by the Contaminated Sites Regulation. Consequently, some vehicle dismantlers remove the windshield washer fluid and give the product away.

3.3.2 Operational Checklist

The following question can be used as a checklist for managing antifreeze.

1. Is windshield washer fluid removed from wet vehicles?

3.3.3 Best Management Practices

- All windshield washer fluid is removed in the dismantling area.
- All windshield washer fluid is reused.

3.4 Mercury Switches

Mercury switches are common in hoods, trunks, convenience lighting assemblies, and anti-locking brake systems. Each convenience-lighting switch contains just less than one gram of mercury, but cumulatively they amount to nine tonnes of mercury switches in vehicles on the road today. Mercury in automobiles is the single largest source of mercury in use in Canadian products.

Mercury is extremely dangerous in small quantities and the pellets must be removed prior to shredding.

Import automotive manufacturers ceased using mercury switches in the mid-1990s, while in North American it was not until model year 2003 that mercury switches finally stopped being used in new cars.

No attempt is made in this guidebook to list the makes and models of vehicles with mercury switches. Lists of vehicles with mercury switches are available on the internet; however, this may not be a reliable source of information.

A 2002 study in Michigan found that 44% of all vehicles had mercury switches. Consequently, vehicle dismantlers must check the hood and trunk of all vehicles for convenience lights and remove all mercury switches.

3.4.1 Clean Air Foundation's Mercury Switch Out Program

In 2001 the Clean Air Foundation began operating the Mercury Switch Out Program. The program co-ordinates the collection of mercury switches from vehicle dismantlers at no cost to the dismantler. The switches are collected and sent to Fluorescent Lamp Recycling in Ayr, Ontario where they are put into long term storage to ensure the mercury is not released to the environment. Registration for the program can be filled out online at http://www.cleanairfoundation.org/switchout/register_so.asp. The Clean Air

Foundation will send training material, a container for the mercury switch pellets, and a pre-paid courier waybill to send in the container once full. The website also contains an instructional manual on how to remove the mercury switches from trunks, hoods and anti-locking brake systems.

3.4.2 Legal Requirements

Mercury pellets contain about one gram of elemental mercury. Should the metal casing of the pellet be broken, then the mercury would contaminate the wet vehicle and the leachate extraction concentration of 0.1 mg/L of mercury would classify the wet vehicle as a hazardous waste. Steel recyclers that shred hulks are particularly concerned with mercury as the shredding process will release the mercury into the environment and contaminate the fluff.

The legal thresholds of mercury are listed in Table 7.

Table 7: Legal Thresholds for Mercury

Registration	Storage	Manifest	Spill
100 kg	100 kg	5 kg	5 kg

Because the thresholds for mercury are high relative to the weight of mercury in wet vehicles, most vehicle dismantlers will be below the registration and storage thresholds listed above.

All vehicle dismantlers that offer to prepare mercury for transport in quantities greater than five kilograms are required to:

- Use a transporter that is licensed to transport mercury. The transporter must have a valid Hazardous Waste Transport License issued by the Ministry of Environment.
- Ensure the transporter manifests the shipment. The transporter will put a manifest number on the invoice.
- Store records (i.e., invoice with manifest number) for a minimum of two years.

Finally, all vehicle dismantlers are required to report mercury spills over five kilograms. Use the Provincial Emergency Program's (PEP) hotline (1-800-663-3456).

3.4.3 Operational Checklist

The following questions can be used as a checklist for managing mercury.

1. Are all wet vehicles checked for mercury switches?

2. Are all mercury switches removed from wet vehicles prior to crushing?
3. Are mercury pellets stored in plastic containers supplied by the Mercury Switch-Out Program?
4. Are mercury pellets in the switches disposed through the Mercury Switch Out Program?

If you answered NO to any one of these questions, you should adjust your operations. The Best Management Practices outlined below provide guidance on making operational changes.



3.4.4 Best Management Practices

- All hoods, trunks and convenience lights are checked for mercury switches prior to crushing and shredding.
- All mercury switches are removed in the dismantling area.
- Containers used are supplied by the Mercury Switch Out Program. For information about the Mercury Switch Out Program, go to: <http://www.cleanairfoundation.org/switchout>.

3.5 Fuels

Gasoline, diesel, stale gas, propane and natural gas are the typical fuels encountered by vehicle dismantlers. No attempt is made in this guidebook to manage alternate fuels such as hydrogen.



Fuels on wet vehicles average 20 litres; however, the majority of fuels can be reused and if recycled, they are not considered a hazardous waste, as they are being used for their intended purpose. All efforts should be made to reuse fuels by transferring the product to on site vehicles.



Propane and natural gas are found in vehicles (primarily trucks) and can also be transferred to on site vehicles.

Waste or stale gasoline is simply gasoline that has lost its “high ends” and cannot be used in vehicles. Unused fuels or stale gas must be disposed of as a hazardous waste and are considered hazardous waste if transported off site.

3.5.1 Legal Requirements

The legal thresholds of waste fuel are listed in Table 8.

Table 8: Legal Thresholds for Fuels

Registration	Storage	Manifest	Spill
500 L	500 L	5 L	100 L

If a facility processes more than approximately 25 wet vehicles in an average 30-day period with an average of 20 litres of waste fuel per wet vehicle, ($25 \times 20 \text{ L/car} = 500 \text{ L}$), then the facility will need to register and obtain a generator registration number from the Ministry of Environment. See Appendix 5 of the Hazardous Waste Regulation to obtain the registration form for the Consignor Identification Number:

http://www.qp.gov.bc.ca/statreg/reg/E/EnvMgmt/EnvMgmt63_88/63_88_04.htm).

Further, if a facility stores more than 500 litres of waste fuel or processes more than approximately 25 wet vehicles with waste fuel in an average 30-day period, other requirements of the HWR apply. These additional requirements of the HWR are Parts 2, 3 and 7 and Section 16. Because the guidebook was designed for the “average” vehicle dismantling operation, the additional requirements of the HWR that impact large volume operations are not discussed further.

All vehicle dismantlers with oil/water separators are required to test the outflow and ensure that the concentration of oil is less than 10 mg/L if they discharge to ditches or storm sewers and 60 mg/L if they discharge to sanitary sewers. These standards are listed in Table 3 of this guidebook and take from Schedule 1.2 of the HWR. Note that the municipal standard for oil may be more stringent.

All vehicle dismantlers that offer to prepare fuel for transport in quantities greater than five litres are required to:

- Use a transporter that is licensed to transport waste fuel. The transporter must have a valid Hazardous Waste Transport License issued by the Ministry of Environment.
- Ensure the transporter manifests the shipment. The transporter will put a manifest number on the invoice.
- Store records (i.e., invoice with manifest number) for a minimum of two years.

All vehicle dismantlers are required to report waste fuel spills over 100 litres. Use the Provincial Emergency Program’s (PEP) hotline to report all oil spills over 100 litres (1-800-663-3456).

3.5.2 Operational Checklist

The following questions can be used as a checklist for managing fuel.

1. Does the transporter have a current Hazardous Waste Transport License for waste oil issued by the provincial Ministry of Environment?
2. Does the transporter manifest each shipment and put the manifest number on each invoice?
3. Do you store the transporter's records for two or more years?
4. Do you know the threshold spill quantities that must be reported to the Provincial Emergency Program?
5. Do you and your employees know the Provincial Emergency Program number?
6. Do you sample your oil/water separator at least once per year and test for Suspended Solids, BOD and Oil (skip this question if you do not have an oil/water separator)?
7. Were the water quality results less than the thresholds listed in Table 3(skip this question if you do not have an oil/water separator)?

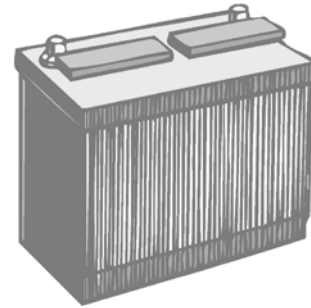
If you answered NO to any one of these questions, you should adjust your operations. The Best Management Practices outlined below provide guidance on making operational changes.

3.5.3 Best Management Practices

- Use re-usable fuels on site.
- Remove re-usable gasoline with great care to prevent fire and store it outside the dismantling area.
- Remove gasoline and diesel from the wet vehicle using suction – (puncturing the gas tank and collecting the fuel is risky as spills can occur).
- Propane and natural gas are reused in on site vehicles or transferred to larger cylinders and sold. Gases are not vented to the atmosphere.
- Waste gasoline and diesel are not mixed with waste oil.

3.6 Lead

Lead in wet vehicles is found in tire weights and lead-acid batteries. For the purpose of calculations in this guidebook, the average wet vehicle is expected to contain 20 kg of lead.



3.6.1 Legal Requirements

Lead and lead-acid batteries are considered a hazardous waste and must be managed appropriately. The legal thresholds of lead are listed in Table 9 below.

Table 9: Legal Thresholds for Lead-Acid Batteries

Registration	Storage	Manifest	Spill
2,000 kg	2,000 kg	1,000 kg	200 kg

Assuming the average wet vehicle contains 20 kg lead, if the site processes more than 100 wet vehicles in an average 30-day period (i.e., 2,000 kg) or stores more than 2,000 kg of lead (approximately 100 lead-acid batteries), the dismantler will be required to register with the Ministry of Environment and obtain a Consignor Identification Number. See Appendix 5 of the Hazardous Waste Regulation to obtain the registration form for the Consignor Identification Number: http://www.qp.gov.bc.ca/statreg/reg/E/EnvMgmt/EnvMgmt63_88/63_88_04.htm.

Further, if the site stores more than 2,000 kg of lead or the site processes more than 100 wet vehicles in an average 30-day period, the dismantler will need to meet additional Parts and Sections of the HWR. These additional requirements of the HWR are Parts 2, 3 and 7 and Section 16. Because the guidebook was designed for the “average” vehicle dismantler, the additional requirements of the HWR that impacts large volume operations are not discussed in this guidebook.

As of June, 1991 the ministry has managed the B.C. Lead-Acid Battery Collection Program. Originally the only initiative of its type in Canada, striving to meet a recovery rate of at least 98% of all end-of-life batteries generated annually in B.C. The program helps to ensure that all used batteries are economically transported to a processor, and it is estimated that virtually 100% are recovered given the right market conditions. The lead-acid battery program provides Transportation Incentive Programs (TIPS) as a form of funding assistance for safe collection and transportation of end-of-life batteries from generators to an approved broker or processing facility. Please see the following web site for further information: <http://www.env.gov.bc.ca/epd/recycling/batt/index.htm> or visit the Recycling Council of British Columbia’s (RCBC) web site: <http://www.rcbc.bc.ca> or call the RCBC Toll-Free Hotline at 1-800-667-4321.

All vehicle dismantlers with oil/water separators are required to test the outflow and ensure that the concentration of dissolved lead is less than 0.1 mg/L if they discharge to

ditches or storm sewers and 0.3 mg/L if they discharge to sanitary sewers. Effluent standards are listed in Schedule 1.2 HWR and summarized in Table 3. Note that the municipal standard for lead may be more stringent.

All vehicle dismantlers that offer to prepare lead for transport in quantities greater than 1,000 kg (approximately 50 lead-acid batteries) are required to:

- Use a transporter that is licensed to transport lead-acid batteries. The transporter must have a valid Hazardous Waste Transport License issued by the Ministry of Environment.
- Ensure the transporter manifests the shipment. The transporter will put a manifest number on your invoice.
- Store records (i.e., invoice with manifest number) for a minimum of two years.

3.6.2 Operational Checklist

The following questions can be used as a checklist for managing lead.

1. Are all lead-acid batteries and tire weights removed in the dismantling area?
2. Are the lead-acid batteries and tire weights stored in a dry location?
3. Are there provisions to neutralize the spilled acid from lead-acid batteries with lime or bicarbonate of soda?
4. Does the transporter have a current Hazardous Waste Transport License for lead issued by the provincial Ministry of Environment?
5. Does the transporter manifest each shipment over 1,000 kg and put the manifest number on each invoice?
6. Do you store the transporter's records for two or more years?
7. Do you know the threshold spill quantities that must be reported to the Provincial Emergency Program?
8. Do you and your employees know the Provincial Emergency Program number?
9. Do you sample your oil/water separator at least once per year and test for lead (skip this question if you do not have an oil/water separator)?

If you answered NO to any one of these questions, you should adjust your operations. The Best Management Practices outlined below provide guidance on making operational changes.

3.6.3 Best Management Practices

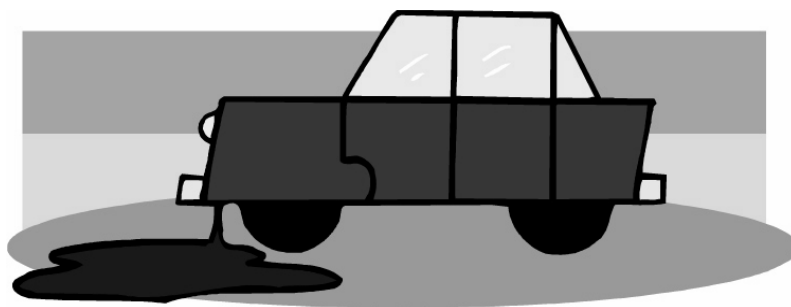
- Tire weights are removed in the dismantling area.
- Tire weights are stored in a strong container and given or sold to metal recyclers.
- Lead-acid batteries are placed in a plastic, leak-proof container.
- The leak-proof container has a tight fitting lid or is in a covered area to keep out rain or snow.
- Lime or bicarbonate of soda are used to neutralize spilled battery acid.
- Eye protection and emergency eye-wash products are located adjacent to the battery container to neutralize any battery acid that gets in an employee's eyes.
- Spilled battery acid is cleaned up with absorbent and then disposed of as a hazardous waste.

3.7 Soils (Leachable Toxic Wastes)

Any spill onto the surface of the ground has the potential to contaminate the soil. Depending on the substance spilled and the quantity, the soil may be classified as a hazardous waste. In order to determine if the soil is a hazardous waste the soil must first be tested. The Hazardous Waste Regulation, Schedule 4, Part 2 describes the testing method for leachable toxic waste and Table 1 lists the Leachate Quality Standards. If the contaminant concentration exceeds the standards listed in Table 1 the soil is classified as a hazardous waste and must be handled accordingly.

Contamination is preventable and vehicle dismantlers should look at the practices that cause contamination on their property. The most common sources of spills are:

- failure to use drip pans in the receiving area;
- storage of wet parts without any sort of containment;
- storing of wet vehicles in hulk storage area;
- failure to crimp and plug lines on hulks and wet parts;
- removing of wet parts outside of dismantling area;
- leaking equipment (e.g., forklifts); and
- crushers.



3.7.1 Legal Requirements

Leachable toxic waste is considered a hazardous waste and must be managed appropriately. The legal thresholds for registration, storage, and transporting leachable toxic waste are listed in Table 10 below.

Table 10: Legal Thresholds for Leachable Toxic Waste

Registration	Storage	Manifest	Spill
500 kg/L	500 kg/L	5 kg/L	*
* Refer to the Spill Reporting Regulation for substance specific spill reporting thresholds.			

All vehicle dismantlers that offer to prepare leachable toxic waste for transport in quantities greater than the thresholds listed in the HWR are required to:

- Use a transporter that is licensed to transport contaminated solids. The transporter must have a valid Hazardous Waste Transport License issued by the Ministry of Environment.
- Ensure the transporter manifests the shipment. The transporter will put a manifest number on your invoice.

Store records (i.e., invoice with manifest number) for a minimum of two years.

3.7.2 Operational Checklist

The following questions can be used as a checklist for managing soils.

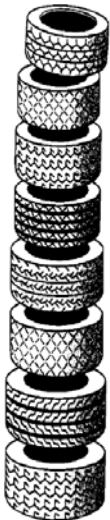
1. Are leachable toxic wastes stored in a drum as a hazardous waste?
2. Are your storage quantities always under the applicable threshold?
3. Are transporters licensed to transport hazardous leachable toxic waste?
4. Do licensed transporters manifest all shipments over the particular threshold?

If you answered NO to any one of these questions, you should adjust your operations. The Best Management Practices outlined below provide guidance on making operational changes.

3.7.3 Best Management Practices

- Steel drums are used to store solids. Steel drums provide the necessary strength to store contaminated solids.
- Drums are stored on an impermeable surface so that any spilled soils can be easily cleaned up.
- Drums are stored in a covered area to keep rain water and snow off the hazardous waste.
- Drums have proper lids.
- Spills in the bulk storage and receiving areas are cleaned up immediately.

3.8 Tires



Storage of tires is considered to be an environmental risk due to the impact on the environment in the unlikely event that they catch on fire.

There are no legal thresholds for the storage of tires, although it is recommended that no more than 1,000 tires are located on a site at any one time.

Waste tires are managed in British Columbia by Tire Stewardship BC. Tire Stewardship BC is a not for profit organization formed to manage the scrap tire recycling program on behalf of tire retailers in the province.

Tire Stewardship BC will pick up used tires at no cost if they have been removed from the rim. For more information about Tire Stewardship BC, go to: <http://www.tirestewardshipbc.ca/generator.htm>.

Section 4: Refrigerants

Refrigerants from wet vehicles are highly regulated and require careful management because they may be ozone depleting substances and/or have a high global warming potential. The average vehicle with air conditioning will contain approximately 2 kg of refrigerant. If 2 kg of CFC-12 (R12) is vented to the atmosphere, this would have the same impact as 21.2 tonnes of CO_{2(eq)} vented to the atmosphere. If 2 kg of HFC 134a is released to the atmosphere, this is equivalent to the release of 2.6 tonnes of CO_{2 (eq)}.

4.1 Legal Requirements

Ozone Depleting Substances and other Halocarbons (ODS), commonly used as refrigerants in air conditioning units, have a great number of specific rules regarding their handling. R12 or HFC 134a are the most common refrigerants used in motor vehicle air conditioners however reference to these refrigerants in this section is also intended to include alternatives. The requirements for the removal of refrigerants are summarized below.

- A vehicle dismantler must not allow the release of Ozone Depleting Substances or other Halocarbons as listed under Class I, II and III of the British Columbia Ozone Depleting Substances and Other Halocarbons Regulation from:
 - an air conditioner in a wet vehicle;
 - a container, device or equipment used in the evacuation or storage; and
 - the disposal or destruction of R12 or HFC134.
- Only an approved person can evacuate R12 or HFC134 from wet vehicles.
- A vehicle dismantler must ensure the approved person uses a device for the evacuation of R12 or HFC134 that meets or exceeds the performance standards SAE Standard J1990, J2209, or J2210.
- A vehicle dismantler must not dispose of an air conditioner unit or a wet vehicle unless the R12 or HFC134 has been evacuated using a prescribed device.
- A vehicle dismantler must store the evacuated R12 or HFC134 in an appropriate container that is refillable.
- The vehicle dismantler must maintain and make available for inspection during normal business hours at the business premises a record of each employee or contractor who is an approved person. Records must specify the employee's/contractor's name, registration number and date the employee/contractor successfully completed the Environmental Awareness course and the motor vehicle air conditioning course that are required to become an approved person.
- An approved person must record in a service log:
 - the amount of R12 or HFC134 evacuated;
 - the date the R12 or HFC134 was evacuated; and
 - the name and registration number of the approved person who performed the evacuation and, if that person performed the

evacuation as an employee or agent of a business, the name of that business.

- The service log must be maintained and available for inspection at the approved person's normal place of business.
- The approved person must affix a durable label or tag on the wet vehicle after the R12 or HFC134 has been evacuated to clearly indicate that the R12 or HFC134 has been evacuated.
- Containers storing evacuated R12 or HFC134 should be properly labeled, including ASHRAE refrigerant number and be hydrostatically tested and/or replaced every 5 years.
- A vehicle dismantler must keep records of the volumes of all R12 or HFC134 removed by the approved person.

4.2 Operational Checklist

The following questions can be used as a checklist for managing ODS.

1. Does the approved person inspect and check every wet vehicle with air conditioning to determine if refrigerants are present?
2. Does the approved person remove the refrigerants from the wet vehicle?
3. Does the approved person tag each wet vehicle that is checked and evacuated?
4. Does the approved person tag and cross reference to his/her log book each wet vehicle that has had refrigerants removed?
5. Does the approved person have a valid Interprovincial Number?
6. Does the approved person use equipment that is SAE J1990, J2209, or J2210 standard?

If you answered NO to any one of these questions, you should adjust your operations. The Best Management Practices outlined below provide guidance on making operational changes.

4.3 Best Management Practices

- Refrigerants are checked and removed in the receiving area by a mobile recovery unit before the wet vehicle is dismantled. Removing the refrigerants before work starts on the wet vehicle avoids the accidental release of refrigerants.

- A company with a mobile recovery unit and an approved person are hired to check all wet vehicles with air conditioning units and to remove the refrigerants.
- Wet vehicles are tagged with a marker pen to show that they have been checked for refrigerants and any residual refrigerants have been removed. The tag should include the approved person's Interprovincial number and a cross-reference to the log book or record retained by the vehicle dismantler.
- The vehicle dismantler has a copy of the approved person's HRAI certificate and a description of the equipment used on file.
- The vehicle dismantler has a record of each wet vehicle checked and evacuated by the approved person.

Section 5: Practices for the Work Area

The following the best management practices will assist vehicle dismantlers in having a safe and clean facility that does not have contaminated soils.

The best management practices listed below are divided into four sections. Section 5.1 outlines the activities in the different work areas. Section 5.2 discusses the different types of equipment and infrastructure that vehicle dismantlers use. Section 5.3 outlines the site management procedures and Section 5.4 outlines emergency and spill procedures.

5.1 Work Areas

5.1.1 Office Area

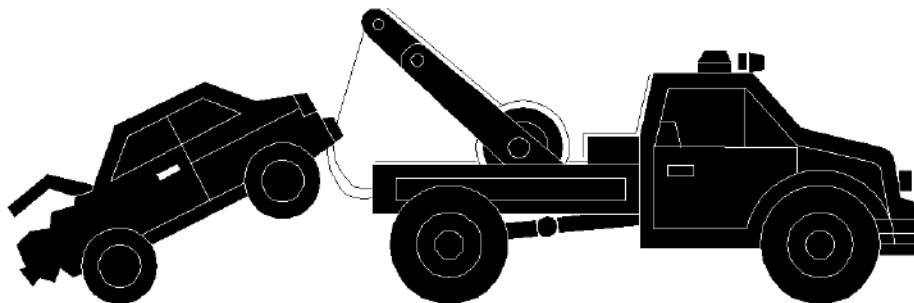
- Records from transporters licensed to transport hazardous waste put manifest numbers on invoices and invoices are kept in a central file for a minimum of two years.
- A copy of the transporter's current license to transport hazardous waste is kept on file.
- Standard Operating Procedures are summarized in writing and placed in a binder that is accessible to all employees (note that Best Management Practices could serve as Standard Operating Procedures if applicable).
- Employees are briefed regularly on safety and environmental policies and procedures.
- Spill procedures are summarized on signs for easy access.
- Local and Provincial Emergency Program phone numbers (1-800-663-3456) are posted in an obvious location.

- Detailed spill procedures are summarized in a binder and are accessible to all employees.
- Environmental Management Plans and audit reports required by the VDRIEPR are kept in a central file on site.

5.1.2 Receiving Area

This is the area where an incoming wet vehicle is temporarily stored prior to being moved to the dismantling area. The best management practices in this area are:

- Ensure drip pans are in receiving areas to catch leaks from recently dropped wet vehicles.
- Small drips and leaks are cleaned up immediately.
- Contaminated solids and adsorbent used to clean up spills are stored in barrels and disposed of in the same manner as used oil and antifreeze.
- Wet vehicles that are leaking are moved immediately to the dismantling area and processed.
- An approved person with a mobile evacuation unit checks and removes refrigerants and then tags each processed vehicle.



5.1.3 Dismantling Area

This is the main work area where wastes, wet parts and other parts are removed. When all wastes are removed, the wet vehicle is now considered a hulk. The best management practices in this area are:

Structures

- Adequate secondary containment is installed so any spilled wastes from the wet vehicle being processed cannot drain to the outside environment.
- Storm water does not drain into the dismantling area.
- Dismantling area does not have drains to sewers, storm drains or to the environment.

- If large quantities of hazardous liquids are stored in the dismantling area, then additional secondary containment for the hazardous liquids is required.

Activities

- Remove all wastes and all valuable wet parts in the dismantling area.
- Remove all wet parts including power steering racks before storage – if left on the hulk, they will eventually leak and cause a spill.
- Use air pump equipment to remove liquids quickly and efficiently.
- Drain differentials before storage.
- Do not drain fuels in the dismantling area. To avoid the possibility of fire, fuels should be drained outside in a covered location with an impermeable surface.
- Crimp and plug lines that contained wastes.

5.1.4 Waste Storage Area

This is the area where wastes are stored prior to transportation to recycling facilities. The best management practices in this area are:

- Keep the containers under cover to avoid precipitation from getting into the containers. (If water gets into the containers, oil will float and spill out of the container and antifreeze will mix with the water and overflow).
- Ensure drains in the storage area are sealed to prevent spilled wastes from getting into drainage pipes.
- Ensure the area does not flood during rain or snowmelt events.
- Avoid the use of underground storage tanks – they may leak.
- Ensure the building or shed has an adequate roof, an impervious floor and adequate secondary containment.
- Ensure fuels are stored in a separate, well-ventilated area.

5.1.5 Wet Parts Storage Area

This is the area where the wet parts (parts containing or having contained wastes) are stored prior to shipping. The best management practices in this area are:

- Store engines, cores, and other drained wet parts in a building or shed that has an adequate roof, floor and secondary containment.

5.1.6 Hulk Storage Area

This is the area where hulks are stored prior to being shipped off site for recycling. The best management practices in this area are:

- All wastes and wet parts are removed from hulk prior to storage.
- All spills and leaks are cleaned up quickly.
- All hulks stored in this area with air conditioning systems have been evacuated and tagged by the approved person.

5.1.7 Parts Cleaning Areas

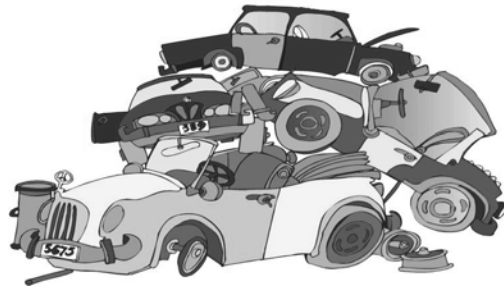
These are the areas where parts are cleaned either by solvents or by pressure washing. The best management practices in these areas are:

- Ensure secondary containment of wastes including solvents.
- Ensure over-spray from power washers is contained and does not contaminate surrounding soils.
- Do not discharge water from power washer to an oil/water separator, storm drain or sewer – ensure it is a closed-looped system.

5.1.8 Crusher Area

This is the area where hulks are crushed prior to shipping to steel recyclers. If hulks are not crushed on site, this section does not apply. The best management practices in this area are:

- Only hulks are crushed on site.
- All water from hulks is collected and filtered through oil absorbent filters.
- Spills are cleaned up after the crusher leaves the site.



5.2 Environmental Equipment and Infrastructure

5.2.1 Secondary Containment

- Ensure that the liquid wastes have adequate containment to ensure that any spills are contained. Good secondary containment is defined as 110% of the largest container or 25% of the total volume of containers.
- Store containers in an area with impermeable floors and adequate roof structures.

5.2.2 Containers

- Keep used wastes containers close to the dismantling area so that your employees do not need to transport hazardous liquids over long distances.
- Ensure containers have tight fitting lids.
- Ensure a large funnel is available for employees to pour oil into the storage container.
- Ensure containers are clearly labeled to prevent cross contamination of wastes.
- Use steel drums to store wastes. Plastic containers are OK, but the plastic deteriorates over time and will eventually fail. Plastic containers are also more susceptible to puncture or vandalism causing a major spill.
-

5.2.3 Oil/Water Separators

- Ensure oil/water separators are cleaned out on a regular basis – every six months.
- Do not use your oil/water separator as part of your spill control strategy. Oil/water separators can be easily overloaded by a large spill of used oil resulting in a discharge of oil to the environment and potential charges from regulatory authorities.

- Take at least one water sample at the outlet every year and compare the results to the discharge standards (Table 3).

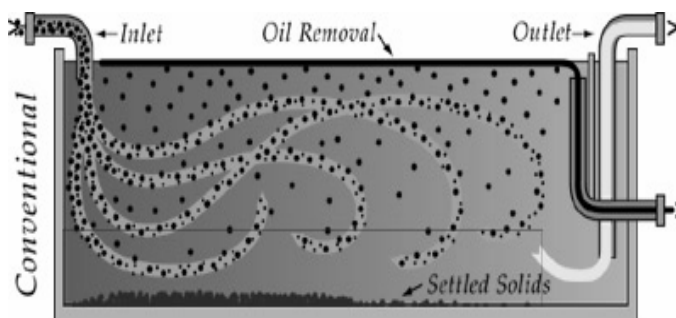


Diagram 1: Cross Section of Conventional Oil/Water Separator

5.2.4 Buildings

- Ensure roofs are able to keep rain and snow away from containers and wet parts containing wastes.
- Ensure floors are made of impervious materials – cracks in floor have been filled.
- Ensure areas are sufficiently high to avoid flooding during normal precipitation events.
- Ensure storm runoff and snowmelt is diverted away from buildings storing wastes.
- Keep work areas clean and uncluttered, preventing spills.
- Block drains to prevent spills from leaving the property.
- Store fuels are in well-ventilated areas to prevent fire.

5.2.5 Spill Kit and Clean-up

Emergency and spill response equipment must be adequate for the quantity of wastes processed and stored on site. The VDRIEPR also requires each vehicle dismantler to have a contingency plan documenting procedures to be followed during an emergency.

Spill kits should include the following:

- safety equipment for employees, including gloves and safety glasses;
- absorbent material for soaking up oils and solvents (e.g., rags, towels, pads, sawdust);
- material to neutralize battery acid (e.g., lime); and
- shovels or scoops to clean up spills.

Spills can be a safety and an environmental hazard. Make sure the work areas are clean and safe.



5.3 Site Management

5.3.1 Inspections

- The owner or general manager should inspect the yard for small spills on a weekly basis.
- Have your yard inspected on an annual basis.
- Record the results of weekly and annual inspections and keep records.

5.3.2 Training

- Train your staff on how to handle used-oil, on spill prevention and on spill control and what to do in the event of a large spill.
- Keep a written record of the discussions you have with staff regarding operating procedures, spill prevention and spill control.
- Record the nature of the discussions with employees using a diary or a “Note to File”. Note which employees were involved with the discussion.

5.4 Spills and Emergencies

5.4.1 Drips and Leaks

- Ensure drip pans are in receiving areas to catch leaks from recently purchased wet vehicles.
- Ensure spills, large and small, are cleaned up immediately.
- Ensure equipment is available to clean up oil spills, including:

- Shovels and pails to clean up contaminated solids and gravels in the receiving, hulk storage and the crusher areas.
- Adsorbent to clean-up used oil in the dismantling and wet parts storage areas.
- Storage drums to collect contaminated solids.

5.4.2 Large Spills

- Ensure employees are trained in what to do in the event of a large spill (remember that spills above the thresholds in Section 2.2.4 will necessitate an immediate call to the Provincial Emergency Program to report a spill. If the spill migrates off your yard into sewers, storm drains or fish bearing waters, charges by the regulatory agencies could occur).
- Ensure Provincial Emergency Program's (1-800-663-3456) number is posted near the hazardous waste storage areas.
- Ensure spill kits and equipment are adequate to deal with a large spill.

5.4.3 Fire

- Ensure the Fire Marshal has inspected the site and is familiar with the location of wastes in the event of a fire.
- Ensure quantities of flammable wastes are kept to a minimum to ensure they do not accelerate a small fire.
 - Ensure piles of tires are kept to a minimum and stored away from buildings – preferably less than 100 tires per pile.
 - Ensure gasoline is drained from wet vehicles in a well-ventilated area prior to the use of any cutting torches.
- Ensure gasoline is stored in a separate well-ventilated shed.



Section 6: Other Resources

The following environmental programs for vehicle dismantlers are detailed below:

- Automotive Recycler's Environmental Association (BC)
- United States Automotive Recyclers Association's Environmental Compliance for Automotive Recyclers
- State of California Auto Dismantlers Association
- New Hampshire Green Yards Program
- European Group of Automotive Recycling Associations

6.1 Automotive Recycler's Environmental Association (BC)

The Automotive Recycler's Environmental Association (AREA) provides environmental management plans for the VDRIEPR for association members. See their web site for more information: <http://www.area-bc.ca/>.

6.2 United States Automotive Recyclers Association's Environmental Compliance for Automotive Recyclers

The Automotive Recyclers Association in the United States (ARA-US) has developed a comprehensive Environmental Compliance website for vehicle dismantlers to determine the legislative requirements for their state, some hints for best management practices and an environmental checklist for vehicle dismantlers to determine compliance. Go to: www.ecarcenter.org for a review of the materials.

6.3 State of California Auto Dismantlers Association

The State of California Auto Dismantlers Association (SCADA) has the largest industry-operated environmental program in North America. SCADA was recently recognized for their environmental leadership and was recognized by the Governor's Environmental and Economic Leadership Award.

At the heart of SCADA's program is its *Partnership in the Solution* manual (see <http://www.scada1.com/documents/partners-manual.pdf>). The manual is a well laid out summary of the requirements, best management practices and suggestions for vehicle dismantlers.

6.4 New Hampshire Green Yards Program

The New Hampshire Green Yards Program is similar to the State of California; however, it is a government program that promotes Pollution Prevention.

The Environmental Compliance Manual and Self-Audit Checklist form the basis of the program (<http://www.des.nh.gov/SW/Greenyards/GYComplianceManual.pdf>). The manual is well laid out, simple and has many photographs that provide useful guidance for recyclers.

6.5 The European Group of Automotive Recycling Associations

The European Group of Automotive Recycling Association (EGARA) was formed in 1991 and has 12 national organizations. One of the purposes of the EGARA and its

mission is to develop environmentally justified recycling methods for vehicle dismantlers. Because of language barriers, only the vehicle dismantling program for the United Kingdom was researched.

The Motor Vehicle Dismantling Association (MVDA) is the trade association representing the interests of vehicle dismantlers and their customers in the United Kingdom (<http://www.mvda.org.uk/>). One of the objectives of the MVDA is to maintain and improve best practice through the Association's Code of Conduct and Practice.

In 2000, the European Union (EU) passed a Directive (2000/53/EC) that required member states to ensure the collection, treatment and recovery of end-of-life vehicles. The Directive included the requirement that the last owner of a vehicle could drop off the end-of-life vehicle at an authorized treatment facility and that the producers of the vehicles would cover all or a significant portion of the cost of the program.

Appendix 1:

Vehicle Dismantling and Recycling Industry Environmental Planning Regulation

Definitions

1 In this regulation:

"**Act**" means the *Environmental Management Act*;

"**association**" means an association of two or more facilities, which association includes in its purposes

(a) preparing a plan for the purposes of this regulation, and

(b) monitoring and reporting on compliance with the plan;

"**facility**" means an establishment that is engaged in the vehicle dismantling and recycling industry;

"**motor vehicle**" has the same meaning as in the *Motor Vehicle Act*;

"**plan**" means an environmental management plan required under section 2 (1);

"**qualified professional**", in relation to a duty or function under this regulation, means an applied scientist or technologist specializing in an applied science or technology applicable to the duty or function, including, if applicable and without limiting this, agrology, biology, chemistry, engineering, geology or hydrogeology and who

(a) is registered in British Columbia with the appropriate professional organization, is acting under that organization's code of ethics and is subject to disciplinary action by that organization, and

(b) through suitable education, experience, accreditation and knowledge, may be reasonably relied on to provide advice within their area of expertise;

"**vehicle dismantling and recycling industry**" has the same meaning as in Schedule 2 of the Waste Discharge Regulation;

"**wet vehicle**" means a motor vehicle that

(a) is no longer used for transportation purposes, and

(b) has not been reduced to a steel hulk or to a steel hulk with only the plastic, fabric or foam components still attached.

Requirement for an environmental management plan

2 (1) A person that operates or plans to operate a facility that dismantles more than 5 wet vehicles in a calendar year must

(a) either

- (i) have an environmental management plan for waste management, reduction or prevention, or
- (ii) be a member of an association that has an environmental management plan for waste management, reduction or prevention, and
- (b) register with a director under section 3.
- (2) A person must comply with subsection (1),
 - (a) if operating the facility on or before September 1, 2008, on or before that date, and
 - (b) otherwise, before beginning to operate the facility.
- (3) A plan for the purposes of this section must
 - (a) be approved by a qualified professional,
 - (b) describe how each of the following wastes will be removed from wet vehicles at facilities to which the plan applies:
 - (i) ozone depleting substances and other halocarbons;
 - (ii) oils, brake fluids, solvents, fuels and other hydrocarbons;
 - (iii) antifreeze;
 - (iv) lead and lead-acid batteries;
 - (v) tires;
 - (vi) mercury switches;
 - (vii) windshield washer fluid,
 - (c) describe how each waste referred to in paragraph (b) will be stored, treated, recycled or disposed of in compliance with the Act and applicable regulations, and
 - (d) set out
 - (i) management processes for minimizing or eliminating the discharge of wastes to the environment, and
 - (ii) a contingency plan documenting procedures to be followed during an emergency.
- (4) Within 3 months after each 5th anniversary of the date their registration is effective under section 3 (2), a person operating a facility for which there is a plan specific to the facility must
 - (a) review the plan,
 - (b) amend or replace the plan if necessary to ensure that that person has a plan that complies with subsection (3), and

(c) have the reviewed, amended or replacement plan approved by a qualified professional.

(5) Within 3 months after September 1, 2013 and within 3 months of each fifth anniversary of that date, an association that has a plan for 2 or more facilities must

(a) review the plan,

(b) amend or replace the plan if necessary to ensure that the association has a plan that complies with subsection (3), and

(c) have the reviewed, amended or replacement plan approved by a qualified professional.

Registration

3 (1) A person described in section 2 (1) must register by providing all the following information to a director in a form approved by the director:

(a) the full legal name of the individual, partnership, corporation or other entity operating or planning to operate the facility;

(b) the name, address and telephone number of an individual who is located at or near the facility and is the local contact for the facility;

(c) the address of the facility and the legal description of the land on which the facility is located;

(d) the address at which the plan that applies to the facility may be viewed or copied;

(e) confirmation that the facility has a plan that complies with section 3, or is a member of an association that has a plan that complies with section 3 and the name, address and telephone number of that association;

(f) any other relevant information the discharger wishes to provide.

(2) Registration under this section takes effect on the date a complete registration is received by a director.

(3) A person registered under this section must provide a director with written notice within 30 days after

(a) a change in information provided in the person's registration, or

(b) ceasing to

(i) operate the facility, or

(ii) dismantle more than 5 wet vehicles in a calendar year.

Reporting by facility

4 (1) A person operating a facility that is not a member of an association must have a report prepared by a qualified professional on the matters described in subsection (2) (b)

(a) for the period up to the date that is 2 years after the date of registration under this regulation, and

(b) for each 2-year period after that date.

(2) A report under subsection (1) must

(a) be in writing,

(b) describe

(i) how the wastes described in the plan for the facility were managed,

(ii) whether the management of those wastes was in accordance with the plan, and

(iii) the effectiveness of the management processes used for minimizing or eliminating the discharge of wastes to the environment, and

(c) be completed within 3 months after the end of each 2-year period described in subsection (1).

Reporting by association

5 (1) An association that has prepared a plan for more than one facility must have a report prepared by a qualified professional on the matters described in subsection (2) (b)

(a) for the period up to September 1, 2010, and

(b) for each 2-year period after that date.

(2) A report under subsection (1) must

(a) be in writing,

(b) provide the name and address of each facility to which the plan applies,

(c) specify how many members of the association were audited for compliance with the plan and the identity of each of those members, and

(d) describe

(i) how the wastes described in the plan were managed by each facility audited,

(ii) whether the management of those wastes was in accordance with the plan, and

(iii) the effectiveness of the management processes used for minimizing or eliminating the discharge of wastes to the environment, and

(e) be completed within 3 months after the end of each period described in subsection (1).

- (3) An association that has at least 3 members must audit
 - (a) one third of its members for a report under this section, and
 - (b) each of its members at least once in the course of completing 3 consecutive reports under this section.
- (4) An association that has 2 members must audit
 - (a) one member for a report under this section, and
 - (b) each of its members at least once in the course of completing 2 consecutive reports under this section.

Maintaining a plan

6 At all times, a person operating a facility that has its own plan, and an association that has a plan for 2 or more facilities, must maintain the plan, and amend it as necessary, so that if a person complies with the plan, the person also complies with the requirements of the Act and applicable regulations.

Records

7 (1) A person described in section 2 (1) must keep, at the address required under section 3 (1) (d) for the person's registration form, an up-to-date copy of the plan that applies to the facility, and the report prepared under section 4 or 5, as applicable, in relation to the plan.

(2) On request of a director or officer, a person described in subsection (1) must produce the plan or report to the director or officer for inspection or copying.

Offences and penalty

8 (1) A person described in section 2 (1) who is not a member of an association commits an offence and is liable on conviction to a fine of not more \$200 000 if the person does any of the following:

- (a) fails to have a plan when required under section 2 (2);
- (b) fails to register with a director when required under section 2 (2);
- (c) has a plan that contains false or misleading information;
- (d) provides false or misleading information in a registration form;
- (e) fails to have a reviewed, amended or replacement plan approved by a qualified professional within the period established by section 2 (4);
- (f) fails to have a report prepared when required under section 4 (1);
- (g) has a report prepared that
- (i) does not comply with section 4 (2), or

(ii) contains false or misleading information;

(h) fails to maintain the plan as required under section 6.

(2) An incorporated association, or each member of an unincorporated association, that does any of the following commits an offence and is liable on conviction to a fine of not more than \$200 000:

(a) fails to have a plan prepared when the facilities to which the plan relates are required under section 2 (2) to have a plan;

(b) has a plan that contains false or misleading information;

(c) fails to have a reviewed, amended or replacement plan approved by a qualified professional within the period established by section 2 (5);

(d) fails to have a report prepared when required under section 5;

(e) has a report prepared that

(i) does not comply with section 5 (2), and with section 5 (3) or (4) as applicable, or

(ii) contains false or misleading information;

(f) fails to maintain the plan as required under section 6.

(3) A member of an association commits an offence and is liable on conviction to a fine of not more \$200 000

(a) whether or not the association is incorporated, if the person

(i) does not have a plan,

(ii) fails to register with a director when required under section 2 (2),

(iii) has a plan that includes false or misleading information, or

(iv) provides false or misleading information in a registration form, and

(b) if the association is incorporated and the association

(i) fails to have a plan reviewed, amended or replaced when required under section 2 (5),

(ii) fails to have a report prepared when required to do so under section 5,

(iii) has a report prepared that

(A) does not comply with section 5 (2), and with section 5 (3) or (4) as applicable, or

(B) contains false or misleading information, or

(iv) fails to maintain the plan as required under section 6.

(4) Subsection (3) (b) does not apply to a member if the member,

(a) in relation to subsection (3) (b) (i), has a reviewed, amended or replacement version of the association's plan approved by a qualified professional when the association is required to do so under section 2 (5),

(b) in relation to subsection (3) (b) (ii), has a report on the association's plan prepared under section 4 when the association is required to do so under section 5,

(c) in relation to subsection (3) (b) (iii), when the association is required to have a report prepared that complies with section 5 (2), and with section 5 (3) or (4) as applicable, has a report prepared that

(i) complies with section 4 (2), and

(ii) does not contain false or misleading information, and

(d) in relation to subsection (3) (b) (iv), maintains the association's plan as required under section 6.